THE ROLE OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT IN GROWTH MANAGEMENT

A Report to the South Florida Water Management District by

Warren Viessman, Jr., Professor and Chairman,
Department of Environmental Engineering Sciences,
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Gainesville, Florida 32611

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EXECUTIVE SUMMARY

THE ROLE OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT IN GROWTH MANAGEMENT

EXECUTIVE SUMMARY

A basic requirement for successful growth management is the availability of reliable information upon which good decisions can be made. But this information must be properly targeted, and appropriately displayed, if it is to be used effectively. Clearly, the Water Management Districts have recognized this, but their job is incomplete. The need for developing new lines of communication, exploring imaginative, unconventional options for solving problems, and for devising better ways to inform decision makers is compelling.

Good planning, plan implementation, and plan monitoring are also fundamental to the success of a growth management strategy. Furthermore, planning at several levels -- state, regional, and local, ensures a balancing of views on resource management issues and environmental problems. The WMDs must therefore be concerned with how they can actively and positively conduct and influence these planning processes.

The SFWMD has been influencing patterns of growth in its region, either by design or as the result of its actions, for years. And the District has been actively seeking new approaches to dealing with growth. These are exemplified by a series of 1983-1984 task force reports on such issues as: assistance to local governments; industrial siting; flood plain management; and groundwater. These reports contain

many worthwhile recommendations, but effective implementation of them may not be possible without some shifts in philosophy, reordering of priorities, or addition of personnel. Furthermore, implementation of these recommendations is not entirely under the control of the SFWMD.

The SFWMD is performing in an exemplary manner in the traditional areas of its expertise: drainage, flood control, and systems' operation. But relative to comprehensive planning, it is still grappling with the means to be most influential. There is criticism by state agencies, the Governor's Office, interest groups, and various governmental planning offices that the District has not yet established appropriate liaisons; that its guidance is not specific enough on the issues being dealt with; and that it skirts politically sensitive issues. It is with these aspects of its operation, that the District will have to focus more attention. For the most part, the District understands its limitations and recognizes the problems with which it must deal. The challenge lies in devising a strategy for becoming a welcome and active partner in developing and implementing growth management policies for South Florida and the state.

The WMDs have broad statutory authority and discretion related to water control and management, but they have not exercised the full limits of that authority. There are many reasons for this, but the fact remains that the management of Florida's waters is not going to be efficient if it is done on a fragmented, piecemeal basis. The SFWMD has generally had an integrated approach to flood control and drainage, but in areas of water supply and water quality management, for example, its

activities are somewhat disjointed and related more to planning, permitting, and advising than actual management.

The thesis of this study is that information -- its generation, interpretation, and use -- is the basis for the design and implementation of good growth management strategies. Implicit is the concept that the development of water management plans and their translation into action programs should be the focus of WMD activity related to growth management. Three approaches were considered in terms of how they would facilitate a more active stance for the SFWMD in meeting its growth management obligations:

-- Maintaining the status quo;

-- Transition to a regional growth management agency; and

-- Assumption of broader responsibilities in water resources management.

The third approach was considered to be the most viable. And in a word, the recommended role in growth management is:

LEADERSHIP.

If the vast resources of the SFWMD are to best serve the state and its constituents, it must be a leader in all that it does. Specifically, the growth management role should be one of:

ADVANCING AS FAR AS POSSIBLE INTO ALL DIMENSIONS OF COMPREHENSIVE WATER MANAGEMENT:

-- IN COOPERATION AND COORDINATION WITH OTHER MANAGEMENT AUTHORITIES AT ALL GOVERNMENTAL LEVELS;

-- WITH AN ATTITUDE THAT RESPECTS THE INTEGRITY OF THESE AUTHORITIES; AND

-- WITH INITIATIVE AND VIGOR.

The recommended role can be initiated without the need for any immediate new statutory authority. But it will not be easy for the SFWMD to fill. The District will have to act rather than react; and it will have to:

-- Strengthen the bond of trust between itself and those other agencies, organizations, and individuals with whom it must deal;

-- Work to develop operational plans in anticipation of regional needs, and use its authorities to see that these plans become the vehicles for water and related land resources decisions in South Florida; and

-- Actively advise the Governor and Legislature with the objective of influencing legislation and water policy.

If the District accepts this challenge, the Executive Council and Governing Board must move to ensure that the exceptional resources of the District are used optimally to address critical growth management issues, and to guarantee implementation of sound regional water management strategies.

It is considered that the key to a more positive growth management venture by the District is the development of factually supported, before-the-fact water management plans for the principal subregions of South Florida. These plans should include: alternative strategies for meeting water supply needs, information on the impacts of implementing alternatives, details of the economic and social costs of various actions; and implications of proposed land-use actions on water quantity and water quality. The plans should be sufficiently detailed so that they can guide local government planning processes and they should be made available in time to provide that guidance.

Recommendations to support the proposed growth management role are summarized below.

Water Resources Planning

Planning that is relevant, implementable, factually based, and timely, is fundamental to a leadership role for the District in growth management. Several levels of planning are important: local government comprehensive planning; state water planning; and operational water management planning. The SFWMD should:

-- Be a defining force in establishing the format of the state water plan;

-- Design the South Florida component of the state water plan as a policy guidance document; and

-- Enlist the aid of the other WMDs and the RPCs in influencing the state planning process to guarantee consistency in plan elements among the districts, with the objective of producing a state-wide water policy.

Water Resources Assessment

A water resources assessment process should be used as the focus for information transfer within the District's organization and throughout the South Florida region. The assessment would be in two parts: a resource inventory and trends analysis; and a policy analysis. It is therefore recommended that:

-- The SFWMD initiate a water resources assessment and appraisal program. This program should have District-wide and subregional dimensions, and its responsibilities should include:

  -- Assessing the status of both the quality and quantity of the District's water resources;

  -- Identifying long- and short-range problems and recommending courses of action leading to their solution;

  -- Appraising the adequacy of existing and proposed water resources policies and programs and making recommendations for change;

  -- Designing procedures for the implementation of a District-wide and statewide water policy;

  -- Defining the District's interest in continuing or emerging water and related land resources issues; and

  -- Developing standards and procedures for plan formulation and project analysis.

-- A data base and monitoring center should be established. This center would incorporate the existing data elements of the District. It would be responsible for the development of a District-wide monitoring system for: facilitating the assessment process; providing input to modeling efforts; and serving as an information bank for assessing compliance with permits issued by the District. In addition, the center would:

- -- Publish a catalog of sources of water-related data;
- -- Identify gaps in the water data base and identify the probable long-term basic data requirements needed to support planning, decision making, and permitting processes;
- -- Emphasize procurement of data to support groundwater quantity and quality analyses and water quality modeling efforts; and
- -- Work with nonwater agencies to coordinate their data collection programs with water resources planning and management needs.

-- A major responsibility of the assessment program would be the appraisal of state and local policies relating to water resources and the recommendation of policies to improve the capabilities of the District and the state for managing growth.

Water Resources Management

Although the WMDs do not directly supply water to users, they have the authority to produce water and they issue consumptive use permits that are the state's allocation instruments. The Districts are concerned with all aspects of water -- quality, quantity, surface water, groundwater, drainage, flood control, wastewater reuse, and wastewater disposal -- and in seeing that it is used wisely and with minimal adverse impacts. In support of this responsibility, it is recommended that:

-- The SFWMD establish an operational modeling program to:

- -- Anticipate water allocation and use problems and develop implementable strategies for confronting them;
- -- Explore options for better water management within subregions using already existing facilities as configured or by considering various interconnections;

-- Assess options for addressing water and related land resources management issues considering all technical, legal, political and other constraints for the purpose of identifying new directions for water policy and/or adjustments to prevailing philosophies;

-- Establish priorities on actions to be taken regarding water supply, water quality management, and environmental protection;

-- Assess the economic and social costs of exercising various water management options;

-- Support local government planning and management efforts;

-- Provide subregional forums for looking at land-water issues and designing coordinated management strategies; and

-- Serve as the District's reference standard for plan evaluation, DRI review, participation in Chapter 380 Committees, and for issuing consumptive use permits.

Groundwater Management

The considerable importance of groundwater to the health and well being of the citizens of the State of Florida suggests that the District should assign a high priority to this component of the hydrologic system. It is recommended that:

-- The SFWMD undertake a leadership role in developing a groundwater management strategy for the State of Florida. This strategy should be consistent with the policies of the SFWMD and the other WMDs. It should recognize both quality and quantity dimensions. It should consider: areas of recharge and discharge; present and anticipated demands; the storage, disposal, and transport of solid wastes and other hazardous materials; location of future well fields; and siting of all facilities that might affect the quality or quantity of the

resource. These efforts should be coordinated with DER, EPA, other WMDs, RPCs, and other appropriate agencies and organizations.

Coordination

The District coordinates its programs with the Governor's Office, state and federal agencies, RPCs, local governments, interest groups and others. The Department of Resource Coordination has responsibility for much of this coordination, but it is limited in its ability to perform this role adequately due to its small staff. It is recommended that:

-- The Department of Resource Coordination be assigned primary responsibility for coordinating the activities of the District with the several state agencies, primarily DCA and DER, with the RPCs, and with the Governor's Office of Planning and and Budgeting. The latter assignment should be given high priority and an experience professional should be sought for for the position.

-- The Department of Resource Coordination should undertake a study of the following issues and make recommendations on them to the Executive Council and Governing Board:

  -- Options for coordinating the planning processes of the District with those of its partners in planning;

  -- Methods for facilitating reconciliation of differing views;

  -- Institutional arrangements preferred by various counties, RPCs and others for coordinating programs with the SFWMD;

  -- Options for improving the coordination of water quality and water quantity; and

  - -- Methods for coordinating the research needs of the WMD with the resources available in the state university system.

- -- Primary responsibility for coordination with local governments should be vested in the individuals involved in plan review, DRI review, etc. Coordination at this level must be almost personal to be effective and it should be carried out at the grass-roots level. A major problem is that the District is very limited in manpower available to fill these roles. If coordination at this level is considered important, additional resources will have to be provided.
- -- The organization for the operational water planning program should provide for the establishment of technical advisory committees and policy advisory committees to facilitate co-ordination.
- -- The RPCs should be invited to membership on the technical and/or policy advisory committees of the District when their regions are involved. Furthermore, the RPCs should be represented on the advisory committees established to help guide the state water planning process element for South Florida.

Local Government Comprehensive Planning

The District's Task Force on Local Government Assistance (1984) contained excellent recommendations on approaches the District could use to improve its coordination with local governments and provide better input to their planning processes. Those recommendations should be acted on by the Executive Council. Furthermore, it is recommended that the District continue to assign a high priority to coordination between

itself and local government planning agencies. The Martin County and City of West Palm Beach approaches are good models for such efforts. In dealing with local governments, the District should emphasize:

-- Broad regional views;

-- The implications of various courses of action (environmental consequences, for example);

-- Spill-over effects of local proposals;

-- Economic and social costs of proposed local government actions;

-- Appropriately interpreted data; and

-- Anticipating issues and analyzing them in advance of plan development rather than reacting to them after the fact.

The District should reinforce its capability for serving on technical advisory committees established by local governments to facilitate their planning processes.

Continuation of Ongoing Programs

The SFWMD already has underway a number of promising programs for enhancing its role in regional growth management. They include: the Martin County Planning Assistance Program; the C-51 area negotiations; the use of forums such as the American Assembly; and the many public and other educational programs the District is engaged in.

-- It is recommended that the District expand its County Planning Assistance Programs, on the basis of priority of need, but eventually to embrace all counties within its region. This should become a major element of the recommended assessment and appraisal program.

-- It is recommended that the negotiated approach being tried relative to C-51 be used as a model for approaching other problems in which the future control of land use is important. This fits the scheme of operational water management recommended.

-- It is recommended that the forums of the American Assembly type be continued as mechanisms for identifying issues and sources of conflict, and for suggesting alternative courses of action. It is further recommended that this approach be modified to conform more to the Nebraska Environmental Assessment technique. This would appear to have the promise of better closure.

Review Processes

The review of comprehensive plans, DRIs, ACSCs, and other documents, by the District is an important function and one that can be used by the District to make its influence felt in growth management issues. But this function is mostly reactive, and there is a question of ordering of priorities. At present, the responsibility for most of the reviews rests mainly on about three individuals. Clearly, there is just so much they can do. If this role is to receive the recommended greater emphasis, then some reinforcement of staff will be necessary.

Conflict Resolution

Approaches to successful conflict resolution are about as abundant as those for coordination. The wisest course would seem to be to take the best measures available to identify trouble spots before they become

"hot" so that the opportunity for dealing with them in a non-confrontational manner is optimized.

Permitting

The issuance of permits clearly affects how water is used and/or misused. Nevertheless, it is believed that the permitting process should not be used as the principal mechanism for influencing growth or water development and management patterns. The permitting process should be used to guarantee that prevailing policies are reflected. If the permitting process is closely coupled with a policy plan, the two can be mutually reinforcing and the outcome can be very positive. If the operational water management plans recommended are used for guiding the District's permitting program, the District will be able to ensure conformance with its policies, without additional statutory authority.

Research

The SFWMD has an impressive inhouse research capability. It might be questioned, however, if some of that talent shouldn't be diverted into other elements of its programs. One question that should be raised is how far into areas of basic research the District should move. Clearly the WMD must guard against becoming overly academic. It is suggested that the objective of SFWMD's research program should be to translate scientific knowledge into action programs, and that stronger ties with the state universities be established to supplement the District's basic research needs.

Organization

The Core Mission Statement of the SFWMD specifies that the District is to manage water and related resources ... for the purposes of

providing: environmental protection and enhancement; water supply; flood protection; and water quality protection. Interpreted broadly, the statement is consistent with the role of comprehensive water management recommended in this report. Unfortunately, there is no clear guidance on how the mission statement is to be translated into action. Furthermore, the current organizational structure and staff capabilities suggest that some shifts in emphasis and personnel might have to be made if the District's mission is to be accomplished in the most efficient manner.

Organizationally, the SFWMD is composed of the following Departments: Resource Operations; Administration; Technical Services; Resource Planning; Resource Control; and Resource Coordination. The mission statement for the Department of Resource Planning states that "it is that Department's mission ... to plan for the balanced, multi-purpose management of water and related resources in support of the District's core mission statement by: ... conducting research and evaluations, ... providing advice and guidance, ... and by developing plans and strategies to address water and related resource management problems." But there is a distinction between planning and the implementation of these plans as management tools. If the District is going to assume greater management responsibilities as a means of influencing growth management in South Florida, a more direct recognition of this role in the organization's composition should be considered. An organizational structure is therefore suggested that explicitly recognizes planning, management, and regulation -- the three

functions necessary to ensure both design and implementation of growth management policies. It is recommended that:

-- The Departments of Resource Planning and Control be reorganized into the three-department format indicated on the following figure. This reorganization plan emphasizes water management and provides for a logical division of responsibilities for carrying out the proposed assessment and operational modeling programs.

The suggested reorganization focuses on three proposed departments, Resource Planning and Policy, Resource Allocation and Control, and Resource Regulation and Enforcement. Staffing for these departments would come mainly from the present Departments of Resource Planning and Resource Control, but three additional professional planners would be added to the new Department of Resource Planning and Policy.

The Department of Resource Planning and Policy would be responsible for carrying out the proposed assessment program, for developing and reviewing standards and criteria, for conducting in-house research and monitoring contract research, and for special studies.

The Department of Resource Allocation and Control would be responsible for managing the proposed operational modeling program for developing groundwater management programs, for systems' monitoring and data management, and for external plan and program review.

The Department of Regulation and Enforcement would be responsible for the permitting functions of the District for drainage, flood control, groundwater and wells, and water quality. It would also issue

FIGURE 3 ALTERNATIVE ORGANIZATIONAL PLAN

DEPARTMENT OF RESOURCE PLANNING AND POLICY	DEPARTMENT OF RESOURCE ALLOCATION AND CONTROL	DEPARTMENT OF RESOURCE REGULATION AND ENFORCEMENT
Assessment-Policy Division	Operational Modeling Division	Drainage and Flood Control Division
Assessment-Resource Base and Trends Division	Groundwater Management Division	Groundwater and Wells Division
Standards and Criteria Division	Monitoring and Data Management Division	Water Quality Division
Research and Futures Studies Division	Plan and Program Review Division	Water Use Permitting
		Enforcement Division

consumptive use permits and would carry out the District's program for ensuring compliance with the District's regulatory programs.

Closing Note

Total water management involves consideration of all aspects of the resource -- quantity, quality, subterranean, surface, estuarine, coastal, development, conveyance, treatment, discharge, and allocation. Furthermore, to manage water is to manage land, and the reverse is true as well. Land-use decisions should be made with regard to how they will affect the quality, quantity and availability of water. And, decisions regarding water management should reflect a consideration of their effect on land use. Consequently, the need to coordinate and integrate the functioning of those involved in growth management processes is a requisite to any workable growth management strategy.

No one can predict with certainty how well the growth destined to occur in Florida will be managed in the coming years. But it may be argued that the Water Management Districts are the best hope for guiding the water and related land management decisions that will have to be made as that growth takes place. If the districts accept this challenge and use their broad authorities wisely, they can do much to ensure an adequate supply of good quality water for generations to come. But this will require that they become water managers in a much broader sense than in the past and, to take that step, they will have to move both boldly and cautiously to aid their constituent local governments and regional authorities. Acting in partnership with the stakeholders in their districts, they have the resources and understanding to tackle problems that no other organization can presently duplicate.

It may seem that this study focuses more on the District internally than it does on the District's relations with its partners in growth management. The truth of the matter is, however, that if the District is to lead, it will have to use its own resources more effectively to provide the guidance and, to a degree, the control necessary for achievement of good water management in South Florida. By following the recommendations given, it is believed that the basis for better communication and hence coordination and flow of information will be the result. To improve its ability to effectively cooperate with others, the District must place priority on those actions it directly controls.

Finally, it should be made clear that this analysis recognizes that the District is already involved in most of the processes addressed in the report. It is with a refocusing of efforts to move the District more positively into growth management that these recommendations are directed.

PART I - THE GROWTH MANAGEMENT ISSUE

INTRODUCTION

Since the early 1970's, the State of Florida has focused sharply on issues related to growth management. Because water is so critical to this process, the role of the Water Management Districts is receiving increased attention. Not surprisingly, the Districts are actively formulating growth management strategies. The SFWMD Core Statement that ... "inherent in ... (its)... mission is the responsibility to assist the public and government officials in growth management by identifying water resource impacts of land-use decisions and by advising on options for reducing adverse impacts and protecting water resources" ... exemplifies these.

There is a role for the Water Management Districts to play in growth management, but its exact nature is controversial and not clearly defined. In theory, it could range from the design and operation of flood control and drainage works to broad planning and management responsibilities extending beyond the realm of activities usually engaged in by water agencies. The optimal role probably lies somewhere between these limits, but it will not be the same for each District. Regional differences exist and should be considered.

In the broad sense, growth management is inextricably tied to management of the relevant ecosystem. Such systems have many components. Among them are: people, land, water, air, plants, and animals. Perturbing a part of an ecosystem has implications for its other components. Systems managers must thus be equipped to deal with a broad range of interrelated factors. Land-use decisions strongly affect

water management decisions and vice versa. The manipulation of ecosystems poses problems in understanding and coordinating interactions among human, environmental, and technologic components. Furthermore, organizing to deal with the diverse and interrelated elements of growth management requires a blending of technology and human understanding that is not easily set in motion. Such a state is not likely to be achieved by mandate.

The Water Management Districts must deal with a host of subjects as they establish growth management policies. These include: technical expertise; information transfer; conflict resolution mechanisms; interagency and intergovernmental coordination and cooperation; data retrieval and systems monitoring; plan development and implementation; systems operation and management; permitting processes; public relations; infrastructure maintenance and replacement; and interrelationships among ecosystem variables. The agenda is long and complex even when it is confined to water. What is needed is a determination of how information about water resources can most effectively be applied to the development of successful growth management strategies. The Districts are ideally suited to address this problem. Good decisions are based on good information. And related to water, the Water Management Districts are the elite. They, more than any other institution, should have the capability of providing information needed to support planning and management processes statewide. This should be a principal role of the Districts in fulfilling their growth management obligations.

The ways in which information can be transferred are numerous. They include: assembling and disseminating basic data; reviewing DRI's; screening applications for permits; reviewing comprehensive plans; participating in planning processes; analyzing problems and suggesting options for solving them; participating in advisory panels, study commissions, seminars, and educational processes; and doing research. Many of these mechanisms are reactive, however, and while they may be effective, they are not nearly as efficient as up-front approaches that deliver information in the formative stages of planning, management, and regulatory endeavors. While it can be argued that the Districts should not usurp local or regional planning roles, it can also be argued that mutual efforts that permit the districts to provide the best information available to those actively engaged in these processes should be sought and nurtured. Many avenues for this are open if all parties take a cooperative attitude.

Growth management in Florida is considered to be of the highest priority by the Governor, the legislature, and most citizens. For it to bear fruit, workable policies will have to be developed at all levels of government. Furthermore, these policies must be consistent and incorporated effectively in all levels of planning, development, regulatory, and management strategies. A key requirement for success is the provision of objective, reliable information upon which good decisions can be based. But the flow of information must be properly targeted and the information must be appropriately packaged, if it is to be used effectively. The Water Management Districts have recognized this,

but the job is incomplete. The need for developing new lines of communication, exploring imaginative, unconventional options for solving problems, and for devising better ways to inform decision makers is compelling. It is with this in mind that this analysis was undertaken.

Part I of the report defines the growth management issue, discusses recent Florida studies on growth management, summarizes the relevant legislation, points out the importance of land and water resources planning to setting and implementing growth management strategies, and acknowledges the role of the Water Management Districts in growth management processes. Part II of the report reviews the history of the SFWMD, its interfaces with other agencies, its present role in growth management, and means by which it can be more influential in setting and implementing growth management policies. Part III considers three options for growth management roles for the SFWMD, and provides recommendations for meeting the suggested role.

GROWTH MANAGEMENT - FLORIDA'S PREMIER PROBLEM

Since 1970, the population of Florida has been growing at an astonishing rate, having increased by more than 40 percent. By early in the 21st Century, Florida is expected to become the fourth most populous state in the United States, having over 14 million people. Added to this increase in residents will be a tourist population expected to reach about 55 million by early in the 1990's. Over 80 percent of the population growth is expected to take place in coastal areas, regions already heavily stressed. Among the pressures imposed by the population expansion, are the impacts of rapid growth on the state's water and other resources. Between 1955 and 1975, for example, water use in Florida tripled. And all indications are that such trends will

continue. The question is, what can be done to manage the growth that is certain to occur?

Growth Management Defined

Growth management can be defined as:

-- developing and implementing strategies to ensure that growth, which is inevitable, occurs in a consciously-planned manner that is socially acceptable, economically efficient, and environmentally sound.

According to the Florida Speaker's Task Force on Water Issues, ... "it is not a codeword for "no growth," or even "slow growth." Growth management does mean sound, healthy growth that carries its own weight, and adds to, rather than detracts from, its community." Good management is also synonymous with good planning.

Growth Policy of Florida

In 1974, the Florida Legislature established the growth policy for the State in a Joint Resolution (CS/HJR 2800) which states:

> "It is the policy of the State of Florida that the foremost functions of its government shall be to help its citizens maintain and enrich the quality of life in Florida."

Seventeen topics are addressed, two of which specifically deal with comprehensive planning and growth management. They are ... that planning and management of state policy on growth shall be administered to the maximum extent possible at the local level of government ... and that local government shall be encouraged to join appropriate public bodies to coordinate with state government in achieving comprehensive planning statewide. Clearly, the legislature identified comprehensive planning and local government actions as cornerstones of its growth management policies. These elements are jointly vehicles for the involvement of Water Management Districts in growth management processes, and challenges as they attempt to devise acceptable and effective ways to become active rather than reactive partners in these processes.

Blue Ribbon Studies

Since 1980, several blue ribbon studies have been commissioned by the Governor and the Legislature to provide guidance for policy-setting on growth management issues. Many of the resulting recommendations are relevant to the roles of the Water Management Districts in dealing with these problems. Accordingly, a summary of them is given here.

Governor's Resource Management Task Force Report, 1980

The Governor's Resource Management Task Force was charged with making recommendations for improvement in the management of Florida's resources to meet the needs of the 1980s and beyond. In the letter transmitting the final report to the Governor, the following statement appeared:

> "We have concluded that most of the basic tools, legislative and administrative, are in place. But at the same time, it is crystal clear that the Florida of the next decade will not be the Florida of our hopes and dreams unless a more positive and forceful leadership is provided in the field of growth management and in establishing the delicate balance between environmental and economic considerations."

During its tenure, the Task Force examined the state's resource management laws and policies, identified problems in the structure and administration of those laws, and considered alternative solutions to those problems. Two prominent themes dominated the Task Force's recommendations. They were:

-- chronic underfunding of resource laws; and

-- the need for an integrated policy framework to organize programs to manage Florida's resources (state policies must guide regional policies, which must in turn guide local government's comprehensive plans).

The strengthening and restructuring of regional agencies was a major recommendation of the Task Force. Recommendations urged that agencies be given policy guidance, their activities be integrated, and that they have greater ability to effectively implement management strategies. It was pointed out that the Developments of Regional Impact process must be improved. The Task Force believed that it should be directed more firmly to regional issues, made more timely, and be made to encourage the broadened use of expertise.

The formal adoption of a state water policy and greater water management responsibilities for regional and local entities under state supervision was also strongly recommended. The delegation of some federal regulatory programs to the state, including the National Pollutant Discharge Elimination System, was recommended. It was also specified that permitting systems in general should be coordinated and that regional permit information agencies should be established.

New initiatives for the management of Florida's coast were recommended. And, finally, the Task Force recommended the development of state, regional and local agricultural protection policies, and a comprehensive study of ways to protect valuable agricultural lands from urban encroachment.

ELMS II Report, 1984

The ELMS Committee recommended that there be a state comprehensive policy plan, composed of specific, relatively brief statements of goals and objectives for the entire state. It was considered that the state plan would provide overall policy direction, and that state and regional agencies and local governments would devise strategies to attain the goals. The Committee recommended that the Governor have overall responsibility to prepare the state plan and to oversee its implementation.

It was also recommended that each state agency devise and adopt a functional plan and that this plan be consistent with the overall state policy plan. These plans would be reviewed by the Governor's office and he would mediate disputes.

The ELMS II Committee recognized regional differences and stated that regional policy plans should be fundamental elements in establishing a sound statewide planning framework. It was recommended that regional planning agencies seek full cooperation from local governments in the regional planning process. It was noted that perhaps the most significant reason why regional plans had not been prepared was that regional planning efforts had not been funded by the Legislature. The Committee also recognized that some type of mediation process should be set up by the regional planning agencies to resolve conflicts among governmental bodies.

Noting that local government comprehensive plans are a key element in any statewide growth management strategy, the Committee stated that the statewide planning framework must ultimately be linked to local

government comprehensive plans. In order to ensure more consistency in such plans, it was recognized that a strong state policy plan and commensurate regional plans would be required. Accordingly, the Committee recommended that after state and regional policy plans had been adopted as required by law, local governments should amend their comprehensive plans to ensure that the local governments' growth management strategies were consistent with state and regional goals and objectives.

Finally, a trust fund for growth management was recommended to fund state and regional planning agencies and local governments in preparing and implementing studies, plans, or reports required by law. The ELMS Committee's recommendations form a four-step program for statewide planning and plan coordination:

-- the development and implementation of a state comprehensive plan, functional agency plans, and a mediation process for resolving disputes between agencies;
-- the development of cooperative regional/local planning processes, as well as standards for preparing comprehensive regional policy plans;
-- the adjustment of local comprehensive plans and development regulations to conform to state and regional plans; and
-- the establishment of a state Growth Management Trust Fund to aid in developing and implementing

plans and planning studies and reports at all levels of government.

A summary of specific recommenations of the ELMS II Committee follows:

1. There should be a state comprehensive plan composed of goals and objectives.

2. The ELMS Committee recommends that the Legislature impose on itself responsibility for considering the impact of its policy and budgetary actions on the adopted state plan.

3. Initially, the state planning process shall focus on existng state planning and programming areas.

4. The state comprehensive plan shall not include a land-use map.

5. Overall responsibility to prepare a state comprehensive plan and oversee state and regional planning shall be assigned to the Governor. State and regional agencies shall identify any information used in their plans which is different or inconsistent with data or assumptions prepared by the Governor, or plans adopted by other state agencies.

6. The proposed state comprehensive plan shall be prepared by the Governor. The heads of the executive departments, the Public Service Commission, the Game and Fresh Water Fish Commission, water management districts, and regional planning agencies shall provide assistance to the Governor in the discharge of his planning duties.

7. The proposed state comprehensive plan shall be reviewed by the Administration Commission.

8. The Legislature shall have the primary responsibility to give statewide effect to the state comprehensive plan by enacting it into law, with any necessary modifications.

9. State agencies shall prepare functional plans that set out the agencies' strategies for implementing the goals and objectives of the state comprehensive plan.

10. The Governor shall mediate all disputes between agencies regarding whether agencies, programs, policies, or functional plans are consistent with the state comprehensive plan. If mediation is unsuccessful, the dispute shall ultimately be resolved by the Land and Water Adjudicatory Commission.

11. All state and regional agencies shall consider the impact of policy and budgetary proposals on state and regional plans.

12. The regional planning agencies shall seek the full cooperation and assistance of local governments to identify key regional issues and prepare a comprehensive regional policy plan consistent with the state comprehensive plan. Comprehensive regional policy plans shall implement and accurately reflect the goals and objectives of the state comprehensive plan. Regional plans shall include regional goals, policies, and objectives consistent with the state plan, addressing significant regional resources, infrastructure needs, or other issues of importance within the region.

13. The draft regional plan shall be circulated to all local governments in the region. Local governments shall be afforded a reasonable opportunity to comment on the regional plan.

14. The state land planning agency shall develop standards and criteria for review and approval of comprehensive regional policy plans.

15. The regional planning agencies shall establish an informal mediation process to resolve conflicts between local governments relating to comprehensive plans.

16. If a conflict between the adopted state or regional comprehensive plan and a local government comprehensive plan, or between local government plans, cannot be resolved by informal mediation, the conflict shall ultimately be resolved by the Governor and Cabinet sitting as the Land and Water Adjudicatory Commission.

17. When state and regional comprehensive plans have been adopted as required by law, local government comprehensive plans shall be amended to conform to the state and regional plans within two (2) years. Local government comprehensive plans shall include a land-use map. The regional planning agencies shall review and approve amended local government comprehensive plans pursuant to procedures developed by the state land planning agency and adopted by the Administration Commission.

18. When state and regional comprehensive policy plans are adopted and approved as required by law:

A. The state should provide funds to support review and amendments of local government comprehensive plans to conform to state and regional policy plans.

B. State or regional agencies shall be prohibited from expending funds within a jurisdiction that has an approved local government comprehensive plan in a manner that would conflict with the local government comprehensive plan, or require an expenditure not provided for in the local government's capital

> improvements budget, if the local government files a written objection to the proposed expenditure with the state or regional agency ...

19. The ELMS Committee recommends that a Growth Management Trust Fund be established. The trust fund should be funded at the rate of approximately $20 million per year from a dependable revenue source related to growth and the need for growth management.

20. The Growth Management Trust Fund shall be used to provide grants to state and regional agencies and local governments to prepare and implement the state comprehensive plan, comprehensive regional policy plans, local government comprehensive plans, state agency functional or program plans, a state land development plan, and any studies or reports needed to implement the state's planning and growth management statutes.

21. The state land planning agency shall administer the fund and shall develop specific guidelines and criteria for allocating funds among state, regional, and local planning activities.

Speakers' Task Force Report on Water Issues, 1984

The Speakers' Task Force acknowledged that governmental efforts to deal with the state's accelerating growth were ineffective and uncoordinated. Furthermore, it was noted that for a growth management strategy to be successful, there would have to be sufficient authority provided for all levels of government to act responsibly and in concert. The Task Force believed that policy should flow from the state to the local level, but that local governments should carry out the growth management policies through implementation of their comprehensive plans. Several deficiencies in structures already in place to manage growth were identified. They included:

-- Florida does not have a growth management policy;

-- while Regional Planning Councils could be useful in ensuring that local planning activities are coordinated

within a region, they are currently unable to perform this or any other necessary planning function successfully; and

-- the absence of a state growth management policy has reduced local government comprehensive plans to a local government's "perception" of the manner in which it is to respond to growth management.

To address these and other deficiencies, the Task Force made a number of recommendations. They are summarized below:

1. The implementing legislation should contain growth management policy directives and sufficient statutory authority to enable the Governor to promulgate, no later than nine months after the effective date, the Florida Growth Management Policy Plan (FGMPP), establishing state policy goals and objectives for each of the required and optional elements of the Local Government Comprehensive Plans (LGCPs).

2. The Governor should be primarily responsible for ensuring that local and regional agencies are functioning within the policies and objectives in the FGMPP.

3. The Florida Growth Management Policy Plan (FGMPP) should be reviewed by the Joint Administrative Procedures Committee (JAPC) for possible inconsistencies between the policy plan and state law. However, once promulgated, the FGMPP should be binding at the regional and local level.

4. The Governor should appoint a 15 member Regional Plan Development Committee (RPDC) within each region, a majority of whom should be existing members of the relevant Regional Planning Council. The RPDC should be responsible for developing a Regional Policy Plan for submission to the Regional Planning Council. This plan should be consistent with the Florida Growth Management Policy Plan (FGMPP). The composition of the Regional Planning Council should remain unchanged until after the RPDC completes the Regional Policy Plan and submits it for approval. The Regional Policy Plan should be reviewed and approved by the Regional Planning Council for consistency with the Florida Growth Management Policy Plan. However, the water, sewage, and solid waste elements in the Plan should also be approved by the Water Management District.

5. After the approval of the initial Regional Policy Plans, but not later than two years after the effective date of the implementing legislation, the Governor should reconstitute the Regional Planning Councils as Regional Planning Commissions. The Commissions should

consist of 15 members appointed by the Governor; two-thirds of whom would be local elected officials who would serve ex officio and one-third of whom would be lay citizens.

6. Since inadequate funding would defeat the effect of these recommendations, the Legislature should provide, through the appropriations process, adequate state revenue to fund the Regional Planning Commissions to enable them to carry out their required responsibilities.

7. The Regional Planning Commissions should be responsible for reviewing and approving all Local Government Comprehensive Plans (LGCPs). Final approval should be based upon a determination of the local plan's consistency with the FGMPP and the Regional Policy Plan, as well as the extent to which they are internally coordinated.

8. RPCs shall monitor local government growth management actions, including local development orders, for consistency with the LGCP.

9. The implementing Legislation should contain express provisions by which the Regional Policy Plans are adopted and the LGCPs are to be approved by the Regional Planning Commission.

10. The Local Government Comprehensive Planning Act, Chapter 163 F.S., should be amended to require that each county submit a single Local Government Comprehensive Plan (LGCP), which is consistent with state policy goals and objectives as stated in the Florida Growth Management Policy Plan (FGMPP) promulgated by the Governor, and the Regional Plan. In addition, each LGCP should contain a five-year capital outlay plan and the Board of County Commissioners or a council of local governments should be required to certify that the LGCP internally coordinates the planning activities of the county and all municipalities in the country, and that the plan is consistent with the FGMPP and with the Regional Policy Plan prior to submission to the Regional Planning Commission for review and approval.

In recognizing the D.R.I. Process as the state's main tool for monitoring and managing the quality of growth in Florida, the Task Force observed that only about 5% of all growth in the state was subject to a D.R.I. review. It commented that the cumulative weight of the great mass of smaller developments not subject to this process was what brought about the "death by a thousand cuts" results of poorly planned growth. Accordingly, the Task Force supported the development of strong local comprehensive plans which could curb unwise growth, while

encouraging economic development and desirable growth. It was noted that once local plans are approved and in place, changes and variances in approved land-use patterns should be made more difficult to effect. And with these safeguards it should no longer be necessary to subject many substantial developments, including residential developments, to D.R.I. review.

Select Committee on Growth Management Report, 1983

In August of 1983, the Select Committee on Growth Management issued a report on Florida's Water Management Districts. The report discussed intergovernmental relations and growth management issues. Several of the findings are pertinent to the subject of this study and they are summarized here:

-- Local government land-use decisions may not recognize water management concerns and could result in adverse impacts on water resources;

-- Local government planning decisions may conflict with the prescribed resource management practices of the Water Management Districts. These conflicts are most often associated with development within floodplains and with drainage limitations for urbanizing areas;

-- A unified regional outlook on land planning and water supply issues is lacking;

-- Closer coordination between the Water Management Districts and local governments is needed to help resolve planning conflicts; and

-- Adequate authority should be provided to enforce local government comprehensive plans and address the inconsistencies in local planning ordinances.

It was broadly recognized that there was a lack of integration between land and water planning, that there was a need for consistency between the state's plan and its water policy, and that current constraints placed the Water Management Districts in reactionary rather than proactive positions.

Summary of Findings

All of the studies reviewed identified the need for an integrated policy framework which would provide for coordinated resource management actions at state, regional and local levels. They also supported the need for adequate funding to ensure well conceived comprehensive plans. It was generally recognized that the elements of an effective program were already in place, but that a variety of constraints limited prospects for implementing good growth management policies. Comprehensive planning at all levels was stressed. Clearly, the recommendations of all of these panels suggest that the Water Management Districts can and should play an active role in the state's growth management efforts. This will be amplified later.

Relevant Legislation

In the early 1970's, Florida assumed a leadership role in enacting legislation intended to manage growth and guide the state's resource

development programs. Many of these laws have become models for other states as they take on similar issues.

Of particular interest here are those Acts which deal with comprehensive planning, designation of critical areas, developments of regional impact, and intergovernmental relationships. The State Comprehensive Planning Act of 1972, and the Local Government Comprehensive Planning Act of 1975, established a state and local planning mandate. Other legislation included the Environmental Land and Water Management Act of 1972, creating the Areas of Critical State Concern Program and the Developments of Regional Impact Process, which protect special areas and guide certain types of development. The Water Resources Act of 1972 established a system for the management of the state's waters. Coastal legislation emerging in 1970 dealt with husbanding Florida's coastal resources. These acts and their subsequent amendments, along with: Chapter 160, which established Regional Planning Councils in 1980; the Florida State and Regional Planning Act of 1984; and the Warren S. Henderson Wetlands Protection Act of 1984; provide the framework for most of the state's growth management actions. Consequently, an understanding of the provisions of these Acts is an important part of any assessment of growth management roles for the Water Management Districts, or any other agencies.

The Environmental Land and Water Management Act of 1972

The Environmental Land and Water Management Act of 1972, Chapter 380, F.S., provides for the creation of Areas of Critical State Concern and for the implementation of a Developments of Regional Impact process. These provisions have significant implications for growth managers and

are mechanisms by which the Water Management Districts can be influential in this arena.

Areas of Critical State Concern. Chapter 380 sets forth criteria and procedures for designating Areas of Critical State Concern (ACSC). The state land planning agency (Department of Community Affairs, DCA) is responsible for administering this program.

An ACSC designation may be made for (1) an area containing or having a significant impact upon environmental or natural resources of regional or state-wide importance; (2) an area containing or having a significant impact upon historical or archaeological resources of regional or statewide importance; or (3) an area having a significant impact upon, or being significantly impacted by, an existing or proposed major public facility.

When an area is nominated as a potential ACSC, the Department of Community Affairs evaluates the nomination to determine if it meets the above criteria, and makes a recommendation to the Governor. Before a formal Area of Critical State Concern designation can be made, Chapter 380 requires that the Governor appoint a Resource Planning and Management Committee for the area. These committees, which bring together local government officials, state and regional agencies and special interest groups, emphasize voluntary intergovernmental cooperation to analyze problems in the study area and prepare resource management plans addressing growth management issues.

ACSC designations and the ensuing development regulations are based upon study and analysis of the characteristics, problems, and needs of the individual areas. Just as different geographic areas have differing

physical characteristics and development pressures, the principles and regulations for guiding development in those areas will also differ. Consequently, the types of development activities to be regulated and the nature of the regulations vary from one ACSC to another and, as in the Florida Keys, may even vary within an ACSC.

During the 1983 legislative session, several provisions of Chapters 380 and 163, F.S., were amended. One change provides the DCA with review and approval authority of all local government comprehensive plans within designated ACSCs. The second modification empowers the DCA to initiate administrative proceedings to prevent, abate or control conditions or activities creating a violation.

Chapter 380, F.S., was amended again during the 1984 legislative session. The amendment requires a Resource Planning and Management Committee to either adopt a management plan, or recommend that a plan not be adopted, within 12 months of its appointment by the Governor. The plan should contain detailed recommendations for state, regional, and local actions necessary to resolve and prevent the resource problems identified by the committee.

In approving the Resource Management Plan, the Administration Commission is required to request each affected state and regional agency to conduct its programs and activities in a manner consistent with the approved program to the extent possible. Twelve months after the Commission adopts the plan, the state land planning agency is required to report to the Commission on how effectively the approved plan is being implemented. The amendments call for the rule designating an Area of Critical State Concern to require state and

regional agencies to coordinate their plans and conduct their programs and activities in a manner consistent with the adopted principles for guiding development.

To date, three critical areas have been designated: The Big Cypress Swamp, the Green Swamp, and the Florida Keys. Since 1979, eight Resource Planning and Management Committees have been appointed.

The Developments of Regional Impact Process. Chapter 380, F.S. also established a Developments of Regional Impact (DRI) Program. The program creates a process for comprehensively assessing and making decisions on developments which substantially affect the citizens of more than one county. Developments subject to the program must obtain a development order from the appropriate local government before beginning any site improvements. The regional planning agency provides regional input into these local decisions. The DCA, Division of Resource Planning and Management, Bureau of Land and Water Management, administers the program at the state level and oversees the results.

A DRI is "any development which, because of its character, magnitude, or location, would have a substantial effect upon the health, safety, or welfare of citizens of more than one county."

The term "development" is defined in the law to include "the carrying out of any building activity or mining operation, the making of any material change in the use or appearance of any structure or land, or the dividing of land into three or more parcels." Accordingly, DRI's are not limited to developments contemplating vertical construction by one developer. DRI's may include subdivision

developments in which a developer divides a parcel of land into lots for sale; constructs infrastructure such as roads and water and sewer lines; then markets the lots to individual buyers who subsequently may construct buildings for any use permitted by the zoning code, deed restrictions, or subdivision ordinances.

Thus, virtually any real estate development endeavor may be a DRI if it is of sufficient magnitude and would affect regionally significant resources or facilities. Rule 27F-2, F.A.C., sets forth guidelines and standards to be used in determining whether a particular development is a DRI.

Subsection 380.06(5), Florida Statutes, permits development of a DRI in a regulated jurisdiction only after DRI review and approval. This means that no development activity, including clearing, filling, reconstruction of a structure, alteration of a shore, bank, drilling, or demolition of a structure, should take place on a DRI prior to the effective date of the development order issued by the local government. If any of these activities are begun prior to that time, the development will be in violation of Section 380.06, Florida Statutes, and subject to appropriate administrative and judicial enforcement action.

If a development is a DRI, it must go through the required review and approval process. The developer or his authorized representative initiates the DRI process by completing a state-prescribed application document. This application is filed with the local government of jurisdiction, the appropriate regional planning agency and the Division of Resource Planning and Management, Bureau of Land and Water Management.

The regional planning agency reviews the application within prescribed statutory time periods. It makes recommendations to the local government based on the development's potential impact in six areas: the environment and natural resources of the region; the economy of the region; public facilities including water, sewer, and solid waste disposal; public transportation facilities; available housing; and regional energy demand.

The local government schedules and conducts a public hearing on the proposed DRI. Within thirty days following the required public hearing, the local government issues a development order approving, conditionally approving or denying the DRI application. After the development order is rendered, the developer, the regional planning agency and the state land planning agency (DCA) have 45 days to appeal the development order to the Governor and the Cabinet sitting as the Land and Water Adjudicatory Commission.

The DCA was granted authority, by 1984 legislative amendments to Chapter 380, F.S., to review areawide development plans as DRI's in coordination with local governments and regional planning agencies. This amendment was modeled after the existing Downtown DRI provision of the law which has proven to be highly successful in several Florida cities. Areawide DRI's allow any person or association of persons, including a governmental agency, to petition for authorization to file an application for development approval. The local government is the body which is vested with the responsibility to approve, approve with conditions or deny the petition.

The Water Resources Act of 1972

The Water Resources Act of 1972, Chapter 373, F.S., provided for: a State Water Use Plan; a Florida Water Plan; the creation of Water Management Districts; and the establishment of Basin Boards and Governing Boards for the Water Management Districts (WMDs). Among other powers and duties allowed them by law, Chapter 373 specified the following powers which may be vested in the Governing Boards at the discretion of the Department of Environmental Regulation (DER). They are that the Boards may be authorized to:

(1) Administer and enforce all provisions of this chapter, including the permit systems established in parts II, III, and IV of this chapter.

(2) Cooperate with the United States in the manner provided by Congress for flood control, reclamation, conservation, and applied purposes in protecting the inhabitants, the land, and other property within the district from the effects of a surplus or a deficiency of water when the same may be beneficial to the public health, welfare, safety, and utility.

(3) Plan, construct, operate, and maintain works of the district as defined in this chapter.

(4) Determine, establish, and control the level of waters to be maintained in all canals, lakes, rivers, channels, reservoirs, streams, or other bodies of water controlled by the district; to maintain such waters at the levels so determined and established by means of dams, locks, floodgates, dikes, and other structures; and to regulate the discharge into, or withdrawal from, the canals, lakes, rivers, channels, reservoirs, streams, or other bodies of water controlled by the district or which are a work of the district, including review of small watershed projects.

(5) Expend, at the discretion of the governing board, for purposes of promotion, advertisement,

and improvement of the program and objectives of the district, a yearly sum not to exceed 0.25 percent of the moneys collected by taxation within the district.

(6) Exercise such additional power and authority compatible with this chapter and other statutes and federal laws affecting the district as may be necessary to perform such duties and acts and to decide such matters and dispose of the same as are not specifically in or covered by statute.

(7) Prepare, in cooperation with the department, that part of the state water use plan applicable to the district.

The State Comprehensive Planning Act of 1972

The State Comprehensive Planning Act of 1972, Chapter 23, F.S., charged the Executive Office of the Governor with preparing a comprehensive plan for land use and resource management in the State of Florida. It envisioned an integrated, cooperative approach in the formulation of basic policies and objectives. In particular, the State Comprehensive Planning Act required the use of the "best available data" and "... to the extent feasible ... to utilize the services and plans of local governments and regional planning agencies ... and consider studies, reports and plans of every department, agency and institution ..." of Florida government.

Unfortunately, for a variety of reasons, the State Comprehensive Plan was never really implemented as had been anticipated by the drafters of the 1972 Act.

The Local Government Comprehensive Planning Act of 1975

In 1975, the Florida Legislature passed the Local Government Comprehensive Planning Act (LGCPA), Chapter 163, F.S..

The LGPCA states that all counties and cities and certain special districts have "the power and responsibility":

> To plan for their future development and growth.
>
> To adopt and amend comprehensive plans, or elements or portions thereof, to guide their future development and growth.
>
> To implement adopted or amended comprehensive plans by the adoption of appropriate land development regulations or elements thereof.
>
> To establish, support, and maintain administrative instruments and procedures to carry out the provisions and purposes of this act.

The LGCPA has two major provisions. First, each unit of local government is required to prepare and adopt a comprehensive plan. The plans are required to contain the following elements: land use; traffic circulation; general sanitary sewer, solid waste, drainage, and potable water; conservation; recreation and open space; housing; coastal zone protection (in local governments where a coastal zone element is appropriate); intergovernmental coordination; utility, and in larger local governments, mass transit and port and aviation facility elements. Optional plan elements are also suggested by the Act. In addition, the plans are required to be internally consistent, economically feasible, to contain the economic assumptions on which the plans are based, to demonstrate that the plan drafters considered coordination with other government plans, and to contain plan implementation recommendations.

The second major provision of the Act requires that all development undertaken by governmental agencies, all development permitted by a

local government, and all land development regulations enacted by a local government be consistent with the local government comprehensive plan of an area.

The LGCPA was landmark legislation at the time it was passed. It stood for the relatively new principle that local governments' land use and development decisions and regulations must be consistent with long-range comprehensive plans, making the plans legally preeminent.

Perhaps the signal feature of this Act is that for all units of local government in Florida, the comprehensive plan has legal status. In particular: building permits cannot be issued where development does not conform to the comprehensive plan; land-use regulations such as zoning must be consistent with the plan; and no land-use control regulation, or amendment thereto, can be adopted by a local government until it has been reviewed by the local planning agency, and recommendations made by that body, regarding the relationship of the proposal to the comprehensive plan.

Chapter 160, Regional Planning Councils, 1980

Regional Planning Councils (RPCs) were created in 1980, with the enactment of Chapter 160, F.S. The RPCs are intended to provide a regional (multi-county) perspective and review opportunity for local government planning. They are responsible for developing regional policy plans and assisting local governments in resolving problems.

Prior to 1980, regional planning councils were formed on a voluntary basis under the statutory provisions of either Chapter 163, Florida Statutes, or Chapter 160, Florida Statutes. Florida law did not mandate the creation of regional planning councils until 1980; in that

year the Legislature approved significant changes to Chapter 160, Florida Statutes, which:

> Required the creation of a regional planning council in each one of the comprehensive planning districts in the state.
>
> Added the provision that one-third of the voting members of each council be appointed by the Governor.
>
> Required the preparation of comprehensive regional policy plans.

Presently, there are 11 regional planning councils in Florida. Representation varies in each council region. West Florida, with 76 members has the largest membership, and Central Florida has the smallest, only 17 members. Further details on RPCs are given in Appendix II.

Florida State and Regional Planning Act of 1984

The Florida State and Regional Planning Act of 1984 mandates the state and the 11 Regional Planning Councils (RPCs) to prepare comprehensive plans. It also provides for state agency functional plans, and establishes a nonlapsing growth-management trust fund within the state land planning agency (DCA). The State Comprehensive Plan is the responsibility of the Governor's Office. It is to consist of specific, relatively brief statements of goals and objectives for the entire state. The state and regional agencies are to devise their own plans consistent with the state plan.

The Act is intended to provide guidance to state and regional agencies, through the State Comprehensive Plan, on matters of land use,

water resources management, and transportation planning. Principal features of the Act are:

-- The executive Office of the Governor (office of planning and budgeting) is to prepare a State Comprehensive Plan on or before December 1, 1984.

-- The State Plan is to be composed of goals and policies that provide specific policy direction to state and regional agencies regarding growth management, natural resources planning, transportation system development, etc.

-- On or before February 15, 1985, the Administration Commission consisting of the Governor and the Cabinet is required to review the State Plan and, upon adoption, submit it to the Legislature. Public input and interagency review will take place at this level.

-- If the Legislature fails to adopt or to reject the State Comprehensive Plan, then the proposed plan will automatically be returned to the Administration Commission which may adopt, by rule, all or part of the plan.

-- Once adopted, the State Plan must be implemented and enforced by all state agencies. State-agency budgets and programs must conform with, and be supportive of, the State Comprehensive Plan.

-- Within one year of adoption of the State Plan, each state agency is required to prepare and adopt by rule a state agency functional plan.

-- The Department of Environmental Regulation is required to prepare a State Water Use Plan, as required by Chapter 373, F.S. within six months of the adoption of the State Comprehensive Plan. The Department of Community Affairs must also prepare a counterpart State Land Development Plan.

-- Within 18 months of the adoption of the State Comprehensive Plan, each RPC is required to submit to the Governor's Office its proposed comprehensive regional policy plan for a consistency review with the State Plan.

-- Once adopted, a regional policy plan would be used for DRI reviews, A-95 reviews and other regional clearing-house functions.

-- The RPCs are required to provide technical assistance to local governments on growth-management issues. But there is no requirement that local government comprehensive plans be consistent with the state and regional policy plans.

-- In order to provide grants to state, regional, and local agencies involved in carrying out the provisions of Chapters 23, 160, 163, 373 and 380, F.S., the Act has established a nonlapsing fund titled, "The Growth Management Trust Fund" under the management of the state land planning agency (DCA). Grant monies may

be used for the preparation of studies, plans or reports required pursuant to the provisions of the Chapters mentioned above.

The Warren S. Henderson Wetlands Protection Act of 1984

This complex bill streamlines the dredge and fill permitting by the Department of Environmental Regulation (DER), and also allows the DER to consider wildlife and habitat when deciding whether to issue a permit. The Act's major provisions include:

-- Authorizing DER to consider wildlife and habitat, cumulative effects of similar projects, recreational and natural function values of wetlands, etc., when issuing dredge and fill permits;
-- Approval of an enlarged vegetative index, which is the list of wetland plant species used to establish DER's permitting jurisdiction;
-- Declaring the Everglades a state water, thereby extending DER's permitting jurisdiction throughout that area;
-- Empowering DER to adopt stricter rules for outstanding Florida Waters, etc.;
-- Avoiding duplicative permitting for agricultural water management systems by shifting primary responsibility for regulating agricultural activities from DER to the water management districts;

-- Requiring property appraisers to consider lessened property value resulting from DER permit denial;
-- Streamlining the dredge and fill process by combining portions of Chapters 253 and 403, Florida Statutes;
-- Instituting civil penalties for intentional damage to state lands; and
-- Directing DER to adopt rules for the use of wetlands to naturally treat stormwater and domestic wastewater.

Additionally, regulation of several interests has been delegated to other agencies or deferred. Limerock and sand mining are exempt from geographic increases in DER jurisdiction for 10 years, and from the new permit criteria for one year. Similar delays of the bill's provisions are extended to registered subdivision lots, approved developments of regional impact, etc. Waters in stormwater management systems and intermittent streams are declared outside DER's jurisdiction. Certain upland irrigation and drainage ditches including those that connect isolated wetlands, are exempt from dredge and fill permitting. The DER is authorized to issue long-term permits up to 25 years' duration. Water-management systems on bona-fide agricultural lands will be regulated by the state's water management districts under provisions of the bill.

Summary of Findings

All of the Acts reviewed herein are heavily oriented towards the establishment and implementation of sound, workable growth-management policies for Florida. The 1984 Florida State and Regional Planning Act reflects recommendations of several of the panels reviewed earlier in

this report. Basically, the 1984 Act is intended to strengthen state and regional planning processes and to ensure that they are consistent. It falls short, however, of requiring consistency of local government comprehensive plans with state and regional plans. The Wetlands Protection Act broadens the scope of responsibilities of the Water Management Districts to include regulation of water management systems on agricultural lands. The Environmental Land and Water Management Act of 1972, The Local Government Comprehensive Planning Act of 1975, and Chapter 160, all address planning processes, planning coordination, and mechanisms whereby plans can be reviewed for consistency among the three principal levels of governmental planning in Florida. Establishment of the DRI Program and the Areas of Critical State Concern Program required, in theory at least, a tighter control over developmental activity and was an attempt to ensure that such activity would consider regional as well as local impacts, and serve the future as well as the present. While the blue ribbon panels and others observed flaws in these Acts, they also recognized that these instruments did embrace most of the elements needed to form the foundation for strong growth-management policies. The Water Resources Act of 1972 and the other Acts all define, implicitly if not explicitly, a role for the Water Management districts to play in setting and implementing growth-management strategies. Specific provisions will be referred to later in the report where the role of the Districts is formally addressed.

A Three Tiered Approach - State, Regional, and Local Government

It seems clear from the Legislative Agenda since 1972, and from the results of various special studies (ELMS Committee reports, for example) that the Florida Legislature recognizes and supports the notion that there is a role in growth management to be played at the state level, at a regional level, and at the local government level. And while these roles are in a state of transition, and have been criticized by many, there is also recognition that overcentralization could destroy the basis for intelligent decision making and management that this multi-level approach provides. The Florida State and Regional Planning Act of 1984 is a clear statement of the Florida Legislature's recognition of a hierarchy of multi-level planning and decision-making bodies and the need for coordinating their activities.

Relationship to Water Resources Planning

The relationship of water resources planning to growth management is easy to see. It is evident if one considers that the goal of state-water planning should be to facilitate informed decisions on the management of the state's water and related land resources.

Considering the importance of preserving and fostering an effective state-regional-local government partnership, it is useful to review how the federal government has looked at multiple jurisdictions in its water resources planning programs. The analogy is national-regional-state and local government, at the federal level, and state-regional-local government, at the state level. The scales are somewhat different, but the problems are surprisingly similar, and the lessons learned by the federal government in its long history of involvement in

water resources planning are worth considering as state laws, procedures, and agencies are organized, or designed, to deal with similar issues.

Since the turn of the century, federal agencies and the Congress of the United States have recognized that planning for the effective management of the nation's water and related land resources would require national, regional, and state and local government perspectives. Many studies were undertaken to determine the best ways to achieve quality planning, planning coordination, and plan implementation. None of them resulted in exposition of a perfect mechanism, but all of them identified most of the principal issues that must be dealt with in striving for a better system. A brief accounting of some of these findings is useful here because they are relevant to Florida's situation as well as to that of the federal government.

In 1969, a Senate Select Committee on National Water Resources was established by the U.S. Senate. This prestigious committee completed its work in 1961, but its findings are still contemporary. Five general recommendations were made:

> The select committee's first recommendation called for the Federal Government, in cooperation with the states, to prepare and keep up-to-date plans for comprehensive water development and management of all major river basins of the United States, taking into account prospective demands for all purposes, giving full recognition to nonrevenue yielding purposes such as streamflow regulation, outdoor recreation, and preservation, and propagation of fish and wildlife, and keeping in mind the ultimate need for optimum development of all water resources and for considering all practicable means of meeting demands.
>
> Second, the committee recommended that the Federal Government stimulate more active participation by the states in planning and undertaking water resources

> development and management activities. This would be accomplished by a 10-year program of Federal grants to assist the states in river-basin planning, ...
>
> Third, the committee recommended that the Federal Government should undertake a coordinated scientific research program on water, aimed both at increasing available water supplies and making more efficient use of existing supplies. ...
>
> The committee's fourth recommendation was that a periodic assessment of water supply-demand relationships, ... should be made biennially ...
>
> The fifth recommendation suggested steps to be taken by the Federal Government to encourage efficiency in water development and use ...

Although the Select Committee did not propose legislation (leaving this to the House and Senate standing committees), its efforts were later translated into two major acts: The Water Resource Planning Act of 1965 (Public Law 89-90) and the Water Resources Research Act of 1964 (Public Law 88-379).

The Water Resources Planning Act of 1965 created a Water Resources Council, provided for the establishment of River Basin Commissions, and provided for the development of state water plans. The creation and operation of the Council resulted in a clearer perception of problems and conflicts associated with the several levels of water and related land-resource planning -- local, state, regional, and federal. It brought about recognition that fundamental steps would have to be taken for the Council to be fully successful in carrying out its basic mission in an increasingly complex intergovernmental and interagency situation. In 1980, an analysis by a special Task Force on Planning Procedures and Plan Implementation made the following recommendations on what would be needed to bring about improvements in the areas of planning, development and management of water and related land resources:

-- The responsibilities of the federal government -- vis-a-vis those of the states -- with respect to those resources must be more explicitly defined.

-- A more effective mechanism for coordination of federal programs with those of state, regional, and local organizations must be established.

-- Federal programs must be made consistent among themselves.

-- Statutes and programs must be harmonized to common economic, environmental, and social goals.

-- Programs dealing with water quantity and water quality must be integrated.

Specific objectives to achieve the goal of comprehensive basin planning, as identified by the Task Force, were:

-- To identify and resolve, or recommend actions necessary for resolving conflicts among or between states and federal agencies.

-- To develop a consensus among states and federal agencies on plans for the management of water and related land resources in each basin, or group of basins, in the nation.

-- To recommend implementable and coordinated policies, strategies, programs and projects.

-- To strengthen the utlization of basin plans as a guide for water resource management decisions including, but not limited to, priorities for

federal investments, project approval actions, and regulatory decisions.

Finally, the major themes of the 1973 report by The National Water Commission, "Water Resources Policies for the Future" still serve as guidelines for water planners and managers at all levels of government as they seek to resolve growing problems of expanding populations, resource depletion, and resource misuse. They are:

-- The level of future demands for water is not inevitable, but derives in large part from policy decisions within the control of society.
-- There has been a shift in national priorities from development of water resources to restoration and enhancement of water quality.
-- Water resources planning must be tied more closely to land-use planning. If environmental quality is to be optimized, then water uses and land uses must be considered concurrently.
-- Sound economic principles should be applied to decisions as to whether or not water projects are to be built. This holds true also for water programs.
-- Policies are needed that will lead to more conservative use of water.
-- Laws and legal institutions should be reexamined in the light of contemporary water issues.
-- Development, management, and protection of water resources should be controlled by that level of

government nearest the problem and most capable of effectively representing the vital interests involved.

LAND AND WATER RESOURCES PLANNING - THE SETTING FOR IMPLEMENTING GROWTH MANAGEMENT POLICIES

Planning is both a means for ensuring that the needs of future generations will be recognized and a mechanism for resolving conflicts of interest. It is a chart for progress and social change. In a discussion of proposed growth-management legislation for the 1984 session, the Select Committee on Growth Management stated that ... "The components of growth are so intricate that growth is almost impossible to fully comprehend." Recognizing this, the Committee decided to focus its attention on four major areas: planning; coastal protection; urban policy; and resource management. And clearly, the last three of these areas also involve planning processes. Good planning, plan implementation, and plan monitoring are fundamental to the success of any growth-management strategy. Furthermore, planning at the several levels is the vehicle for addressing environmental problems and resource-management issues. Thus, the Water Management Districts must be concerned with how they can influence these planning processes in a positive fashion.

Planning at the State Level

At the state level, the state comprehensive plan mandated by Chapter 23, F.S. and the Florida State and Regional Planning Act of 1984, and the state water-use plan and the Florida water plan mandated

by Chapter 373 and the 1984 Act, are the principal growth-management vehicles directly affecting the Water Management Districts.

Chapter 23 (1972) called for a comprehensive state plan for land use and resource management. Although the plan was finally completed six years after being mandated, it was never to become a keystone of state policy. This was due mainly to the action of the 1978 Legislature which amended the State Comprehensive Planning Act so as not to require legislative action, making the plan "advisory only." Stripped of the force and effect of law, interest in the plan waned and finally disappeared.

Recognizing this problem, the 1984 Legislature passed the Florida State and Regional Planning Act of 1984. The Act requires that the Governor prepare a state comprehensive plan which provides long-range guidance for the orderly social, economic, and physical growth of the state. The plan is to be composed of goals and policies, briefly stated in understandable fashion, for the explicit guidance of state and regional agencies. The plan is to be completed by December 1, 1984 and is to be considered by the Legislature in 1985. Once the plan is enacted into law by the Legislature, or put into force by administrative rule, it is to be implemented and enforced by all state agencies. In addition, the Act calls for the development of state agency functional plans. These functional plans are to be developed and submitted to the Governor's Office within one year of adoption of the state comprehensive plan. In the case of DER and DCA, these functional plans must address the provisions of Chapter 373 (state water plan) and Chapter 380 (state land plan) respectively.

Relative to state-level water resources planning, the 1972 Water Resources Act contained the following provisions:

> 373.036 State Water Use Plan --
>
> (1) The department shall proceed as rapidly as possible to study existing water resources in the state; means and methods of conserving and augmenting such waters; existing and contemplated needs and uses of water for protection and procreation of fish and wildlife, irrigation, mining, power development, and domestic, municipal, and industrial uses; and all other related subjects, including drainage, reclamation, flood plain or flood-hazard area zoning, and selection of reservoir sites. The department shall cooperate with the Executive Office of the Governor, or its successor agency, progressively to formulate, as a functional element of a comprehensive state plan, an integrated, coordinated plan for the use and development of the waters of the state, based on the above studies. This plan, with such amendments, supplements, and additions as may be necessary from time to time, shall be known as the state water use plan.
>
> 373.039 Florida Water Plan -- The state water use plan, together with the water quality standards and classifications of the department or its successor agency, shall constitute the Florida water plan. The state water use plan should be developed in coordination with the water quality standards system.

The 1972 Act directed the Florida Department of Natural Resources (DNR) to prepare a water-use plan for the entire state. DNR delegated this responsibility to the Water Management Districts and they proceeded to develop water-use plans for their five regions. Then in 1975, the Florida Environmental Reorganization Act transferred the powers and responsibilities of DNR with regard to the State Water Use Plan to DER. That agency was expected to combine the five individual Water Management

District plans into a State Water Use Plan. The WMDs were given until January 1978, to submit official drafts of their input to this process.

Philosophical differences between the State Division of Planning and DER contributed to a stalemate in the planning process, and the regional water-use plans and the water quality standards were never assembled into a unified Florida Water Plan. Instead, DER turned to the development of a state water policy. The result of this action contributed to a legislative refocus on state-water planning as provided for in the 1984 Florida State and Regional Planning Act.

It is clear that the WMDs can and should play a significant role in the development of DER's functional plan for water resources management in Florida.

Regional Planning - Regional Planning Councils, Water Management Districts

Regional planning in Florida is conducted at several scales and from several perspectives. In this analysis, only the planning conducted by the RPCs and the WMDs will be considered.

Regional Planning Councils. The eleven RPCs in Florida have responsibility for regional policy development, planning, and coordination. The RPCs were mandated by Chapter 160 to adopt regional policy plans which were to be comprehensive in scope. These plans, when adopted, were to serve as the basis for the review of DRIs, local government comprehensive plans, federally-assisted projects, and other projects or programs as appropriate. In a 1983 study by the Select Committee on Growth Management, it was found, however, that only two of the RPCs had adopted a regional policy plan at that time. For the most

part, lack of funding was given as the reason for failure to meet this obligation.

The RPCs also have certain duties besides those in Ch. 160, F.S. They include being Regional Data Centers (186.00, F.S.), undertaking regional (and local) hazardous waste management assessments (403.7225, F.S.), and participating in transportation planning (Chapter 339, F.S.). Duties assigned by the Governor's Office include DRI reviews (380.66 F.S.), LGCPA reviews (163, F.S.), and ten-year Power Plant Siting Act reviews. Beyond these duties, each Council has a variety of other tasks it performs for state or local agencies, depending upon the needs of the area. Such tasks include Transportation Disadvantaged Plans, social programs such as being the Area Agency on Aging, and Community Development Block Grant Program, Economic programs such as the Job Partnership Training Act, and environmental programs (Areawide 208 Agency).

Even though there are some problems, the Governor's Office and the Legislature recognized that the RPCs have the potential for filling a needed planning and coordinating function. And thus, the Florida State and regional Planning Act of 1984 provided for a new start in developing comprehensive regional policy plans. It specified that once adopted, these plans would be used for DRI reviews, A-95 reviews and other regional clearing-house functions. Since the regional policy plans are not to be submitted to the Governor's Office until 18 months after adoption of the State Comprehensive Plan, it is far too early to judge how the performance of the RPCs will change. In theory, at least,

there should be greater resources available to them, and given the breadth of their areas of concern, new opportunities for cooperative efforts between the RPCs and the WMDs should emerge. Present efforts at cooperation and coordination are covered in a later section of the report.

Water Management Districts. The WMDs carry on a variety of planning programs. These range from comprehensive water use and supply development plans to detailed planning of individual water projects. The WMDs also serve in advisory capacity to several state agencies, the RPCs, federal agencies, and local governments as they pursue planning exercises required by their functions.

The State Water Use Plan provided for by Chapter 373 was the subject of intense effort by the five WMDs in the latter part of the 1970s. They all developed regional plans as input to the state planning process but, as previously mentioned, the State Water Use Plan did not materialize as expected. The 1984 Planning Act will again focus attention on this, and the competence and planning capabilities of the WMDs make them candidates to offer expert guidance and a reliable data base for this process.

In general, planning done by the WMDs is professional and thorough (particularly in recent years). When it is criticized, it is more likely to be for limited vision, and lack of breadth, than for technical quality. However, professional planners and water managers are not always in agreement on what constitutes a plan, and that has created some problems. In addition, the objectives of some planning efforts by the WMDs might be challenged for their value in the context of the total

regional scene. Nevertheless, the WMDs are the elite of Florida insofar as water goes, and they appear to hold the hope for success of future planning efforts under their own directives, or cooperatively with others that need their help.

Planning done by the Districts addresses an array of issues. They include: economic development; conservation; wastewater reuse; water quality management; preservation of wetlands; water uses of all types; fish and wildlife preservation; drainage; flood control; navigation; recreation; and the development, operation and maintenance of water resources systems.

Local Government Comprehensive Planning

The Local Government Comprehensive Planning Act of 1975 required that each unit of local government develop a comprehensive plan. It is generally agreed that these plans should be the foundation for growth-management actions. but inconsistencies in the law, widely-ranging competence, lack of resources and interest, and other factors have created a situation where these plans range from vague guidelines used only to satisfy the letter of the law, to detailed plans that are being used as the blueprint for future actions.

The 1975 Act requires that all development undertaken by governmental agencies, or permitted by a local government, and all land development regulations enacted by a local government be consistent with the local government comprehensive plan. Clearly, the Legislature intended that plans developed by the local governments under the provisions of the Act would carry the force of law and would be used to

guide local government land-use regulation. The language of the Act on this issue is:

> After a comprehensive plan or element or portion thereof has been adopted in conformity with this act, all development undertaken by, and all actions taken in regard to development orders by, governmental agencies in regard to land covered by such plan or element shall be consistent with such plan or element as adopted. All land development regulations enacted or amended shall be consistent with the adopted comprehensive plan or element or portion thereof.

Considerable progress in the area of local government planning has been made. Most local governments required by the LGCPA to prepare plans have done so. And while many of these plans are excellent, DCA still concluded, in 1983, that ... "the overall quality of much of the planning accomplished since 1975 has been below the level required to guide and control future development."

Much of the blame for this must be placed on state government which has provided little financial assistance to local governments for the preparation or implementation of their plans. Another factor is that the state and regional plans needed to serve as the basis for review of local plans and for guidance in the development of these plans have not been developed.

Pursuant to Chapter 163, F.S., at least every five years after the initial adoption of a comprehensive plan, each local government is required to prepare an Evaluation and Appraisal Report and submit it for state review. The primary purpose of this report is to evaluate the effectiveness of the plan during the period covered by the report and to provide for a basis for plan revision or update. Many

local governments are now approaching, or have reached this deadline. Consequently, an assessment of the local government planning process is in order to permit some deficiencies in the process to be corrected.

The Select Committee on Growth Management made a number of recommendations for improvement in the LGCPA program. They suggested that plans should contain land-use maps and definitions of land-use classifications. They also noted that the content of the plans might be improved by adding agricultural lands protection elements and capital improvements programs. It was stated that unless there were adequate mechanisms to ensure that land-use decisions would be made consistent with the comprehensive plans, and that local government development orders conformed to the plans, they would have little merit regardless of their overall quality.

THE WATER MANAGEMENT DISTRICTS - PARTNERS IN GROWTH MANAGEMENT

The State Legislature, in recognizing the importance of water to the well-being of its residents established policy guidelines for the water management districts. They are:

-- To provide for the management of water and related land resources;

-- To promote the conservation, development, and use of surface and groundwater;

-- To develop and regulate dams, impoundments, and other works and to provide water storage;

-- To prevent damage from floods, soil erosion and excess drainage;

-- To preserve natural resources, fish and wildlife;
-- To promote recreational development, protect public lands, and assist in maintaining the navigability of rivers and harbors; and
-- To promote the health, safety and general welfare of the people of Florida.

A Role for the Water Management Districts

That there is a role for the water management districts to play in growth management is clear. The exact nature of that role is subject to some controversy. In theory, it could range from the design and operation of drainage works to broad planning and management responsibilities extending beyond the traditional range of activities of water agencies. The optimal role likely falls somewhere in the middle of this range. Furthermore, it may not be the same for each of the districts. The previous review of studies and legislation spells out explicitly and implicitly some expectations for the WMDs and suggests other paths that they might follow as well. More will be said about this in the section of the report dealing directly with the mission of the SFWMD.

Differences to be Considered

It is important to recognize that while all water management districts embrace the same general responsibilities, they are different socially, geographically, politically, and climatologically. Thus there are differences in priorities and roles to be played. Vehicles such as the districts that can accommodate regional variances are one way to guard against a uniform technological fix approach.

A Range of Options

The options open for the Water Management Districts in terms of their growth management roles are infinite, providing that the legislative mandates and/or other circumstances needed to permit them are favorable. For this analysis, consideration is limited, however, to the following range of options:

-- Status quo;

-- Broader responsibilities in water supply, wastewater management, and monitoring;

-- Transition to a regional growth management agency.

A detailed discussion of these alternatives is included in Part III of the report where the SFWMD is dealt with explicitly, but the option regarding transition to a regional growth-management agency has such broad implications for all of the Water Management Districts that it bears discussion in this general introduction.

Factors to be Considered in a Major Organizational Reform

The attraction of expanded horizons sometimes obscures the need to determine whether a present mission is being adequately addressed. Build from strength rather than expand by dilution would seem to be a wise policy to follow. Are the water management districts doing all they should, as well as they can, in their own fields of expertise? This question should be answered as a first step in change. To move in new directions is difficult, but to do this from less than a superior base, is fraught with hazard. Before a new agency is formed, an old one modified or abandoned, or its mission changed, some careful reflection

on the consequences of the proposal, aside from the theoretical, should be given. It should include:

-- Consideration of the history of the existing organization, its mission, staff expertise, memory, and flexibility;
-- Recognition that an expanded role may require significant organization growth and increasingly complex management problems;
-- Assessment of the risk that taking on a significantly-changed role may cloud attention to important historic tasks and that focus on the change may result in inferior performance in former areas of excellence;
-- Realization that an expanded focus may result in an overall level of performance that is poor relative to the organization's original output;
-- Recognition that it is hard to be all things to all people;
-- Understanding that cooperation among organizations which can do one or more things well may result in better planning and management than that provided by fewer organizations with dilute capabilities.

Growth Management Issues to be Dealt with

In dealing with growth management issues, the WMDs must consider: their technical expertise; the functions they may be required to carry out; the nature of the problems they must confront; and their organizational structure. These will not be the same for each possible role the Districts could play. But even if the focus remains largely on

water management, the areas to be considered are far-ranging. In terms of function, the WMDs must deal with: conflict resolution; interagency and intergovernmental cooperation and coordination; data retrieval and systems monitoring; short- and long-range planning; systems operation and management; permitting; public relations; education; infrastructure maintenance and replacement; and research. Contemporary water problems encompass: water quantity-water quality coordination; surface water-groundwater management; water supply; water consumption; floodplain management; wetlands; water recharge areas; estuarine protection; and management of coastal barriers.

Addressing the Growth Management Agenda

The agenda of growth management issues is long and complex even if it is confined to water. The question is - Given the legislative focus and the growth management machinery already in place, how can information about water resources be most effectively applied to the development of meaningful growth management strategies at the state, regional, and local levels? The chain tying good information to good decisions is the key. And the Water Management districts should provide the binding link.

PART II - THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT: HISTORY, INTERFACES, ASSESSMENT

INTRODUCTION

Part II deals with the history and organization of the SFWMD in the context of: the District's past role in what is now called growth management; its organization in terms of the functions it performs; the depth, expertise, and flexibility of its personnel for adjusting to shifts in role; and intergovernmental, interagency, and public relations links. Several other regional models are discussed. They are: the Nebraska Natural Resource districts; the British Water Authorities; and the Metropolitan Water district of Southern California. A review of the roles of these organizations relative to those of the Florida WMDs, provides some lessons in experience and on the consequences of shifts in mission that bear on the growth management issue. In particular, an examination of these similar agencies suggests that the WMDs might well expand their horizons in the water supply and water quality areas and that such shifts would be more practical and likely to succeed than expansions into currently unassigned areas such as transportation.

The ways in which the SFWMD is already making its influence felt in growth management are extensive. Although many of these approaches have not historically been thought of in the context of growth management, they have been practiced to various degrees ever since the days of the Everglades Drainage District. Principal among the District's growth management tools are: data collection and interpretation; monitoring of system's performance; permitting and rule making; reviewing plans; planning; reviewing DRIs; participating in the Areas of Critical State Concern Program; advising; research; systems operation; construction of facilities; and working with the public. The SFWMD is actively

employing all of these tools, but not to the same extent or with the same level of impact.

It is clear that the SFWMD recognizes the problems it faces in dealing with growth management in South Florida. This recognition is tangible in many ways, one of which is a series of 1983-1984 task force reports on issues such as local government assistance, industrial siting, flood plain management, and groundwater. These reports contain a number of recommendations, all of which have merit. The problem is that implementation of the recommendations, to the extent necessary for them to be effective, may not be possible without some shifts in philosophy, ordering of priorities, and assignment of personnel. Furthermore, the effectiveness of implementation is not entirely under the control of the SFWMD. For example, assistance to local government planners can bear fruit only if they are interested in receiving it, and its form is designed to target their needs.

The SFWMD is performing very well in its traditional areas of expertise such as drainage, flood control, and system's operation. However, areas of concern relative to the success of growth management efforts in Florida center mostly around the various levels of comprehensive planning - state, regional, and local government. In these areas the District is concerned about its performance, but still grappling with the means to be most influential. There is some criticism by state agencies, the Governor's Office, interest groups, and various governmental planning offices that the District has not established appropriate liaison, that its guidance is not specific enough on the issues being dealt with, that it avoids politically sensitive issues, and that the District is not

appropriately staffed to become an active partner. It is with these aspects of its operation, that the District will have to focus more attention. For the most part, the District understands its limitations and recognizes the problems that must be dealt with; the challenge lies in devising a strategy for becoming a welcome and active partner in developing and implementing sound growth management policies for South Florida and the state. Part III of the report provides specific recommendations on the role of the South Florida Water Management District.

THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT: A BRIEF HISTORY AND ORGANIZATIONAL COMMENTARY

According to Light, the SFWMD has progressed through three periods of growth. The first of these, the Reductionist Period of 1905-1930, was characterized by constructing canals and reclaiming the Everglades for agriculture and settlement. The second period, the Comprehensive Planning Period of 1947-1971, featured the construction of flood control works and the implementation of the Corps of Engineers' comprehensive plan. The third period, Adaptive Management Period of 1972 to present, has been one of shifting focus from traditional concerns about flood control and drainage to issues of environmental quality and growth management. This evolutionary process provides the baseline for suggesting future courses of action and assessing their potential for success.

The Reductionist Period, 1905-1930

The flood of 1903 ushered in the Reductionist Period. At that time, the political inclinations of Governors Jennings and Broward

dominated. Generally, they favored agricultural development in South Florida and, associated with it, the drainage of Everglades lands. Canals were constructed from Lake Okeechobee to the Atlantic Ocean as part of this undertaking. Little, if any, consideration was given to the impacts of the drainage works aside from their implications for reclaiming land. The Great Depression of the 1930s brought about the insolvency of the Everglades Drainage District (established in 1913) which had been empowered to build canals, levees, and ditches primarily for the purpose of increasing opportunities for farming in South Florida.

The Comprehensive Planning Period, 1946-1970

The history of water resources programs and actions in the United States is highly correlated with crisis. Each epoch in the history of the SFWMD is also associated with critical periods. The devastating floods of 1946 and 1947 spurred the Florida Legislature into action. Formation of The Central and Southern Florida Flood Control District (1949) was the result. During this period, the pattern of large structural undertakings to manage water prevailed. There was also a first-time commitment by the Legislature to provide direct funds for seeing that flood damages such as those resulting from the 1940s floods would not likely occur again.

The Flood Control District was given broader authority than its predecessor. It was empowered to: establish and regulate water levels in canals; construct canals, levees, and dams; and operate and maintain the District's flood control works. Central to the mission of the District during the Comprehensive Planning Period was the Corps of

Engineers Comprehensive Plan, a plan which emphasized flood control benefits.

The District also witnessed some institutional changes during this period. In particular, the post of executive director was established, and other administrative changes occurred which paved the way for building an elite professional staff.

Engineering works constructed during this period blocked the historical overland flow to the current Everglades Park area. The result was a reduction of flow to about 50 percent of its former level. At the time, there was little thought given to environmental impacts of water projects. The affects of reduced flows on fish and wildlife resources were considered secondary, if at all, to the importance of providing flood protection to development interests. The environmental movement of the 1960s and the droughts of the early 1970s strongly influenced the mode of operation of the District and brought an end to the Comprehensive Planning Period.

The Adaptive Management Period, 1972-Present

During the drought of 1971, Governor Askew questioned the growth policies of the state in the context of the water crisis in South Florida. On the strength of the concerns of the Governor and others about the ability of Floridians to cope with periods of water shortage and environmental issues, several pieces of landmark legislation were passed. Among these was the Water Resources Act of 1972. That act established the Water Management Districts and charged them with responsibility for considering fish and wildlife, water quality, and

other environmental parameters along with flood control, drainage, and water supply.

Since 1972, the SFWMD has created a Water Quality Department, published a Water Use/Supply Plan, and adopted a Water Shortage Plan and an emergency water allocation program. It has gone through some internal reorganizations and has shifted its focus toward broad water management issues supportive of regional and local government planning processes. It has moved from a largely structural approach to dealing with water quantity to a more balanced attempt to deal with water in all of its dimensions.

Concurrent with the evolution of the District has been an evolution in the character of growth and economic base, and in the approach being taken to solve environmental and social problems in South Florida. Since the end of World War II, the growth of Florida, especially South Florida, has skyrocketed. Along with this influx of people has come an economic shifting from dependency mainly on tourism and construction to one including those elements, but also based on a rapidly growing "high tech" industry and the emergence of an impressive international banking center. Furthermore, the people of Florida have begun to think more intensely about the impacts of the state's rapid growth on them and their surroundings. The new social moods, along with the economic base shifts, have ushered in many changes in the ways traditional resource management and other agencies function. Clearly, the orientation of the SFWMD has been strongly affected by these shifts.

The technological focus of the SFWMD has been dimmed by the realization of water managers and citizens alike that social well-being

in South Florida is inextricably linked to maintaining a balance between growth and its impact on the fragile ecosystem that must support it. Unfortunatley, the limited objectives of many past actions, flood control for example, have led to the implementation of programs that sometimes have become a curse rather than a benefit. The problem is that while many past intentions were good, the actions taken to achieve them were not designed with full consideration of their external effects on the environment or on quality-of-life measures other than those limited to purposes such as flood protection or improved water supply. Still, we are only human, and thus will always make mistakes as we move forward. To criticize past actions,which at the time seemed appropriate, is unproductive. The lesson to be learned is that actions taken to manage any resource will have implications in other sectors, and that those responsible for limited-purpose programs must take responsibility for addressing the effects of what they propose outside of their own domains.

The early efforts to drain the Everglades, the heavy past emphasis on flood control and drainage, and the desires of many to rapidly exploit the state's land and water resources have contributed to a general degradation of the environment and of the quality of life in South Florida. This has been widely recognized, however, and the landmark efforts of the Legislature in the early 1970s to set some of these matters straight speaks well for the future, at least in theory. As noted by Light, the emergence of the Adaptive Management Period signaled the beginning of a regional management perspective that was: mindful of the many technical-social-legal-environmental-political-

economic interactions; and designed to accommodate them as well as the state-of-the-art would permit.

Since the severe drought of the 1970s, the people of South Florida and their elected officials have begun to carefully evaluate the consequences of growth and to focus their attention on ways to effectively manage the growth that will occur in the future. The focus has shifted from one of encouraging growth to one of trying to see that the effects of growth are more often positive than negative. An example of the shift in attitude is the outcome of one of the first major planning activities of the SFWMD after its formation in 1972. During its planning process in 1977, the District canvassed the public to determine its preference in water supply alternatives which included: (1) raising water storage levels; (2) back-pumping of east coast canals; (3) providing additional water conservation areas; (4) water-use regulation; (5) developing new well fields; (6) desalination; (7) deep aquifer storage and retrieval; and (8) wastewater reuse. Not surprisingly, the options favored were those having the least structural elements. Consequently, the District has pursued: water-use reduction programs; the intensification of technical assistance to local governments regarding water supply availability and use; and the evaluation of more environmentally acceptable alternatives for increasing water supply. Management approaches rather than structural approaches have been given heavy emphasis. Examples are the drought management water shortage plan and the emergency allocation system to ration the discharges from Lake Okeechobee.

Other trends amplifying the concerns of South Floridians about water supply and related growth management issues are reflected in the increasing interest by local governments in seeking technical assistance from the District, and from the recent efforts by the Corps of Engineers to seek alternative water supply measures for South Florida. These options digress markedly from the Corps' traditional structural approach to ones that can be implemented by local governments on a small scale. They include: water conservation; well-field development; wastewater reuse; deep-well injection; and desalting by reverse osmosis.

This history of the evolution of the District and of the changes that have taken place in South Florida shows that the goals and attitudes of people and agencies have shifted over the years. The question is, can these changes be accommodated without significant changes in institutional structures?

The Core Mission Statement of 1984

The SFWMD is concerned about growth management. This is evident in many of its actions. The interest was formalized in 1984, however, with the publication of the following Core Mission Statement:

> The core mission of the South Florida Water Management District is to manage water and related resources for the benefit of the public and in keeping with the needs of the region for the purposes of providing:
>
> Environmental Protection and Enhancement
> Water Supply
> Flood Protection
> Water Quality Protection

> This is being accomplished through the coordination of operations, planning, public involvement, regulation and construction. Inherent in the mission is the responsibility to assist the public and government officials in growth management by identifying water resource impacts of land-use decisions and by advising on options for reducing adverse impacts and protecting water resources.

The last portion of this statement explicitly reflects the attitude of the SFWMD, and the prominence it gives to committing its resources to issues of growth management in the South Florida region.

The Organization - Personnel, Tradition, Outlook

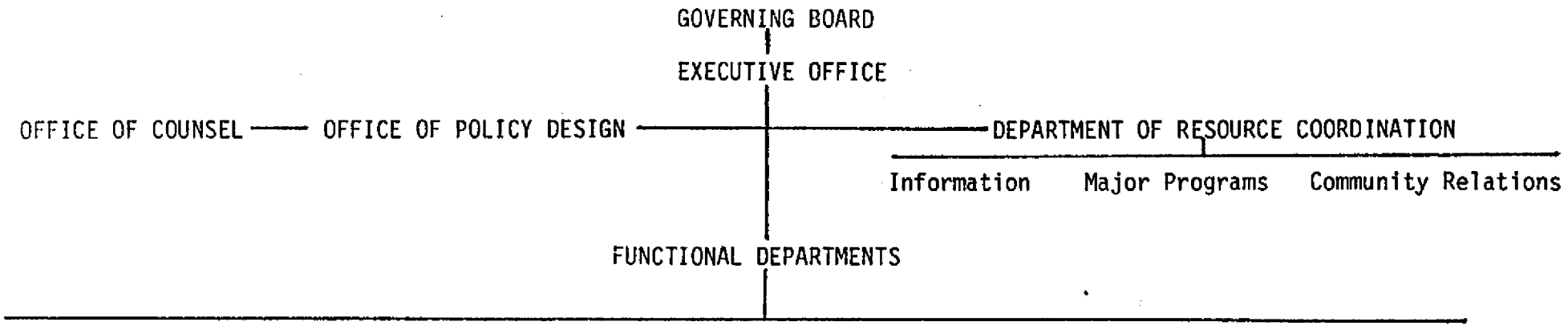
As noted before, the SFWMD has existed in one form or another since the Everglades Drainage District was formed (shortly after the turn of the century). Following that inauguration, both the nature of the organization's staff and its objectives have changed. These changes reflect various turning points in the state's development. Without question, current trends in organizational structure and attitude are heavily influenced by the Legislature's and the Governor's concerns related to growth management.

As a setting for considering the role of the SFWMD in this process, it is useful to look at the organization's staffing, philosophy, resources, and capability for undertaking various assignments. It should be understood that the flexibility of any organization is strongly tied to the "memory" of the organization. To ignore this, in any reorganizational effort, is to invite poor performance and possible failure.

For many years, the mission of the SFWMD was primarily flood control and drainage. And these are still important activities. Thus, it is not hard to understand that the problem-solving approach of many of the staff is biased toward traditional engineering methods. This "memory" will fade over time, but will not completely disappear until a turnover in personnel is accomplished, and then only if their replacements have different backgrounds and philosophies. While most would admit that too much memory of a structural bent could limit the ability of the District to assume new roles and seek more innovative solutions to water management problems, they would also have to recognize that some retention of that memory is essential if a balanced approach to growth management and other issues is to be achieved, and if the District's massive field system is to be operated and maintained successfully. The point is, an organization with a long history of competence in one area is unlikely to be able to shift directions drastically unless there are massive personnel changes. And such rapid changes are less likely to produce good results than gradual ones that can be made through the addition of new staff and the retraining of the more pliable older ones. In the long run, the solution to water problems in South Florida and elsewhere will require an imaginative blending of old and new (structural and nonstructural) methods. The tradition of the SFWMD should be recognized and its good points capitalized on.

The present organization of the SFWMD is given in Figure 1. The District is governed by a nine-person Governing Board, the members of which are appointed by the Governor of Florida. The Board's composition

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ORGANIZATIONAL CHART



RESOURCE PLANNING

- Water Use Planning
- Environmental Sciences
- Water Resources
- Data Management
- Groundwater
- Water Chemistry

TECHNICAL SERVICES

- Geographic Sciences
- Computer Programming
- Computer Systems and Operations
- Graphic Communications
- Reference Center

RESOURCE OPERATIONS

- Accident Prevention
- Special Studies
- Maintenance
- Engineering and Construction
- Electronics
- Operations

RESOURCE CONTROL

- Surface Water Management
- Water Use
- Field Engineering

ADMINISTRATION

- Treasurer
- Budget Coordinator
- Accounting
- Internal Auditor
- Purchasing
- Personnel
- Real Estate
- Air Transportation

FIGURE 1

is varied and reflects environmental, social, and technical points of view. The members of the Board serve for four years and may be reappointed. Considering that six of the nine members of the present (1984) Board were last appointed in 1983 or later, it is clear that the current inclinations of the Governor are reflected in their views.

A controversial aspect of the WMD Boards is that they are appointed rather than elected. Present evidence suggests that the appointed boards may have the advantage of providing better quality leadership and affording better insulation from political pressures than elected boards. But there are good arguments on the other side also.

Reporting to the Governing Board, is the Executive Director. In the SFWMD, this is a powerful and influential position. The Executive Director is responsible for carrying out the programs agreed upon by the Board and for overseeing the functions of the District. Although he is responsible to the Board for his actions, the Executive Director is also influential in decision making by the Board.

As shown in Figure 1, the District is divided into several major departments. These are the departments of: technical services; resource planning; resource coordination; resource operations; resource control; and administration. While all of the District's arms have some role to play in growth management, several of these have the most direct links and thus are the ones focused on in this report. They are the departments of resource planning, coordination, and control.

It is important to note, however, that the annual budget of the District is broken down about as follows (1982-1983); 54 percent to O&M, construction,and resource management; 11 percent to resource planning; 5

percent to resource control; and 30 percent to technical services, land acquisition, administration, and various other purposes. Clearly, the lion's share of the budget is devoted to operating and maintaining the massive system the SFWMD has developed over the years. This aspect of the district's obligation must be recognized and provided for in any deliberations about new or expanded roles. Clearly, long-term commitments must be made to provide staff expertise in this important category.

The three departments dealing most directly with growth management share about 16 percent of the District's budget, but one of these, the Department of Resource Coordination, has an annual budget of less than one percent. Staff levels of the three departments are about: 120 for Resource Planning; 52 for Resource Control; and 15 for Resource Coordination. The functions of each of these departments is discussed briefly here and in more depth in Part III where specific recommendations are made.

Department of Resource Planning. This department is the planning and research arm of the SFWMD. It is concerned with planning, planning coordination, and technical studies. It interfaces with planners in state and local governments with the objective of providing technical assistance and information. The department is partitioned into divisions of: water-use planning; environmental sciences; data management; water resources; groundwater; and water chemistry. Efforts of the department include: modeling of regional surface water and groundwater systems; studying the chemical and biological aspects of South Florida lakes and streams; exploring options for water

conservation and reuse; developing water-use plans; evaluating water quality management options; and cooperating with local governments as they develop and revise their comprehensive plans.

Department of Resource Control. This is the regulatory department of the district. Emphasis is on the review and issue of surface water management and water-use permits. And there is a role in groundwater regulation. This is evidenced by the Department's addition of a "Regulatory Compliance Surveillance" program to track the progress and compliance with permitted specifications of surface water management projects and the delegation by Florida Department of Environmental Regulation of water-well permitting and well-driller licensing programs to the District. Land development review programs (DRIs) and surface water management criteria programs are also the responsibility of the department. The Field Engineering Division conducts project inspections and is the enforcement arm of the department.

Department of Resource Coordination. This is the smallest department of the District. It consists of the following divisions: information services; community relations; and major programs. The responsibilities of the Department include: dissemination of information, public relations; acquisition of permits the District must obtain from DER and other agencies; coordination of requests for federal funds; summarization of current District projects; issue identification; conflict management; coordination of the local government assistance program; providing staff support for the Chapter 380 Resource Planning and Management Committees; and legislative liaison.

Of the three departments discussed above, the Resource Planning Department and the Resource Coordination Department have missions that suggest they could play a more active role in growth management programs. The Department of Resource Control, due to its regulatory focus, must be reactive, but even so, there are opportunities for it to be influential in decision making before the fact. In Part III of the report, the present efforts of these departments relative to growth management are discussed and recommendations made for improved performance.

SOME OTHER ORGANIZATION MODELS - A POINT OF REFERENCE

Since the early 1900s, many panels have considered the merits of regional and/or river basin organizations to carry on water resources planning and other related functions. The notion is still strong that regional, in addition to state and local, perspectives are needed if wise decisions are to be made regarding investments in water resources projects and/or programs.

Regional water agencies and organizations may have powers ranging from comprehensive (planning, constructing, and managing), to very narrow, encompassing only such functions as planning, or coordinating, or issuing of permits. Agencies with wide-ranging powers offer the attraction of minimizing the number of entities which must be dealt with, but have the drawback of minimizing checks and balances. A problem inherent in all of these organizations is coordination of their functions with counterparts having some common ground.

In recent years, the problems of fragmented interests in water programs in many localities and the extension of problems beyond the

jurisdictions of some governmental units has led to the consolidation of organizations and the emergence of new authorities having capabilities for managing some aspect, or some aspects, of water over an intergovernmental region. A review of several regional water management agencies gives some insights of how other areas have fared with regional approaches and what lessons from them could be transferred to the WMDs.

Nebraska Natural Resources Districts

In 1939 there were 172 special purpose entities in Nebraska designed to deal with some aspect of the state's waters. As greater demands were placed on this resource, additional governmental units emerged to address special needs. By 1969, the number of such organizations had grown to about 500. The result was a host of narrowly-focused organizations, overlapping responsibilities, duplication of services and taxation, and limited ability to cope with problems encompassing more than one jurisdiction. There were about 15 types of organizations which had been authorized by the State Legislature. These included: soil and water conservation districts; watershed conservancy districts; watershed districts; watershed planning boards; irrigation districts; reclamation districts; sanitary drainage districts; drainage districts; and ground-water conservation districts.

To provide a better focus on solving the state's water problems, the Legislature determined that a consolidation of these many districts was in order and that a new set of regional water management districts should be devised to blanket the state. Action was taken in 1969 when the State Legislature established 24 Natural Resource Districts (NRDs). It was the intent of the Legislature to create governmental units with

sufficient powers to address the broad range of natural resources issues and implement programs or projects to resolve them. Although only about 300 of the previous districts were merged or abolished in the process of setting up the NRDs, the new organizations had much greater capacity for managing water and other natural resources than their predecessors. The original intent of the NRD movement was to bring about a total consolidation of existing entities. This was not politically feasible at the time, and so a compromise was struck. Nevertheless, the remaining districts were encouraged to cooperate and, if possible, merge with the NRDs. In addition, the Legislature specified that no new districts of previous form could be established after the passage of the legislation.

The supervisory control of the NRDs is vested in the state's Natural Resources Commission. This semi-autonomous agency has broad powers and is charged with the task of coordinating the activities of the NRDs, other state agencies responsible for some aspect of natural resources, and other substate entities including counties, municipalities, and those special purpose districts which were not abolished or merged into the NRDs. The principal state agencies to be dealt with are the Department of Water Resources (responsible for administering the water rights of the state), the Department of Agriculture, and the Department of Environmental Control (the state's counterpart to EPA). The Natural Resources Commission (NRC) must also interface with those Federal agencies whose programs apply to various aspects of developing and managing the state's waters. Even with the consolidation brought about by the formation of the NRDs, there are

still many Federal, State, and local agencies or units of government that must be dealt with. The NRC is thus faced with coordinating these units and/or their activities.

The Districts have an array of project authorities available for local people to apply in solving resource problems. These project authorities include: (1) erosion prevention and control; (2) prevention of damages from flood water and sediment; (3) flood prevention and control; (4) soil conservation; (5) water supply for any beneficial uses; (6) development, management, utilization and conservation of ground water and surface water; (7) pollution control; (8) solid waste disposal and sanitary drainage; (9) drainage improvement and channel rectification; (10) development and management of fish and wildlife habitat; (11) development and management of recreational and park facilities; and (12) forestry and range management.

In keeping with the assignment of many areas of responsibility, the Legislature did not overlook providing the needed authority to be able to get the job done. The powers of the NRDs include: taxation (levy not to exceed one mill); eminent domain; construction and maintenance of facilities; acquisition and disposal of water rights; financial assistance for projects; regulation of ground-water use; development, storage and distribution of water; regulation of land use in certain cases; rate setting for water furnished; development of facilities for solid-waste disposal; provision of technical assistance; assignment of charges to beneficiaries for services; and initiation and conduct of studies.

While the NRDs may obtain water rights, they have little real control over surface-water or ground-water allocations. The rights to divert waters are administered by the Department of Water Resources. In addition, the quantity and quality of streamflows are largely determined by the Department of Environmental control and the state's Game and Park Commission.

One of the advantages the NRDs hold over their predecessors is that of dimension. On the average, the NRDs are about four times larger than the average Nebraska county. This scale gives the NRDs the financial capability to obtain qualified technical staffs. Furthermore, the NRDs have access to a State Resource Development Fund which may be used to fund or partially fund meritorious state projects. The size of the districts also suggests that many localized problems can be resolved within the bounds of a single NRD.

On the negative side, it has been argued that the choice of watershed boundaries was not wise since most NRDs cover only parts of a basin. More importantly, since most state data are reported on a county basis, many believe that aggregations of counties would provide better limits of operation. The fact that not all of the special-purpose districts existing before the NRD legislation were disbanded or merged with the NRDs is another weakness. This is important since some of these other districts, the irrigation districts, for example, are powerful in their own right and thus dilute the authorities of the NRDs.

Regardless of some of the weak spots, the NRD movement in Nebraska has much to recommend it. The NRDs are acting to facilitate coordination and are becoming a recognized force in dealing with

intrastate water problems. The essence of the NRD model is sound and transferable. Furthermore, and of special relevance to the Florida WMDs and this study, is the emphasis the NRDs place on educational programs.

The NRDs, in their efforts to manage the state's resources, have recognized that eduation of the state's people is a key to the success of their programs. They believe that ... "an informed and educated citizenry is the only hope for conservation, and of proper development in the future."

The NRDs start their efforts at the elementary school level, aiming programs at youth. The NRD's "workshop" educates teachers on how to implement outdoor and conservation edcuation in their school curriculums. Some districts offer students prolonged "live/learn" experiences where they live in natural areas studying the local ecosystems. NRDs also stage conservation and education experiences of a shorter nature using camps and outdoor education centers.

In addition, the NRDs provide innovative materials such as conservation education simulation games and other informational audio-visual and written resources materials.

While there is a definite focus on youth, the NRDs recognize that it is the landowners who need to be educated about the state's resources. Television programs, films and public information projects are designed for the adult population in the state -- all financed through local NRDs. Through the use of electronic and written media, districts strive to inform all their citizens, both rural and urban, about natural resources and their relationship with the environment.

British Water Authorities

In 1974 there was a major reorganization of the water industry in England and Wales. Fifteen hundred different organizations, each responsible for water supply, sewage disposal, river management, or some other water service were amalgamated into ten Regional Water Authorities. For the first time, the management of potable and wastewater was combined and a single public authority was given overall control of all aspects of water in each river basin.

In less than five years, a major reorganization plan for provision of comprehensive water services was conceived, evaluated, modified, and implemented. The Central Government of England had concluded that an urgent need existed for the creation of Regional Water Authorities, ones that could take a comprehensive and long-term view of all aspects of water management and that could take successful and cost-effective action to safeguard water supplies and protect the environment.

In January of 1973, a Bill to reorganize the water industry was introduced in parliament. The primary purpose of the proposed Act was to transfer functions from existing authorities to new water authorities and to define the power of the Ministers in relation to the new authorities. The Act did not substantially change any functions. The new water authorities were simply to inherit the functions of the existing authorities. The impact of the Water Act of 1973 was to provide a new organizational mechanism for maintaining continuity of ongoing services. Instead of fragmented, uncoordinated local efforts, a region-wide perspective was envisioned.

The major provisions of the 1973 Water Act are summarized here:

(1) The Act creates 10 Regional Water Authorities which effectively cover all of England and Wales. These authorities are multi-purpose organizations responsible for public water supplies, sewage collection and sewage disposal, pollution control, control of water withdrawals (both surface and ground), land drainage (including provision of flood protection), fisheries and recreation.

(2) The membership of the Authorities is a combination of Central Government appointed members and members appointed by local authorities. The local authority members are in a majority over the ministerial appointed members. The belief was that elected individuals have a tie to the public or are accountable to the public which an appointed person simply does not possess.

(3) The Secretary of State for the Environment is the key government Minister interacting with the Regional Water Authorities. He is charged with directing the implementation of national policy with regard to water supply, sewage disposal, restoration and maintenance of water quality, and recreation. The Minister of Agriculture, Fisheries, and Food has specific contributions to make in the area of land drainage and fisheries.

(4) Water Supply: The new water authorities are to be responsible for water supply in each of their areas from 1 April 1974. Private water companies remain in existence. Water supply facilities of local units of government and joint water boards (two or more local units of government) are now owned and operated by the Regional Water Authorities.

(5) Sewage and Sewage Disposal: The Regional Water Authorities must provide those public sewers as are necessary to effectively serve their area. Local authorities may act as agents for the Regional Water Authorities for the sewage collection function at the local level. Local Authorities control the location of collecting sewers within their area and secure funds for both operation and maintenance of these sewers as well as capital funds for new sewers from the Regional Water Authority operating in their area. The Regional Water Authorities have responsibility for installation, operation and maintenance of all trunk and

intercepter sewers as well as sewage disposal plants.

(6) Pollution and Water Quality Control: Under the provisions of the Water Act of 1973, the Regional Water Authorities have the responsibility for the prevention of pollution in the rivers and adjacent coastal waters in their areas. One mechanism for the Regional Water Authorities to implement this task is through the specification of effluent discharge limits for both the industrial and municipal point sources together with control of new point source discharges.

(7) Fisheries: The Act specifies that it is the duty of every Regional Water Authority to maintain, improve, and develop the salmon fisheries, trout fisheries; freshwater fisheries, and eel fisheries in their individual areas.

(8) Land Drainage: While each Regional Water Authority is authorized to exercise general supervision over all matters relating to land drainage - the actual discharge of land drainage functions (excepting financial) is in the hands of a regional land drainage committee. The major function of land drainage is to remove unwanted water from the land and promote optimum soil - moisture relationships for increasing agricultural productivity. Included in this broad set of tasks is flood prevention in both rural and urban settings.

(9) Recreation and Amenity: The Water Act makes it a duty for all Regional Water Authorities to put their water resources and land associated with this water to the best use for recreation purposes.

(10) Planning Requirements: The Act specifies that each Regional Water Authority must undertake as soon as practicable after 1 April 1974 a series of steps which are essential to the comprehensive planning of the water industry. First, the RWAs are required to perform a survey of the water in their area - the purposes for which it is being used, the quality of the water in relation to both current and anticipated future uses, and the existing management structures. This report is essentially a current status report on the water resources. The second planning report required under the

provisions of the Act is to make an estimate of demand 20 years into the future (beyond the date on which the current status is completed). The third planning report is a rolling five to seven year capital works plan which is designed to provide more efficient management of the water service, to meet anticipated demand, and to restore the water quality in the rivers and coastal waters.

The long-term demand plan must be updated at a minimum of once every seven years. The rolling capital plans are to be prepared in consultation not only with appropriate ministers, but also it will be necessary that these plans be coordinated with every local authority throughout the region that has responsibility for structural plans, local plans or development plans.

(11) Financing: In the past, capital projects in the Water Industry were financed in a variety of ways; including direct grants and sources of capital generally available to local units of government. Under the new Act, the capital expenditure of the Regional Water Authorities is controlled in a way similar to nationalized industries in Great Britain. Namely, each year a capital ceiling will be set by Central Government; each RWA may then borrow from the Central Government funds up to the ceiling limit. Subsequently, these funds must be repaid at a fixed interest rate for a fixed time period. The thrust of this capital finance mechanism is to combine five to seven year rolling capital plans together with the long-range, 20-year demand studies and attempt to use more systematic means of analysis in order to optimize the utlization of resources.

The Thames Water Authority is one of the ten authorities established in England and Wales in 1974. An assessment of that authority by Bulkley in terms of financial, administrative, political, and jurisdictional criteria provides a good indication of the Thames Authority's functions and how well it performs them. A condensation of his assessment follows:

Financial Criteria.

1. All costs and benefits should accrue within the district served and should be equitably distributed therein.

By making the boundaries of the Regional Water Authorities essentially those of the river basins, the first part of the criterion is satisfied. The equitable distribution of costs and benefits is more difficult to achieve, but the Thames Water Authority is moving in that direction. Government grants for both construction and rate support have been eliminated so that all costs will be borne within the Authority.

2. Agencies should have the power and authority to raise adequate capital and the flexibility to select the best means to secure these funds.

At present (1975), England's Regional Water Authorities fail to meet this criterion. All borrowing must be done from the Central Government. Interest rates are fixed at the time of the loan and are constant throughout the fixed 25-year term of the loan (no acceleration clause).

Administrative Criteria.

1. The authority of an organization should be broad enough so that it has the power to resolve conflicts among users and to balance governmental needs and resources.

This is one of the strengths of the Water Authority concept. By encompassing both an entire river basin and the complete range of functions related to water, the Thames Water Authority is able to make

decisions that result in an efficiency of resource utilization not possible otherwise.

2. Organizations should have the legal and administrative authority to perform the functions assigned to them.

Regional Water Authorities generally have such authority, but there are two notable exceptions. The first is that sewerage is still in the hands of local government councils who receive funds from the Water Authorities to provide and maintain sewerage. These funds are spent by local prerogative and misuse is possible.

The second exception is that private water companies persist as autonomous, unregulated water supply agents. However, there is general agreement that these may be eliminated following a performance review by the Central Government.

3. Links of communication and the process of coordination should be formalized.

Again, by making the Authorities comprehensive with regard to both area and function, this criterion is essentially satisfied. The organizational structure entails very little separation of functions and most committees must consider the entire range of services for the whole area. Furthermore, the preparation of both long-range and rolling-capital plans assures coordination with other responsible governmental units.

Political Criteria.

1. An agency should be accountable to the public.

Accountability is achieved by the fact that a majority of the members of an Authority must be elected public officials. While no

members are elected to the Authorities directly, the record of their performance on the Authority becomes a part of their total record to be judged by the electorate.

2. An agency should be responsive to the public.

The scheduling of frequent public hearings is a matter of agency policy and not an inherent feature of a specific agency. In the case of the Thames Water Authority, it was believed that more public hearings might be in order.

3. A new organization should be compatible with the overall government structure.

The birth of the ten RWAs in England and Wales was concurrent with a general reorganization and consolidation of local governments. Although there appears to have been no effort to coordinate boundaries between the two, the required coordination may proceed afresh, unencumbered by pre-established procedures. The local government units have retained responsibility for sewerage and they play a major role in the appointment of the members of the Authorities; the majority of each Authority being appointed by the county councils and the local district councils.

Criteria Related to Area of Jurisdiction.

1. The service region should be large enough to realize economies of scale.

The extensive consolidation under the Regional Water Authorities leaves little doubt that great economies will be realized under this system. The costs of high quality management are borne by an entire regional population.

2. Agencies should be able to consider and adjust (or adapt to) externalities stemming from hydrologic interdependencies.

Here again, the use of river basin boundaries and the inclusion of all water services eliminate hydrologic externalities. The question of inter-basin transfers, especially from Wales to the upper Thames, is an unresolved issue. Current policy within Thames Water Authority is to improve and enhance the existing water resources within the catchment through groundwater recharge and groundwater pumping rather than inter-basin transfer.

Metropolitan Water District of Southern California

The Metropolitan Water District of Southern California is composed of 13 cities, 11 municipal water districts and the San Diego County Water Authority. It serves a population of about 12 million people over a distance of more than 150 miles, drawing its water from many sources, some of them being very distant. The MWD was established to provide water for its region in Southern California. In a sense, it has a limited focus such as that had by the Central and Southern Florida Flood Control District. The District engages in planning, design, construction, and operation of facilities. For taxing purposes, the 1982-1983 assessed valuation was slightly over 353 billion dollars. The MWD receives funds from the sale of water and power, with receipts from these two sources being about $150,000,000 in 1982-1983. The demand for water in the District's service area averages about 3.1 million acre-feet per year. This demand is partly met by importation of water from the Colorado River and the California State Water Project. Local water supplies are met largely from groundwater basins which are dependent on

precipitation for replenishment. To augment these supplies in the future, the District is developing a reclaimed wastewater yield. The feasibility of storing imported water in groundwater basins is also being studied.

The number of persons employed by the District in 1982-1983 was 1322. In addition, there is a summer student hiring program which offers employment to about 50 students each summer.

Points of Reference

In the United States, only the WMDs and the NRDs are statewide in scope. The British Water Authorities, although nationwide, are on a similar land-area scale. Usually, districts dealing with water are specially organized in a locality, and then for a well-defined and limited purpose. The Metropolitan Water district of Southern California is an example. In general, there has been much opposition to regional governments, mainly because local governments are reluctant to accept any erosion of their powers. And while regional government has long been recognized as a mechanism for achieving economies of scale, efficiencies in operation, and ending conflicts among jurisdictions, it has been difficult to accomplish politically, and is being implemented slowly, at best. The formation of regional authorities usually occurs as the result of strong motivating circumstance (WMDs grew out of the drought of the 1970s). And because of this, the proponents of such organizations must ever be mindful that designs expanding their authorities, if not timely, could result in a regression rather than an increase in power.

The three types of authorities discussed above, all deal with water, all have the power to raise funds, and all have the ability to do more than plan. They are somewhat of the same scale, and they all came into being due to critical situations relative to the desires of people to: have adequate water; protect the quality of their water resources; be protected from floods; or for other water-associated reasons. While the authorities of these organizations are not all the same, they are all limited in that they do not deal with issues far removed from water quantity or water quality. Their designers realized that implementation would be unlikely if the assigned powers deviated significantly from the issues that were the motivating forces.

The Metropolitan Water District of Southern California is focused on issues of water supply. It provides and sells water and also generates revenues from power produced by its system elements. In this regard, it differs from the SFWMD. It is the major water supplier for the Southern California metropolitan area, an area which has an analogy to the lower east coast area of Florida. If this type of water supply management can work in a region of over 12,000,000 people, it might serve as an example of what could be done in Florida's most populous localities.

The Nebraska NRDs have somewhat broader authorities than the WMDs. They are involved in forestry, range management, soil conservation, and recreation and park management. They are empowered to develop water resources and distribute them, to dispose of solid wastes, and to promulgate and enforce land-use regulations. The NRDs and the WMDs both have similar powers of taxation. The NRDs also have statutory authority to deal with pollution control. Their mandate in water quality, solid

waste disposal, and in land use regulation suggests that these are areas the Water Management Districts might logically consider as targets for exerting more influence.

The British Water Authority model is an interesting one. These authorities have virtually complete control over the waters of their regions. The BWAs are in the business of water supply and pollution control. They can plan, build, operate and maintain facilities. They regulate water withdrawals and set water quality standards. They are in the planning arena, both short-range and long-range, and because they are in effect "water masters", their conflict resolution capabilities are enhanced. As in the case of the NRDs, the BWA designers also recognized the importance of coordinating water quality and water quantity considerations. Some features of the BWAs could be transferred to the WMDs as part of their broader involvement in growth management programs in Florida.

PRINCIPAL AGENCIES, ORGANIZATIONS, AND INTEREST GROUPS INTERFACING WITH THE SFWMD IN GROWTH MANAGEMENT PROCESSES

Many federal, state, and regional agencies, local governments, and special interest groups have a stake in what the Water Management Districts do. Furthermore, the WMDs have a stake in what many of these institutions do as well. In the SFWMD there are 137 local governments, 16 counties, and five Regional Planning Councils to be dealt with, aside from state and federal agencies and other organizations. Many of these entities are involved in planning and maintaining water treatment facilities, drainage networks, irrigation facilities, and reviewing construction plans as well as in fulfilling their responsibilities under

the Local Government Comprehensive Planning Act and the Florida State and Regional Planning Act. These agencies must be informed on water issues in their regions, and the District must be cognizant of plans and water requirements in its area of jurisdiction. Continued active coordination between the District and these various agencies is essential. Thus a summary of their roles is useful here. In a later section of this Part and in Part III, an evaluation of how well these agencies and the SFWMD coordinate their activities and some recommendations for improving this process are given.

Federal

Several federal agencies play roles in water management in South Florida. These include the U.S. Army Corps of Engineers, the Environmental Protection Agency, and the U.S. Geological Survey. In addition, other federal agencies such as NOAA (Coastal Zone Management Program) have impacts, primarily through advisory responsibility, grant programs, and related studies. The Department of Agriculture, various divisions within the Department of Interior (Bureau of Sport Fisheries and Wildlife, for example), and the Department of Housing and Urban Development, are examples.

Corps of Engineers

In terms of planning, design, and construction of various water management and flood control projects, the U.S. Army Corps of Engineers has had a significant impact on the South Florida region. The Corps has the primary responsibility for federal participation in these activities. In addition, new responsibilities have been placed on the Corps with regard to: (1) preparation of Flood Plain Information (FPI) reports in cooperation with the Flood Insurance Administration; (2) preparation of

FPI "companion studies", which evaluate a broad spectrum of basin water management activities and (3) the authority to issue dredge and fill permits for activities in wetland areas. Currently, the Corps is undertaking a water supply study of South Florida which is designed to look at future water demands and options for meeting them. A draft report on this study is expected in 1985.

Geological Survey

Responsibilities of the U.S. Geological Survey (USGS) are of an advisory and research nature, but investigations conducted by USGS staff have been beneficial in all areas of water resource planning and management within the District. Such investigations have included evaluation of water supply problems; evaluation of saltwater intrusion problems; collection and analysis of baseline water quantity, water quality, and geologic data; and special in-depth studies. Currently, the USGS is conducting a study of the hydrogeology of the lower east coast Biscayne Aquifer. The results of this effort, expected in 1985 or 1986, will be particularly useful in making determinations of groundwater allocation for water supply in the southeast coastal area.

Environmental Protection Agency

The Environmental Protection Agency (EPA) is responsible for administering programs concerning wastewater collection, treatment and disposal; water supply treatment and distribution systems; regulation of point and non-point sources of pollution; hazardous waste management, including pesticide and herbicide control; and water quality management planning. Several programs in these areas have considerable impact on the District's: operation and maintenance of the Central and South

Florida project; water-use planning and related functions; and regulation of water use and surface water management. Furthermore, the link between EPA and DER is also a mechanism for bringing programs of the EPA into the South Florida region. The Wetlands Protection Act of 1984 will strengthen this linkage.

State

The State of Florida agencies which have the most influence on the operations of the SFWMD are the Department of Environmental Regulation (DER), the Department of Community Affairs (DCA), the Department of Natural Resources (DNR), and the Game and Fresh Water Fish Commission (GFFC).

Department of Environmental Regulation

The Department of Environmental Regulation (DER) has supervisory authority over all WMDs. It has primary responsibility at the state level for administering the federal programs under EPA jurisdiction. In addition, DER has responsibility for performing water resources planning and management on a statewide basis, either by accomplishing these tasks inhouse or by delegating such authority to the appropriate water management district. DER also has coastal zone management responsibilities which relate to water management in Florida.

Department of Community Affairs

The Department of Community Affairs (DCA) is the state land planning agency. In this capacity, it has an impact on all land, and therefore water, planning activities in Florida. Of particular relevance to the WMDs is DCA's role in the DRI and ACSC processes. DCA administers the Areas of Critical State Concern program. It makes recommendations to the Governor on candidates for the ACSC program and

once an area is designated, it can propose development regulations if the local government fails to do this, or if it does not propose adequate regulations for development of the area. The DCA also administers the Development of Regional Impact (DRI) process at the state level and oversees the results. DCA along with DER is also responsible for elements of the water-related Coastal Zone Management Program.

Department of Natural Resources

The DNR has responsibility and authority for management of state-owned lands, including those functions (except permitting of dredge and fill projects) formerly vested in the Board of Trustees of the Internal Improvement Trust Fund. These responsibilities primarily include administration of the Environmentally Endangered Land Program, acquisition of lands for outdoor recreation purposes, and development of a comprehensive plan to preserve and protect environmentally-endangered lands. In addition, the Marine Patrol Division has the authority to regulate fish and wildlife activities in coastal waters. DNR also has responsibility for managing the mineral and water resources of the state and manatee protection programs. It supervises activities of state and regional authorities relating to navigation improvements. The Division of Beaches and Shores administers a program which focuses on protection of the state's sandy beaches fronting the Atlantic and Gulf.

Game and Fresh Water Fish Commission

Statewide resonsibility for management of fish and wildlife resources for freshwater areas is vested in the GFFC. Commentary and assistance from the GFFC is requested whenever water management actions are expected to affect fish and wildlife, whether the action is a permit deliberation, proposed project, proposed rule, or other action.

Regional

In terms of regional planning which requires coordination with the WMDs, that done by the state's Regional Planning Councils is of most concern. In the SFWMD there are five Regional Planning Councils. They are: South Florida RPC; Treasure Coast RPC; Southwest Florida RPC; Central Florida RPC; and the East Central Florida RPC.

Regional Planning Councils

The RPCs are responsible for various activities which affect water management and supply. Some of their major functions include: coastal zone management planning; water quality planning under Section 208 of Public Law 92-500; water quantity planning, and assisting local governments in their water supply planning efforts; making recommendations on DRI proposals; participation in State Resource Planning and Management Committees; development of Regional Hurricane Preparedness Programs; and establishment of regional land-use policies.

Local

At the local level, there are four main categories of agencies that play prominent roles relative to water resources planning and management. They are: area planning boards and councils of local government; counties, municipalities; and special taxing districts and authorities.

Area planning boards function in a manner similar to the Regional Planning Councils, but they are not direct participants in the DRI process and in coastal zone planning. They have much greater authority in the areas of land use and comprehensive planning, however.

Counties are empowered to own, operate, and maintain water treatment plants and distribution systems; wastewater collection,

treatment and disposal systems; and surface water management systems. In addition, county governments have great authority in the area of comprehensive planning. However, not all of the counties within the District have exercised this authority to the same degree. Municipalities functioning within the District are empowered to provide essentially the same services as counties. As with counties, not all municipalities have exercised their authority consistently.

There are numerous taxing districts and authorities created by circuit courts or by special acts of the Legislature which affect water management in the District. These include water management districts formed under chapter 298, Florida Statutes, to provide drainage and irrigation services to agricultural operations and, to some extent, large-scale residential developments (land sales activities, for example). Other special authorities which have begun to play increasingly more important roles, especially in terms of operation and maintenance of surface water management systems, include improvement districts, new community districts, property owner's associations, and cooperative associations, each with varying degrees of capability. An example of an entity having comprehensive authority provided by special legislative action is the Loxahatchee River Environmental Control District, created in 1971. The ENCON is authorized to own, operate, maintain, finance, and regulate water supply, wastewater treatment and disposal, and surface water management facilities.

Several county health departments, acting in accordance with agreements with DER also have responsibility for regulation, and the construction and operation of potable water and wastewater facilities.

Some surface water management facilities are also under their jurisdiction.

Interest Groups

Many interest groups voice their concerns about water and other growth management issues in the SFWMD. Some of these groups are highly parochial, while others display a broad interest in all issues of importance in the region. These special interests, regardless of their biases, must be heard, and to the extent feasible, their views considered in planning and management processes. Examples of such groups are: League of Women Voters; Sierra Club; Everglades Protection Association, Inc.; West Dade Acres Homeowners Association; Lime-Avocado Trustees; Florida Defenders of the Environment; Audubon Society; Florida Farm Bureau Federation; Florida Citrus Mutual; The Florida Federation of Women's Clubs; Florida Water Well Association; and Chambers of Commerce.

WAYS IN WHICH THE SFWMD EXERTS ITS INFLUENCE IN GROWTH MANAGEMENT PROCESSES

There are many avenues a WMD can follow in influencing growth management processes. Principal ones used by the SFWMD are summarized in this section. They are then put in the context of the District's performance and incorporated in recommendations for the future in the following section and in Part III of the report.

Data Collection, Interpretation, and Reporting

All decisions are based on information available to the decision-maker. This information can range from intuitive feelings to hard data describing the system of concern. The Districts are well suited to building the comprehensive data base needed for planning, policy

setting, and management. Important steps in this process are: identification of the type and frequency of collection of baseline data; interpretation of these data in the context of the need for their use; and reporting, or otherwise making available, the data in a format useful to the designated clients.

DRI Reviews

The Development of Regional Impact Process gives the Regional Planning Councils the principal role in evaluating development proposals. In making their reports and recommendations to the local governments, the RPCs must take into account the impact of each proposal on the environmental and natural resources of the region, and on water supply and waste disposal. An agreement between the SFWMD and the RPCs within its boundaries provides that the District prepare detailed reports on the water management aspects of all DRIs as requested by the RPCs. These reports provide guidance for growth management, but they are largely reactive in nature.

Participation in the Areas of Critical State Concern Program

An ACSC designation may be made for (1) an area containing or having a significant impact upon environmental or natural resources of regional or state-wide importance; (2) an area containing or having a significant impact upon historical or archaeological resources of regional or statewide importance; or (3) an area having a significant impact upon, or being significantly impacted by, an existing or proposed major public facility.

When an area is nominated as a potential ACSC, the Department of Community Affairs evaluates the nomination to determine if it meets the

above criteria, and makes a recommendation to the Governor. Before a formal Area of Critical State Concern designation can be made, Chapter 380 requires that the Governor appoint a Resource Planning and Management Committee for the area. These committees, which bring together local government officials, state and regional agencies and special interest groups, emphasize voluntary intergovernmental cooperation to analyze problems in the study area and prepare resource management plans addressing growth management issues. The District is represented on Resource Planning and Management Committees for its region. In this capacity, the District is able to influence management decisions for these critical areas in a positive, active sense.

Developing Rules

Upon passage of a law affecting an agency, or by administrative assignment of mission to an agency, it is necessary for that agency to develop rules by which its operations will be governed. These rules are particularly important in regulatory and enforcement functions. Clear and workable rules not only improve the chances for a successful program, but they also offer opportunities for guiding those faced with complying with the rules. The SFWMD has numerous rules that relate to its functions and many of these are also related to growth management programs and practices. Proceedings held for the adoption, amendment or repeal of a District rule are conducted according to the provisions of chapter 120, Florida Statutes. Rule-making proceedings are initiated by the District on its own initiative, on the petition of a person regulated by the District, or on the petition of a person having a substantial interest in a District rule.

Issuing Permits

The 1972 Act and subsequent legislation provides for the regulation of consumptive use of water, well construction, surface water management systems, artificial recharge, utilization of works or land of the District and water management systems on bonafide agricultural lands. Except for artificial recharge and agricultural water management systems, primary regulatory authority resides in the Department of Environmental Regulation with direction to delegate the authority to the water management districts to the maximum extent practicable. The review of applications for permits is another tool the WMDs have in growth management, but again as in the case of DRI reviews, it is mostly a reactive procedure.

Reviewing Comprehensive Plans

The WMDs have been assisting local governments in their planning efforts for many years. The SFWMD has been represented on Technical Advisory Committees for local government planning efforts and its staff has reviewed and commented on the comprehensive plans developed by the local governments in its region. The transfer of information in this process has been spotty, however, and the review mechanisms in place are mostly reactive in nature. Because the local government comprehensive plans are the foundation for what happens in the South Florida region, the planning process is a key entry point for influencing actions to be taken that will affect the region. Efforts to improve coordination between local government planners and WMD staff should be given a high priority. More will be said about this later.

Direct Participation in Planning Processes of other Agencies

The WMDs are direct participants in some planning processes not under their jurisdiction. For example, they are participants in the development of a State Water Plan and in developing plans for potential Areas of Critical State Concern. Such roles offer the maximum opportunity for the WMDs to be effective partners and to inject their views with some degree of authority. Obviously, such direct intervention can be a powerful growth management tool.

Internal Planning

The District's own planning processes are under its direct control, and these can be strong instruments for affecting growth management in South Florida. Carefully developed regional water plans can serve as the basis for providing the information needed to assist counties, municipalities, and regional planners in their tasks. If done in a timely and objective manner, and laid out in terms that others can understand and relate to their missions, such plans can be an effective path toward more actively influencing what other agencies do.

Development of a State Water Plan

The 1972 Act called for the development of a State Water-Use Plan and a Florida Water Plan. The 1984 Florida State and Regional Planning Act also called for a State Water-Use Plan. While DER has responsibility for preparing the plan, the Act specifies that the WMDs are to advise and assist in drafting those portions of it that are applicable to their districts. The first attempt at a State Water Plan was unsuccessful, but if this one meets its objectives, it will be largely due to the efforts of the WMDs. Furthermore,through this vehicle,they have the

opportunity to be very influential in the formulation of growth management policies for Florida that involve land-water issues. For this to occur, however, the plans must truly lay out critical issues, present workable options for addressing them, and display the impacts of proposed actions.

Analyzing Issues and Developing Options for Resolving Them

Special studies of regional issues can provide the information base for shaping policies and courses of action. The WMDs have the technical talent and resources to do this. The results of such efforts can be very productive (see the discussion of the Potomac River Interactive Simulation Model in Part III).

Participating in Advisory Panels, Study Commissions, Seminars, and Educational Processes

If the Nebraska NRDs belief that education of the state's people is a key to the success of their programs is accurate, then it is clear that all avenues of informing people about water problems and alternatives for their solution should be actively explored. The SFWMD is engaged in many of these, but opportunities exist for a more aggressive role.

One approach that has been taken deserves some further comment. It is exemplified by the use of a technique called an American Assembly. One such assembly took place in February 1984. It was entitled, "Directions 84: Charting the Course for Palm Beach County." Its purpose was to bring together a diversity of interests and talents to consider directions that could be taken in Palm Beach County to improve growth management processes. The assembly suggested several options for

growth management strategies and institutional approaches for implementing these options. While there was no recommended alternative, the exercise was considered useful in developing a forum for future coordinated efforts and as a demonstration of one approach for formulating alternative courses of action.

Research

The solution of some problems simply requires bringing to bear information already available. In other cases, more must be learned before effective action, sometimes the right action, can be taken. The WMDs with their elite technical staffs and analytical capability are in a position to carry out both in-house research and contract research. The key to productive research for action agencies such as the SFWMD is for it to be completed before decisions must be made and for it to be translated into understandable and implementable terms.

Public Relations

Good public relations are fundamental to the successful operation of any agency that must deal with land or water resources. They are also closely allied to educational processes. The SFWMD, through its Resource Coordination Department, is involved in carrying out a strong public relations mission. It is important that adequate resources be provided to do this job right.

Systems Operation

The operation of water resources systems, whether they be water supply or flood control and drainage, can be performed in a manner to affect regional growth. This is not a major growth management tool, but it can play a role, given the right circumstances.

Construction, Maintenance, and Replacement of Facilities

Decisions to build or replace facilities affect development which might be dependent upon them. The C-51 drainage basin issue is a case in point. As in the case of systems operation, this is not a front-line approach to growth management, but it is one that can be very effective. It certainly can be a device for limiting or discouraging growth.

HOW WELL IS THE DISTRICT PERFORMING ITS PRESENT GROWTH MANAGEMENT ROLES?

How well the District is meeting its present growth management obligations and what it is doing to ensure their success are reviewed in this section. The District's own analyses, critiques of performance by others, and this writer's assessment are included.

Internal Analyses and Recommendation

Since the early 1980s, the SFWMD has commissioned several studies which bear on its role in growth management. They relate to areas of: local government assistance, industrial siting, flood plan management, and groundwater.

Local Government Assistance Task Force Report, 1984

Recognizing that in the first round of review of local government comprehensive plans the WMDs generally failed to provide adequate assistance to local governments, and that greater input would be required in the future if wise land-water management decisions were to be made, the SFWMD formed a Local Government Assistance Task Force. This Task Force was charged with: defining the District's role in providing assistance to local governments; and indicating how this role

should be carried out. In carrying out its charge, the Task Force addressed several questions. They were:

-- Does the District really want to assist local governments in their growth management efforts?

-- If the answer is yes, then what types of assistance should be provided?

-- Is the District interested in water resource protection, water resource development, or assistance concerning economics of water resource and related projects (water supply, drainage, wastewater, and solid waste)? Alternatively, is the District interested in dealing with combinations of these to varying degrees?

-- How important are these activities relative to other projects underway or planned?

-- What strategy should be employed to provide this service?

-- What type of internal process/organization approach should be used to implement the selected strategy?

Consideration of these led to the following recommendations:

-- Integration of land and water resource planning and management is necessary in order for the District to accomplish its water resource objectives and comply with Florida Statutes. A stronger commitment (policy and resources) to local governments and regional planning councils to provide water resources information and analyses is recommended to accomplish this integration.

-- Local government assistance should be concentrated in providing an assessment of water resources so that local land use and water management objectives are fully compatible and complementary with District plans, goals, and objectives.

-- The District should provide information and evaluations to local government. There is a need to provide water resource assessments on a hydrologic basin basis to guide local governments in the areas of water quality protection, ground-water development, and the economics of water conservation, reuse, and alternative sources of water supply.

-- Local government assistance should have a high priority in the District. This assistance should provide focus and direction for the District's planning and regulatory efforts. Priorities should be established concentrating on problem areas and areas of greatest potential benefit.

-- It is recommended that the District's evaluation of formally submitted local government comprehensive plans, regarding water resources related elements, be submitted to the Executive Council and Governing Board for consideration. Proposals involving significant policy issues, as determined by the Executive Council, should be submitted to the Governing Board for consideration.

-- For the environmentally-sensitive areas of the District (Kissimmee River Basin and areas tributary to Lake Okeechobee, the Water conservation Areas, Big Cypress Reserve, and Everglades National Park), a different mechanism could be required to address water management and land-use conflicts since there are significant regional, state, and national interests involved. Entities such as the Kissimmee-Okeechobee-Everglades Coordinating Council could be used as the focal point to resolve land use and water management conflicts in these areas.

-- The responsibilities for carrying out the Task Force recommendations were to be assigned as follows:

Resource Coordination Department - Develop priority list of counties; handle external contacts, consensus building, and conflict resolution; assume the lead role in negotiating tri-party agreements involving the WMD, counties and affected RPCs; and acquire permits for major projects resulting from assessment reports.

Resource Planning Department - Perform county level water resources assessments; coordinate activities with local government and PRC planning staffs; and develop followup water management plans.

Resource Operations Department - Implement changes in the C&SF Project operations resulting from assessment reports; and design and construct appropriate projects.

Executive Council - Approve county priority list; approve tri-party agreements; approve county assessment reports; approve impact assessment reports; determine nature of Governing Board

involvement; and determine coordination responsibility for actions related to ACSC programs and Resource Planning and Management Committees.

Industrial Site Permitting Task Force Report, 1984

The South Florida Water Management District (District) is responsible for protecting the quantity and quality of the water resource. Its role in water quality protection is limited, but the DER, pursuant to Section 403.812, Florida Statutes, has delegated responsibility for regulating stormwater quality to the District. Additional groundwater quality responsibilities were delegated to the District by interagency agreement with the DER in accordance with the Water Quality Assurance Act of 1983.

As a result of these delegations, the District's concern about protecting surface water and groundwater from the adverse impact of industrial sites has grown. As a result, a Task Force was established and charged with evaluating whether industrial land uses pose a threat to the water resources of south Florida and, more specifically, if the District's regulatory procedures for industrial sites provided adequate protection from adverse impacts. The task force concluded that industrial activity was the potential source of a variety of pollutants and that since many aquifers have a high water table and consist of permeable surficial sands, they may be easily contaminated. The Task Force believed, therefore, that the current surface water management permit program was inadequate to adequately protect this vulnerable water resource from industrial activity.

The Task Force made several recommendations which it believed would improve the chances for environmentally acceptable industrial sites to be chosen. They included:

-- Modify the regulatory process to take into consideration several key factors:

  - Generally locate industrial sites away from existing or potential water supplies.

  - Design industrial parks to cluster activities with high pollution risk in separate or separable drainage systems.

  - Design stormwater drainage systems to retain water above ground to the extent possible. Incorporate control, containment and/or mitigation facilities for specific known pollutants to the extent possible. Septic tank systems should be prohibited at industrial parks.

  - Coordinate with DER on cases involving treatment, storage or disposal of toxic or hazardous wastes.

  - Require periodic submission of a tenant list as a special condition of the permit, with monitoring conditions to be specified on a tenant-by-tenant basis.

  - Include expiration dates on industrial park permits of from five to ten years of the date of permit issuance.

-- For administration of industrial siting permits, an adequate data base and review process for all special conditions must be provided, and this must be supplemented with increased inspection and enforcement activities.

-- The scope and nature of the problems associated with existing industrial sites, including design criteria to mitigate various types of pollution, are poorly understood and should be addressed by programs within the Resource Planning Department.

-- DER should be encouraged to pursue its responsibilities to regulate point source industrial discharges and control toxic and hazardous waste, including establishing an approved disposal site in Florida. The District should support increased resources for

DER to adequately cover its responsibilities in this area.

-- Agencies and governments responsible for land-use plans and zoning should be urged to locate industrial sites in areas of least potential impact to significant surface or groundwater resources. Assistance should be provided to locate these areas. Under the Water Quality Assurance Act, counties should be encouraged and assisted in selecting a potential site for toxic and hazardous waste storage or disposal.

Floodplain Management Task Force Report, 1984

The Floodplain Management Task Force was charged with responsibility for evaluating and commenting on the House Select Committee on Growth Management's PCB 84-12, entitled the Floodplain Management Bill, and with evaluating the District's floodplain encroachment criteria. It examined six issues during its deliberations. They were: the need for basin management studies; the need to reevaluate the criteria and formulas for allowable stormwater discharges; road protection criteria; stormwater quality; land-use management options; and the need for public education and involvement.

The general conclusion of the Task Force was that floodplain management should prevent any use or development of floodplain lands that would adversely affect the health, safety, or welfare of individuals, the community or the environment. A number of specific recommendations were made. They include:

-- The District should develop a sufficient data base to identify floodplains in terms of flood magnitude, duration, and frequency on a District-wide basis.

-- Interim studies should be utilized as a "stopgap" measure until basin-wide information is available.

-- A permit fee schedule should be established to defray the cost of permit processing, and those monies currently allocated to the permitting process should be diverted to basin studies.

-- The District should commence immediately to modify the allowable discharge formulas through a two-step process. First, a prorated share of the approved discharge capacity should be employed. Second, an allocation of total basin discharge should be developed.

-- Where the discharge facilities have been overallocated, the permits should be modified, if possible.

-- Gravity systems, requiring no human intervention, should be employed instead of pumped systems for residential projects.

-- The District should stress non-structural remedies.

-- The District should require periodic analysis of the components for stormwater discharges from permitted projects.

-- The District should actively solicit strengthening of Chapter 163, Florida Statutes, to require a Floodplain Element as part of the Local Government Comprehensive Planning Act.

-- The District, through the Department of Community Affairs, should support the concept of a State Plan, when appropriate. As part of the plan, regional (more than one county) floodplain areas should be identified.

-- The District should actively support the adoption of the model floodplain ordinance (PCB 84-12) as revised by District staff.

-- The District should commit its resources to developing a data base and basin management plan similar to that proposed in PCB 84-12.

-- Information results obtained through the basin management study process should be disseminated to public and affected private parties, to enable the public to better manage the risks inherent in floodplain use.

-- The District should better inform permit applicants of the rationale for certain criteria and special conditions.

-- The District should prepare an operation and maintenance manual for use by homeowners' associations or similar entities which are responsible for the permitted surface water management system.

American Groundwater Assembly Report, 1983

In March of 1983, an American Assembly on Groundwater was held in West Palm Beach to develop a consensus of opinion on the District's role in groundwater management and evaluate the effectiveness of its Regulatory, and Research and Planning Programs, in achieving groundwater management objectives.

The Assembly's deliberations apparently focused most on how to accomplish the goal of providing a continuous flow of data from one user group to another. An expressed need for more detailed hydrogeologic data was noted. While there were no specific recommendations produced by the Assembly, the following excerpts from their report reflect the tenor of their efforts.

> "Consensus - An increased role for the District in local, state and regional water supply planning processes is highly likely and may be inescapable. General consensus was that it is desirable that the District assist to at least the level of providing regional and long-term plans, guidance on selecting areas of study and discussions of alternatives. No consensus was reached on the exact limits of the District's role."
>
> "A more comprehensive system for review and comment on Comprehensive Plans (is needed). Acceleration of development of regional Water Management Plans and more detailed plans in critical areas (are needed)."

The following statement by one member of the SFWMD staff also suggests actions that might be considered by the District.

> "As a fundamental first step, the Water Use Division must design and implement a program to

> follow up and obtain data required by the limiting conditions. Of primary importance is water use, water levels and water quality. In some installations, aquifer performance tests are required. This type of data is extremely important. The results of this testing should also be compiled. The four types of data specified above are vital to the development of water management plans. Without this type of information, the development of a water management strategy is not possible."

Finally, the development of a unified groundwater data base and the identification of special problem areas as vehicles for improving water resources decision making in South Florida were generally agreed upon as focal points for future programmatic efforts.

Performance Views by State Agencies, Regional Planning Councils, Local Governments, Interest Groups, and Others

Since any fruitful growth management actions taken by the District depend largely upon the District's coordination and cooperation with a host of agencies, organizations, governments, and interest groups, the views of these entities regarding the performance of the District have relevance here.

State Agency Views

Views of those in Florida state agencies towards the performance of the SFWMD range from positive to negative depending on the issue. In general, the SFWMD is highly regarded by the agency personnel it must deal with. Nevertheless, there are areas that appear to be trouble spots and these are also good indicators of changes the District might consider implementing as it seeks a more definitive role in growth management. The following statements reflect concerns by the state

agencies and also point out some practices or policies that they believe facilitate coordination.

-- Good District-agency coordination is important. Several agencies have limited technical competence in water resources and they need back-up technical support from the WMDs.

-- WMDs should provide impact analyses to accompany permit documentation. Statements of need and proof of satisfaction of strict permitting requirements are often not adequate to permit proper evaluation of long-term consequences of proposed actions.

-- There should be more emphasis on water quality management. In particular, the implications of water supply, drainage, and flood control actions on water quality should be thoroughly evaluated and reported on.

-- When the issue is highly political, the WMDs tend to shy away from it and turn instead to technical considerations rather than matters of policy.

-- Many DRI reviewers believe that technical advice provided by the WMDs should be given a higher priority. It was noted that DRI reviews are often looked upon as a chore by the Districts rather than a useful role.

-- Better coordination between the SFWMD and DER, particularly on matters related to project planning, would be beneficial.

-- The WMDs are still too project-oriented. The notion is somewhat general that the WMDs believe that technical solutions (often structural) are the only real options. There is, however, an increasing recognition that the SFWMD has been moving away from this position and is broadening its perspective regarding the importance of environmental and social impacts.

-- The WMDs emphasize water supply and drainage in their planning and operating processes, and in doing so, neglect consideration of the environmental consequences of these actions.

-- Water Management Districts are not adequately providing the information needed by developers to realize their objectives. Thus, studies are duplicated and inefficiencies in use of funds and personnel result.

-- The WMDs understand the land-water relationships in their regions better than most agencies, but are not using this understanding to aid others as effectively as they could.

-- More emphasis should be placed on freshwater-salt water interfaces. WMDs are especialy well suited to undertake the needed studies.

-- The WMDs need more teeth in some of their actions so that their views will be seriously considered and incorporated in planning processes at all levels.

-- The WMDs should establish an effective liaison with the Governor's Office of Planning and Budgeting. Development of the state comprehensive plan, initiated in 1984, presents a timely opportunity for the WMDs to take an active role in formulating water policy at the state, regional, and local levels.

-- WMDs such as the SFWMD that has its own legal staff are easier to deal with than those that contract out for these services.

-- The collocation of regional agency personnel with the WMDs appears to have improved coordination between the participating agencies.

-- Coordination between the SFWMD and DER is greatest in the area of permitting. Improvements are needed relative to plan development, construction, and other areas.

Regional Planning Council Views

In general,the RPCs consider that the level of coordination between them and the SFWMD is good. There are occasions when staff viewpoints differ on technical matters, but on matters of policy, there seems to be consistency. There is some concern, particularly by the RPCs, about turf encroachment. The RPCs are generally opposed to the notion that a take-over of their responsibilities by the WMDs would be a wise move (a legislative proposal in 1984). This view is also shared by the SFWMD. Other views by the RPCs are reflected in the following statements.

-- The WMDs should place a high priority on developing meaningful regional water plans. The Water Use and Supply Development Plan was not specific enough to make it a useful instrument.
-- The District should be more receptive to criticism and accept it in a positive sense.
-- Requests for information from the District are responded to in timely fashion. The SFWMD has become more open in recent years.
-- The WMD should place more emphasis on estimating costs associated with the management alternatives that it presents.

-- There is a need for better understanding, especially in the DRI process, that the RPC region and the WMD region are not the same in areal extent and that what is of concern at one regional level might not be as important at the other.

-- The RPCs should play a more influential role in forecasting land use/water demands in WMD planning and regulatory processes.

-- A more formal mechanism for coordinating RPC-WMD activities related to Chapter 380 Committees is needed.

-- There appears to be some misunderstanding by third parties that WMD reviews of DRIs replace, rather than reinforce, the RPC's rules.

-- The RPCs believe they should have more opportunity for review of draft District reports on issues related to water quality.

-- The SFWMD should assist in defining and classifying surface/groundwater resource areas and in preparing management plans for these areas.

Local Government Views

Local governments in Florida prepare and adopt comprehensive plans pursuant to the LGCP Act of 1975. In this process, water supply and wastewater disposal issues are considered. Consequently, the need for cooperation between these governments and the SFWMD is easy to see. The extent of coordination of planning efforts is variable and depends partly on the expertise resident in the local government, the local

government's interest in comprehensive planning, and its willingness to seek assistance from the WMD. Comments by local government representatives relative to the role played by the District in their planning and regulatory processes follow.

-- The SFWMD has been an excellent resource in providing information when called upon to do so.
-- The WMD's advice on technical matters is important, particularly for those local governments that have limited technical expertise of their own.
-- The District has tended to focus too much on "engineered solutions" to problems. It appears that it's objective has been more to facilitate land use than to guard resources. This attitude seems to be changing, however.
-- Information provided by the District would be enhanced in usefulness and credibility if full details of the impacts of water development proposals were included.
-- The District should make more explicit the types of information it can provide and the nature of advice it can offer.
-- Monitoring of permitted actions has not been sufficient in every case to guarantee that the terms of the permit are met.
-- The SFWMD is in a better position to understand the issues and options for taking them on than most other agencies and consulting firms.

-- The WMDs should be the authorities for estimating water demands while the local governments should be the ones to project population trends.

-- WMDs too often react on a piecemeal basis and do not broadly look at the problem being addressed.

-- The WMDs should take more of a systems view. They should look at balancing long-term supply and demand for water and should identify the best and worst places for development.

-- The District should lay out more options for solving problems so that better decisions can be made by local government officials.

-- The WMD shows some reluctance to aid in forcing policy decisions that must be made.

-- Limiting conditions need determination and reporting to define constraints on growth.

-- The SFWMD does not give due weight to environmental issues. Wetlands outside of the Central and Southern Florida Project are a case in point. Wet prairie management is another area of concern.

-- Reports prepared by the District are sometimes too broadly based and cannot be translated into use at local levels.

-- The environmental staff should be developed to incorporate some element of environmental advocacy.

-- More emphasis should be placed on the development of standards and criteria. Standards for lakes and ponds is a case in point.

-- District staff should be more concerned about identifying points of conflict and bringing them to the attention of the Governing Board.

-- Translation of information into policy guidance modes and defining minimum standards should be high priority considerations by the SFWMD.

-- The District should play a more forceful role in establishing and encouraging conformance with regional water budgets.

-- There should be more emphasis on setting limits on local governments relative to water supply. Too often the approach has been for the District to ask what is needed and then indicate how to meet the need rather than for it to take an active position in defining the need.

-- There is an urgent need for more and better information on both the quality and quantity aspects of groundwater. This information should be translated into recommendations for water policy.

-- The WMDs are the only agencies that have the geographical perspective to deal with the local governments.

-- The Governing Board should be bolder in furthering its philosophies. Tough policies should be proposed and

costs associated with implementing them pointed out explicitly.

-- The District needs a mechanism for ensuring that its policies are put in force.

While all of the above comments are not based on consensus, most of them were consistently expressed by those interviewed.

Interest Group and Other Views

Interest group views vary from complimentary to negative depending on the group and its perspective. In general, it can be said that these groups recognize that there has been a transition in the last few years from a "superiority attitude" to one of actively seeking and pursuing a more open position. It is acknowledged that the SFWMD is now much more publicly oriented. The greater concern shown about the freshwater-sea water interface is an indicator of this broadening of outlook. There are feelings, however, that the District is not firm enough in its water management role, does not adequately embrace the "whole systems's" philosophy, and has not satisfactorily taken on the groundwater issue.

All of the views presented above provide useful guidance for considerations regarding changes in philosophy and/or functioning of the SFWMD. The overall attitude of those consulted was very positive toward the District. And while there were many criticisms, these were largely constructive in nature. Furthermore, there was considerable evidence that supports a more positive role by the District in its own field of expertise.

A Functional Assessment

In the performance of its duties, the SFWMD engages in numerous activities which may be categorized along functional lines. One set of such functions is: flood control and drainage; water supply; water quality management; comprehensive water management; information transfer; and intergovernmental cooperation and coordination. Some comments on performance in these areas follow.

Flood Control and Drainage

Historically, flood control and drainage gave birth to what is now the District. The huge Central and Southern Florida Flood Control Project still dominates the District in scale of physical works, budget, and affect on the environment. In the early years, the District's focus was mostly on a single objective -- providing flood control and drainage for South Florida. Consequently, the nature of the engineering works designed to meet this objective is what one would expect. Furthermore, a successful excursion into this area could not have taken place without many of the elements that were eventually provided. In terms of flood control, the District has probably done as well as any agency could, particularly if performance is evaluated in terms of desires of people in South Florida in the early years of settlement. The sophisticated mode of operation of this system is a credit to the District. Its willingness to relook at the system in view of contemporary social goals is also to its credit. Indications are that future efforts in flood control and drainage will be tempered by the impacts they would have on prospective development and the consequences they would hold for the environment. There is no doubt that some mix of measures, including

structural ones, will always be needed for flood management purposes, but the implementation of such measures should be the result of a careful screening of alternatives and a review of whether or not drainage and/or flood control should be practiced at the locality in question. Evidence suggests that the District is mindful of these cautions and that any forthcoming efforts will be designed accordingly (C-51 case is an illustration). Measured in terms of the times, the performance of the District in drainage and flood control is hard to argue with. Unfortunately, the tendency is often to judge yesterday's decisions (which were based on the philosophies of that time) on the basis of today's point of view.

Water Supply

The SFWMD is not in the business of supplying water directly to users, but it is in the water development business and has the authority to produce water (with certain constraints) if requested to do so. The District is also committed to protecting existing water supply facilities through proper management and regulation. Through its planning functions, it has also been active in evaluating water supply alternatives for South Florida. Options explored include: conservation; regulation and allocation; wellfield development; backpumping to conservation areas; forward pumping; additional water storage; demineralization; deep aquifer storage; reuse of wastewater; weather modification; desalination of sea water; adding water conservation areas; use of thin films over storage areas; and water importation. Recommendations on these approaches were incorporated in the 1978 Water Use and Supply Plan for the District, but they were very

general and not tied to specific courses of action. Currently, several of these alternative means for meeting water supply are being studied in more detail, wastewater reuse, for example.

Another example of the District's involvement in water supply is its cooperative effort with the Corps of Engineers on the Corp's South Florida Water Supply Study. The South Florida Water Management Model (discussed in Part III) is being used to explore problems of water supply and allocation and will make use of the Corp's projections on demand. Through its regulatory program (consumptive-use permits), the District is also in a position to influence, and to an extent, control new developments.

Many of these efforts are traditional in nature, but the South Florida Water Management Model or spin-offs from it could become a powerful tool for evaluating water allocation alternatives and their impacts on the environment in South Florida (see Potomac River Basin Model discussion in Part III). The District has done a commendable job in looking at water supply issues, given its previous heavy focus on drainage and flood control. But in the future, it will have to assume a greater role in this area as inexpensive good quality water becomes more scarce and heavier demands on water use for environmental purposes materialize. Furthermore, it seems clear that the district should be in the business of conducting operational level studies in subregions or subbasins to guide the water supply planning efforts of its constituent local governments. More will be said about this in Part III under recommendations.

Water Quality Management

Although the Water Resources Act of 1972 focused mainly on issues of flood control, drainage, water allocation, and permitting related to these functions, the authority of the Districts to engage in water quality activities is implicit in Section 373.084 which empowers the Governing Board to ... Make surveys and investigations of the water supply and resources of the District ... in Section 373.103 which states that the Board may be empowered to ... Prepare in cooperation with the department that part of the state water use plan applicable to the District ... and in Section 373.036 which states that an element of the state water use plan includes ... The preservation and enhancement of the water quality of the state ...

Water management decisions made by the District must include water quality considerations. This view was substantiated by an Attorney General's Opinion in regard to the water quality authority of water management districts under Chapter 373, F.S. Further, Chapter 373 clearly states that the water quality standards and stream classifications of the DER will be meshed with the water use plan for the state to form the Florida water plan. Thus, any water use regulations developed and implemented by the District for the control of ground- and surface-water withdrawals and discharges must take cognizance of applicable water quality standards.

The District has gone about its water quality activities mainly through its programs in planning and research and evaluation and permitting. Since both DER and the District share responsibility in

several of these areas, the District has developed a strategy to minimize duplication of effort between the two agencies.

Water quality investigations have been conducted of the surface waters under the District's jurisdiction to determine existing conditions and problem areas. Exchange of data and information between agencies is on an informal cooperative basis. The District has also been developing a data base to determine rainfall-runoff-quality relationships for various types of urban and agricultural land uses, both through use of inhouse staff and through cooperative arrangements with the U.S.G.S. Data and information derived from these research efforts is being utilized in the District's major planning and regulatory efforts. Planning activities addressed have included (a) under PL 92-500: 303 (e) basin plans and 208 (areawide waste treatment management) plans; and (b) the District's water use planning effort. Water quality impacts are also taken into consideration in several District evaluation and permitting processes, including (a) review of Developments of Regional impact; (b) review of rezoning proposals, in response to local government requests; (c) permits for consumptive water use under Part II, Chapter 373; (d) permits for management of surface water under Part IV, Chapter 373; (e) permits for artificial recharge; and (f) evaluation of sanitary landfill sites. Items (a), (b) and (f) are essentially advisory in nature since District evaluations of the proposals are submitted to the jurisdiction which has the authority for the land-use decision. However, certain elements related to water resource management of these proposals are subject to the District's permitting procedures later in the land development process.

Relative to permits for management of surface waters, two groups of permits are involved: point-source discharges (domestic wastewater treatment plants, industrial discharges, water plant discharges, and cooling water discharges), and non-point source discharges (urban runoff, agricultural runoff, dredge and fill activities, and runoff resulting from construction activities). The approach being pursued is to enter into an interagency agreement with DER which will stipulate that the District will review, evaluate, and sign off on point-source discharges, in terms of District policies and criteria for water quality control, prior to the issuance of a permit by DER. The District's permit would be issued for the quantity of discharge only, after a DER permit is issued. The District is also working with counties and municipalities to establish mutually acceptable drainage criteria and regulations for urban developments (to include measures for water quality control).

To the present, the District's efforts in water quality have been more in the nature of developing data for water quality evaluations, providing benchmarks for permitting processes, and identifying trouble spots for planning efforts than they have been to assess environmental impacts or develop specific regional or local water management strategies. Efforts at water quality modeling are not very advanced and the issue of pollutant transport in underground systems deserves much more attention. The issue of water quality management must become one of top priority in the very near future.

Comprehensive Water Management

The WMDs generally have broad authorities related to water, but they have not exercised them anywhere near the limit. There are many reasons for this, some of which are political. Nevertheless, the management of Florida's waters, or any other state's water for that matter, is not going to be efficient if it is done on a fragmented, piecemeal basis. The SFWMD has generally had an integrated approach to flood control and drainage, but in areas of water supply and water quality management, its activities are fragmented and related mostly to planning, permitting, and advising. Since the District does not have explicit authority to determine how all of its regional waters are used and disposed of, it cannot act as a water manager in the same sense as the British Water Authorities, but it can develop operational management plans and, through channels available to it, influence water policy to a far greater extent than is now being done. If this were done, the District's influence in growth management processes would be enhanced significantly. This issue is addressed further in Part III on recommendations.

Information Transfer

The SFWMD has done a good job at disseminating information, providing advice, and carrying out various public service programs aimed at educating a broad audience relative to water and associated resource management issues in South Florida. Mechanisms it has employed or is employing include:

-- Identification of key individuals, organizations, elected officials, and agency representatives interested in, and/or concerned with, SFWMD projects;
-- Preparation of issue papers;
-- Periodic briefings of Board members, Executive Director, and District staff;
-- Preparation of status reports;
-- Written and oral presentations to Chapter 380 Committees relative to District activities, positions, and responsibilities;
-- Keeping abreast of existing and emerging issues through personal contact with state and local agencies and officials and by regular review of media articles and programs, interest group periodicals and newsletters, and professional journals;
-- Establishing a statewide network of agency representatives, professional consultants and special interest groups, and developing working relationships with each, based on mutual respect and trust;
-- Developing an information manual for each county within the District;
-- Providing a responsive forum for public involvement;
-- Communicating the District's policies, goals, and positions to the public;

-- Interacting with individuals, organizations, and interests where specific water resource issues and concerns are involved;
-- Preparing brochures dealing with current issues or areas of concern;
-- Producing audio-visual documentation and information presentations for the Governing Board and employees; and
-- Providing information to the District decision makers via informal vehicles and through analysis of media coverage, meetings, telephone contacts, and through the IMPACT system of computerized information analysis.

The District's programs in public relations and information dissemination have generally been exemplary. There are, however, opportunities to transfer technology so that it will more strongly influence policy than has been done in the past. The Potomac River approach discussed in Part III illustrates this technique. It is one the District should consider more extensively in the future.

Intergovernmental Cooperation and Coordination

As has been pointed out several times in this report, the District must coordinate its activities with numerous state and federal government agencies, local governments, regional councils, and special interest groups. In recent years, its track record has been good in this regard. Comments by various organizations tabulated earlier bear this out. It is clear that the need for better coordination is recognized by the District and that it has taken upon itself the implementation of various activities for facilitating this process.

Experiences with collocation of state agency personnel have generally proven positive, and the District's emphasis by its Department of Resource Coordination to provide a better interface between the District and others is commendable. Still, coordination is not easily achieved. For years the federal government has sought better ways to bring it about, but the key has yet to be found. In some respects, looking for the perfect process is like seeking the Holy Grail. Clearly, the District has probably done about as well at coordinating its activities with those of others as can be expected. Its obvious concern over how to improve its linkages with others is meritorious.

The following statement by John Wodraska, in a sense, summarizes the current position of the SFWMD on coordination.

> It's in our best interest to establish as many constituencies as we can. We worked with our 137 units of government during a drought by going to them individually and saying we've got a collective problem. The comments we heard were: "If we can do this in a partnership as opposed to you regulating us and if we can address these problems together, we're going to be much more receptive to it."
>
> Local government is one of our strongest constituencies. Reach out to these people. It's an enormously powerful function of government in Florida, and they're not going to come to you. You have to assure them that you have a service they can rely on.

Other Functions

The SFWMD is engaged in many other activities that have a bearing on growth management. These include environmental enhancement and fish and wildlife protection. And while these duties are very important in their own context, they are not as direct a vehicle for influencing growth management as some of the District's other functions.

PART III - RECOMMENDATIONS ON THE ROLE OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT IN GROWTH MANAGEMENT

INTRODUCTION

Part III of the report is subdivided into three main sections: information as the key to success in growth management; options for growth management roles for the SFWMD; and recommendations for better performance in growth management by the District. Some observations about the future are also made.

INFORMATION - THE KEY TO DEVELOPING EFFECTIVE GROWTH MANAGEMENT STRATEGIES

Setting the Strategy

Developing sound growth management strategies requires:

-- A clear definition of politically, socially, economically, and environmentally feasible alternatives;

-- Evaluation of these options in understandable terms, expressing pros and cons, explaining impacts of exercising or not exercising the options, and considering intangible values; and

-- A process for making decisions.

These components cannot and should not be carried out by the same actors operating from their particular vantage points. The decision-making process is political and should be conducted in that arena.But decisions should be informed, and that is where the technical expertise of the WMDs is important. WMDs must be able to translate water managmenet (growth management) alternatives into clear and comprehensive terms. Good decisions are based on good information. Related to water, the water management districts are the elite. They, more than any other

institution, have the capability of providing information needed to support planning and management processes statewide. This should be a principal role of the Districts in fulfilling their growth management obligations. As noted by Light, ... "Information is becoming the dominant source of power in agency decision making."

Mechanisms for Injecting Information into Growth Management Processes

The mechanisms for transferring information are numerous. They include: assembling and disseminating basic data; reviewing DRIs; screening applications for permits; reviewing comprehensive plans; participation in planning processes; analyzing problems and suggesting options for solving them; participating in advisory panels, study commissions, seminars, and various educational processes; and research. The SFWMD exercises all of these approaches to some extent, but unfortunately the manner in which they are used is largely reactive rather than active. For example, plan review, DRI review, and the processing of permits are reactive, and while they are effective mechanisms, they are not nearly as significant as up-front approaches that deliver information in the formative stages of planning, management, and regulatory endeavors. While it can be argued that the Districts should not usurp local or regional planning roles, it can also be argued that mutual efforts that permit the Districts to provide the best information available to those actively engaged in these processes should be sought and nurtured. Avenues for this need further exploration, but it should be understood that all parties must have a cooperative attitude for any approach to be effective.

Analytic and Innovative Approaches to Conflict Resolution

Particularly promising is the potential for devising good growth management policies through the use of analytic techniques and the design of innovative strategies. Some examples of such approaches include:

-- The Potomac River Interactive Simulation Model;

-- The Nebraska Adaptive Environmental Assessment Model for the Platte River Basin;

-- The Martin County - SFWMD Resource Planning Assistance Program;

-- The South Florida Water Management Model;

-- The SFWMD - Palm Beach County - Village of Royal Palm Beach C-51 Proposal; and

-- The NWFWMD Middle School Educational Program.

Potomac River Interactive Simulation Model

An excellent example of how a fresh look at an old problem can produce results is the recent analysis (1979) of the water supply problems of the Washington, D. C. Metropolitan Area (WMA). The corps of Engineers,the States of Maryland and Virginia, the Interstate Commission on the Potomac River Basin, the Fairfax County Water Authority, the Washington Surburban Sanitary Commission, the Metropolitan Washington Area Council of Governments, and other key actors worked hard and diligently to provide a setting for coordination of river management policies that would improve the water supply situation for WMA and work to the benefit of all. An exercise in mutual cooperation was complimented by a fresh new technical approach. The direction taken was

that of improved systems management rather than structural development. The principal elements of the approach include:

-- Combination of optimization and simulation techniques to provide practical rules for operation of the water supply system;

-- Large-scale use of the National Weather Service River Forecast System based on a soil moisture accounting model and its direct integration with reservoir operations;

-- Development and implementation of a technique to predict water demand and the application of that technique in water resource system design and operation;

-- Combination of distribution analysis and hydrologic modeling to develop operating procedures for a complex water distribution system including many independent water suppliers;

-- Use of risk analysis to identify the start of potential droughts and to quantify the risks of continued drought;

-- Use of "drought games" to test and improve water supply operating procedures and to illustrate the use of those procedures to decision makers.

The benefits of coordinated water management were found to be quite large. If all the facilities of WMA water supply were independently

operated, the sum of the yield would be about 620 MGD. The analysis showed, however, that joint operations could achieve yields of better than 825 MGD from the same system. This is more than a 25 percent increase in yield and about equivalent to the combined yields of several additional reservoirs that were under consideration. Construction costs for these reservoirs, close to a quarter of a billion dollars, could thus be saved and many heated environmental fights over additional reservoir construction avoided.

It was not an easy task to implement a plan to provide the needed additional water supply for the Washington Metropolitan Area. Complex engineering, social, economic, environmental, and political problems had to be solved. For years, structural proposals of various sorts had been suggested, but these were found to be unacceptable on many grounds. The fresh approach presented here was needed; it broke away from tradition and focused on what could be done in the face of prevailing constraints. It grew out of advances in water resources engineering analysis that have developed since the early 1960's.

Modern techniques of systems analysis -- linear programming, synthetic hydrology, statistical analysis, hydrologic modeling, and computer simulation were merged to produce a predominantly non-structural solution to the water supply problem. As a result, a problem that had been without resolution for almost 30 years was taken in stride. What had appeared to be an impasse in regional cooperation was obliterated. Furthermore, over $200 million was potentially saved compared to previous alternatives. The environmental impact of the solution was minimal.

This example proves that better management of water resources systems can be achieved using sophisticated methods of analysis. Difficult technical/institutional water resources problems can be resolved in this manner at low economic and environmental cost. The implications of approaches such as this for addressing growth management problems is clear.

Nebraska Environmental Assessment Model for the Platte River Basin

Substantial conflict exists over water management options for the Platte River Basin in Nebraska. A simulation model incorporating dimensions of water quantity, water quality, economics, environment, and regional interests was devised as a means for evaluating alternatives and providing information for arriving at acceptable compromise solutions by interested parties.

The model was developed in a workshop setting employing the Adaptive Environmental Assessment process, one that involves decision-makers and interest groups in the actual model structuring. The model combines hydrologic, agricultural, municipal, wildlife, and economic submodels. It does not place a dollar value on all of the impacts of allocation schemes or management alternatives, but focuses instead on delineating those impacts in units in which interest groups commonly value them. The idea is to clearly display tradeoffs under the assumption that it is the role of the policy-making process to decide which tradeoffs are "best."

Workshop participants included individuals having decision-making roles in federal and state agencies, municipal governments,

environmental interest groups, regional institutions, utilities, and farmers' and ranchers' organizations. The modeling process was developed specifically for conflict resolution. Objectives included analyzing the consequences of various water management options and developing a common understanding among decision makers and interest groups of the behavior of the Platte River System. It is expected that tradeoffs between flows withdrawn for irrigation and flows maintained in the river for environmental purposes will be evaluated and that ultimate decisions on flow allocation will stem from information provided by the model. The modeling process successfully promoted an understanding that one dimension of the Basin cannot be changed without affecting other dimensions.

While it is not yet known (1984) whether the process was successful in forging workable compromises on water management, the model is being improved further and is being used to test compromise scenarios. It is believed that any success achieved by this process will be due mostly to the extent to which those decision-makers who would have to rely on the model understand both the model's structure and its strengths and weaknesses.

The Martin County-SFWMD Resource Planning Assistance Program

This cooperative joint venture is designed to provide the Martin County Board of County Commissioners with an analysis of water availability and will provide water resources planning recommendations to be used for the county's future growth management strategies. Elements of the program include: hydrologic/hydrogeologic analyses;

land use and population studies; water demand analyses; engineering cost estimates; water availability analyses; and analyses of water availability versus demand. This program is to be a model for the implementation of section 373.0395 of the Florida Statutes. It is expected that this cooperative undertaking will ensure that important water resources areas are maintained in a viable condition and remain available for present and future water supplies. What is of interest here is not the techniques used in the study, which are not unusual, but the fact that this is a promising prototype model for resource planning and coordination in South Florida. This exercise, involving the District and a county government, if successful, can serve as a model for coordinating other joint planning efforts between the District and various scales of local government planning agencies.

The South Florida Water Management Model

This model was developed to assist in the evaluation of options for water management in South Florida. The model can simulate the integrated system of surface and groundwater resources present in South Florida. It is an analytical tool for addressing regional water management issues related to changes in the design or operation of the works of the Central and Southern Florida Flood Control Project. The model can provide answers to regional water management questions for which there is no acceptable alternative means of analysis. Models such as the South Florida Water Management Model have great potential for providing guidance for decision makers. How well they fare in this role depends, however, on the degree to which their results are made understandable to prospective users, and to the degree of acceptance

these users display toward such approaches. User involvement along the way is the key to success.

The SFWMD-Palm Beach County-Village of Royal Palm Beach C-51 Proposal

This innovative approach to water management revolves around an interest on the part of the several parties to reconcile land use and drainage considerations in the C-51 area so as to ensure that water management facilities to be provided are used for their design purposes and do not become a vehicle for a level of development not conforming to present plans for the area. A three-tiered approach has been suggested. Its elements are: a comprehensive plan; an interagency agreement; and a basin rule. There are legal issues regarding the feasibility of this approach, but if it can be brought to fruition, it will serve as a model for other cooperative arrangements to facilitate the achievement of land use and water management objectives. The notion of negotiation rather than confrontation appears to be the foundation of this proposal, and it has much to recommend it.

Middle School Education Program of the NWFWMD

Consistent with the NWFWMD's view that education is an important component of growth management activities, it has undertaken the design of a school program to teach students some of the issues that underly good water management. The District's education program is being developed for use in the middle school, grades six through nine. It is being designed to complement the Earth Science and General Science courses already being taught in the middle schools. All course

materials will be provided by the Water Management District in a self-explanatory, easy-to-implement format. In addition, the District plans to provide in-service training for teachers. The course content is expected to include: physical properties of water; water uses; political, social, and economic issues related to water; and the water history of Florida. The District proposes to supply teachers' guides, filmstrips, posters, booklets, and other teaching aids.

Identifying Issues, Designing Alternatives, and Evaluating Their Impact - The Bottom Line

If information is the key to effective water management (growth management), then the issue is one of three parts: what information; how to impart it; and who to impart it to. Even the question of what information is not as easy as it may seem. Obtaining, storing and disseminating information is expensive. Too much information is as much of a problem as too little information. Furthermore, some of the traditional types of information obtained are no longer appropriate, but are often obtained just because of tradition. Grab samples analyzed for water quality in a stream, for example, are of little value in designing water quality management programs. Today's needs for data must be tailored to the prospects of dynamic system's management and real-time control. Furthermore, data needs go far beyond requirements for design and operation of facilities. There are widespread needs for developing and interpreting data in a manner so that those who must make decisions regarding resource management or other issues can understand the options open to them and the implications of exercising these options.

In some respects, the problems of obtaining, storing, and reporting data, are minor in comparison with those of identifying present and future issues to be dealt with, and then in deciding what must be known to support actions that may be proposed to deal with these issues. The WMDs must not only be conversant with contemporary issues, but they must continuously look ahead to the emerging issues. Only issues that are recognized can be dealt with effectively. And while the idea of "planning ahead" is old, it is unfortunate that the usual focus of agencies on fighting today's brushfires often constrains its practice.

If the critical issues in a region are understood, and if an array of feasible alternatives for adddressing them can be presented to those who must decide what to do, then the chances of implementing good solutions to the problems are enhanced. The techniques for identifying and evaluating alternatives previously discussed can serve as excellent models for use by the WMDs and others in growth management situations. For these methods to be successful, however, there must be: objectivity on the part of the analysts; a willingness to coordinate with those who would be affected by proposed options; a regard for timing so that results obtained are available before, rather than after, the fact; and a willingness to seek and accept innovative approaches.

The technical expertise, the detachment from local politics, and the statutory authority of the Water Management Districts place them in a unique position to provide the information base for water (growth) management decision making in their regions.

OPTIONS CONSIDERED

Three options for the role of the SFWMD in growth management are considered. They are:

-- Maintaining the status quo;

-- Transition to a regional growth management agency; and

-- Assignment of broader responsibilities in water supply, wastewater management, and monitoring.

The recommended option is for an expansion of role, limited to water, as opposed to taking on a broader mandate such as assuming the regional planning functions of the RPCs.

Status Quo

The SFWMD has recognized a role in growth management and has explored areas in which it needs to adjust its efforts to be more effective in influencing growth management processes of the state, subregions, and local governments. Its own recommendations clearly point out that maintenance of the status quo is not acceptable. Furthermore, there are areas specifically related to water management that are not being addressed to the extent they should be by the Districts (water quality management, solid waste disposal siting, wetlands management, for example). The role of the SFWMD must change, at least to some extent, if it is to actively influence, rather than react to, strategies designed to deal with growth.

Transition to A Regional Growth Management Agency

In January of 1984, the Growth Management Subcommittee of the House Growth Management Select Committee considered a bill (PCB 84-13) entitled "Regional Growth Management Agency." This bill would have

transferred the functions and responsibilities of the RPCs to the WMDs. The idea behind the proposed legislation was that a consolidation of all regional functions in a single agency would minimize duplication of efforts among agencies, integrate regional land and water management, provide greater response to regional needs, simplify conflict resolution, and improve accountability. In theory, such an approach has points to be argued in its favor, but when one considers that the RPCs are involved in planning matters involving: land use; water resources; highways; recreational areas; public schools; sewage and refuse disposal; public libraries; urban redevelopment, and other areas of public services; some question as to the ability of the WMDs to take on such a broadened role must be raised. The consideration here is that the Districts can, and should, do more in their own area of expertise (water). If this premise is accepted, then taking on an expanded role into foreign fields, before the principal role is fully accommodated, suggests that diluting the capability to do what is already being done in a professional manner might be the outcome. All things considered, it is not believed that the WMDs should be transformed into regional growth management agencies, at least not at present. If this were done, the outcome could easily be the demise of a unique agency that has much promise for favorably affecting Florida's future.

Assumption of Greater Responsibilities in Water Supply, Water Quality Management, and Monitoring

Water management, like any other term, is subject to various interpretations. The WMDs, although having considerable responsibility for the development and use of the state's waters, do not have the

sweeping management powers that the British Water Authorities have. And while a shift to the British model is probably not possible, or even advisable at this time, a stepwise move toward more comprehensive management seems appropriate.

Total water management involves consideration of all aspects of the resource -- quantity, quality, subterranean, surface, estuarine, coastal, development, conveyance, treatment, discharge, and allocation. Furthermore, to manage water is to manage land, and the reverse is true as well. Land-use decisions should be made with regard to how they will affect the quality, quantity and availability of water. And, decisions regarding water management should reflect a consideration of their effect on land use. If separate sets of decision makers are involved, as is the case here, the need to coordinate and integrate the functioning of these entities is fundamental.

Comprehensive water management is easy to describe conceptually. The water system of concern is analyzed and an "optimal" way to control discharges and withdrawals is struck. The system is then operated according to this plan -- subject to revision as uses change or new policies unfold. Unfortunately, the boundaries of the physical systems that must be dealt with usually differ from the political boundaries that affect how water is used or developed in the region. Furthermore, agency and other interest group boundaries are imposed, and these create additional fragmentation. Thus while the idea of total water management has much to recommend it, it is difficult to implement such an approach short of forming a regional authority that

actually controls the water resource and can make decisions on how allocations and transfers are to be made at any point in time.

It seems unlikely that many would support an assignment to the WMDs of the broad authorities given the BWAs, but this does not mean that the Districts could not undertake a more comprehensive, and hence more useful role, in dealing with present and emerging water problems in Florida. The case study of the Potomac showed that a partial regional water management plan could be put into effect using existing authorities acting cooperatively. The point is that if the merits of coordinated action can be clearly demonstrated, the opportunity to move in the direction of total water management will be enhanced. Many localities have reached the point where developmental opportunities are limited. This suggests that the time for broad and imaginative water management approaches, ones not bounded by traditions or other institutions of the past, is at hand. Comprehensive water management is the way of the future, and if it cannot be put into effect in its entirety, then it should be approached in a stepwise fashion and its best features continually exposed and documented.

The challenge to the Water Management Districts is to provide the foundation for good land-water decision making in Florida. This will require dealing more comprehensively with: the availability, quality, and allocation of water; projected demands for water use and options for meeting them; effects of alternative water management strategies on the environment; safeguards for protecting ground- and surface-water sources; and the economic and social costs and benefits of developing,

managing, and using water. Furthermore, the WMDs will have to meet this challenge constrained by the policies and other institutions in force, and thus will have to devise modes of operation that can be both effective and accepted by others.

The growth management role recommended for the South Florida Water Management District is one of advancing as far as possible into all dimensions of comprehensive water management: -- in cooperation and coordination with other management authorities; with an attitude that respects the integrity of these authorities; and with initiative and vigor. Basic to the performance of this role is the need for more innovative methods of communication, and for workable procedures for the identification and resolution of conflicts.

This role can be initiated without new statutory authority, but eventually some new authorities may be required. It will not be easy to fill, however, because it will mean that the District will have to act rather than react; this will raise flags and generate political pressures. If the challenge can be met, as a cooperative venture among the many water interests in South Florida, this could become the model for parallel growth management activites having other focuses throughout the state.

CONSIDERATIONS RELATED TO A MODIFIED ROLE

In moving from its present mode of operation to the one suggested in this report, the District must give consideration to several factors that are basic to the recommended change. They include: planning approach; information transfer; attitude; organization; conflict resolution; and interagency and inter-governmental cooperation and coordination. These and other factors are discussed in this section.

Attitude

The success of the SFWMD in assuming a leadership role in growth management, or in any other undertaking for that matter, will be reflected by its attitude. If the District sees itself as a facilitator and reviewer of the proposals of others, that is what it will be, if it sees itself as a strong guiding force in water resources decision making, that is what it can become. This attitude, or philosophy, must flow from the Governing board down through the ranks of the organization. It must be clearly established and used as the basis for all aspects of operation.

The Core Mission Statement of the SFWMD generally embraces the need to manage the region's water resources so as to maximize benefits to the public and recognize environmental obligations. In this respect, the statement seems to imply that the District should play a determining role in water management in South Florida. The translation of this commendable goal into policy at the operational level must be more explicit, however, if the district is going to move toward a generally recognized leadership role. Several recommendations on ways in which this might be accomplished are included in the recommendations section of the report. Attitude is important, and the way the District and others see it will determine whether its enormous capability will be used efficiently or languish from lack of exercise. Considering how vital water is to the well being of the state, it seems clear that the WMDs should play dominant roles in establishing and implementing water policy within their regions.

Planning Approach

The WMDs are in the planning business in both reactive and active modes. In a reactive sense, they coordinate the review of DRIs, ADAs, planned unit developments, local government comprehensive plans, and other development-related documents. Actively, they are involved in drought management strategies and the development of regional water use and supply plans. Of importance here is the manner in which these planning-related processes affect growth management policies in Florida.

Unfortunately, planning means many things to many people. And, in all fairness, it must be said that many decision-making bodies consider planning a stalling technique used to further the interests of those who prefer study to action. Consequently, planning, if it is to be highly regarded and used, must be done in a timely fashion and must result in a display of viable options that decision makers can understand and use.

Planning involves both a process (method) and a scope (measure of what is to be included in the plan). Its purpose is to determine some strategy or strategies for overcoming problems and meeting anticipated needs. If a plan is not put to use, then the resources invested in its development are largely wasted, and little or no value is gained from the effort. All too often this is what happens. Thus, it is incumbent upon planners to avoid the traps that often relegate their efforts to library shelves. The reasons why planning efforts fail are legion. They include: failure of planners to present economically and politically acceptable alternatives; lack of public support; inability of planners to present their plans in a timely fashion; lack of coordination between planning and developmental agencies; and

ineffective linkages between planning agencies and decision-making bodies.

River basin planning is a case in point. For years plans have been developed for these areas, but many of them have been given little consideration by Congress or other legislative bodies. On the other hand, strong local constituencies have often been very influential in determining what projects are built or programs are implemented in their regions. These decisions have not always been in the best interests of the region. Nevertheless, they were made because the proponents could marshal the needed political support. An additional problem stems from the fact that what is considered best in a regional sense is not always considered best when viewed from the eyes of a local community.

For implementation it is necessary that a plan be highly visible, competent, backed by factual data, and specific and clear in its establishment of priorities and the implications of not observing them. Good information and strong arguments supporting the options presented by the plan can go a long way toward convincing those making the decisions that the plan is worth paying attention to. Public support is part of this, and thus the electorate's participation must be given more than lip service. When the planning process is carried out by a governmental unit, the best mechanism for ensuring that it will be seriously considered is to establish a statutory requirement that it be the basis for that government's actions. If plans are to be given this prominence, they must be professionally done and in a form that provides explicit guidance for decision making. Too many plans are simply "wish lists" with little or no attention paid to the relative

importance of planning elements or their timing. For plans such as these, it is little wonder that politicians turn for help to constituencies that can make a convincing case, even though it might not be the best one.

Another problem that must be dealt with is the fact that regional water and related resource planning has not been widely accepted. This is usually due to: the lack of adequate incorporation of local viewpoints in regional planning processes; the lack of incentives for local governments and others to participate in such processes; the overgeneralization of regional plans; and the all-too-common reluctance of regional planners to address controversial issues. Failing to recognize and deal with conflict makes many plans of little value. Even so, it is believed that when properly formulated and used, regional plans have much to offer. Specifically, they can:

-- Avoid unproductive and/or duplicative investments of funds in programs and/or projects that do not meet the rigorous tests imposed by an effective regional planning process of present and projected needs.
-- Resolve conflicts between involved entities and among competing users;
-- Formulate alternative strategies for improved decision-making;
-- Serve as a standard for consistency by which individual proposals and projects can be tested against accepted goals and objectives; and

-- Reduce costs resulting from growth and change by providing a flexible framework within which emerging needs and social goals can be considered and met.

A further consideration, especially important in regional planning, is the need to overcome the isolation of management, technical, and public groups in the plan formulation process. As stated by Rosenberg, there is the need to:

> Involve the "public-at-large" in setting objectives and in decision-making; the need to continually revise and update "plans" and "policies" to reflect new (or changing) objectives and/or technical information; the necessity to interface the technical aspects of the planning processes (data collection, formulation of alternatives, evaluation of options) with existing legal/institutional/political realities and structures.

Finally it is important to say something about the goal of regional planning and its functional requirements. In the South Florida region, it seems that the planning goal should be to facilitate informed decisions on the management of the region's water and related land resources. The functional requirements of this process include:

-- Coordination. The planning process should be designed to encourage interaction among important stakeholders, facilitate cooperation with appropriate state and/or federal agencies, and to minimize duplication of efforts.

-- Conflict resolution. The planning process should be geared to identify conflicts at an early stage, to provide approaches for mediation of these conflicts, and document the outcome of mediation processes with

a secondary objective of determining workable conflict resolution mechanisms. Because successful identification and resolution of conflicts requires certain skills that are not always present in traditional planning agencies, it may be important to add some individuals with such expertise to the planning staff.

-- Consensus building. All important stakeholders should have the opportunity to be represented in the planning process at its initiation. Public input on perception of problems, their importance, and options for solving them is essential for guiding the planning effort and ensuring the potential for its implementation.

-- Consideration of alternatives. Both alternative futures and alternative strategies for dealing with them should be formulated. Furthermore, the impacts of implementing any of these strategies on the environment or society should be included.

-- Establishment of priorities. The plan should include a long-term "schedule for implementation of plan elements" -- a strategy or timetable for plan implementation. In addition, recommended priorities for investment of funds should be prescribed.

-- Standard setting. The plan should become a benchmark for evaluation of all projects and programs in the region. It should be the basis for review and evaluation of local, state and/or federal actions and, in doing so,

should aid in avoiding unnecessary and/or duplicative investments and efforts. It should also serve as a safeguard against parochial actions that might be taken without considering their broader implications.

-- Flexibility. Insofar as it can, the planning process should provide the maximum amount of flexility so that as new information becomes available, goals shift, or other conditions change, mid-course corrections can be made. There is no substitute for a "dynamic" planning process.

-- Follow-up-activities. The regional institution responsible for plan development should act as the "advocate" for the plan's implementation and this should be considered an integral part of the planning process.

If the planning process can successfully incorporate the technical, policy-making and public interest elements, it will produce plans that have a high probability of implementation. To disregard any of these elements is to invite poor plans at best and unimplementable good plans at worse. The process should be continuous so that recommendations flowing from it are current. This does not mean, however, that there is no end to the process and thus no point at which plan elements should be put into operation. Various models for planning management are in use, but one which seems to be well suited to facing issues of coordination and conflict resolution is the model proposed by Rosenberg for planning and management in Delaware (see Figure 2). The principal elements of this organization are:

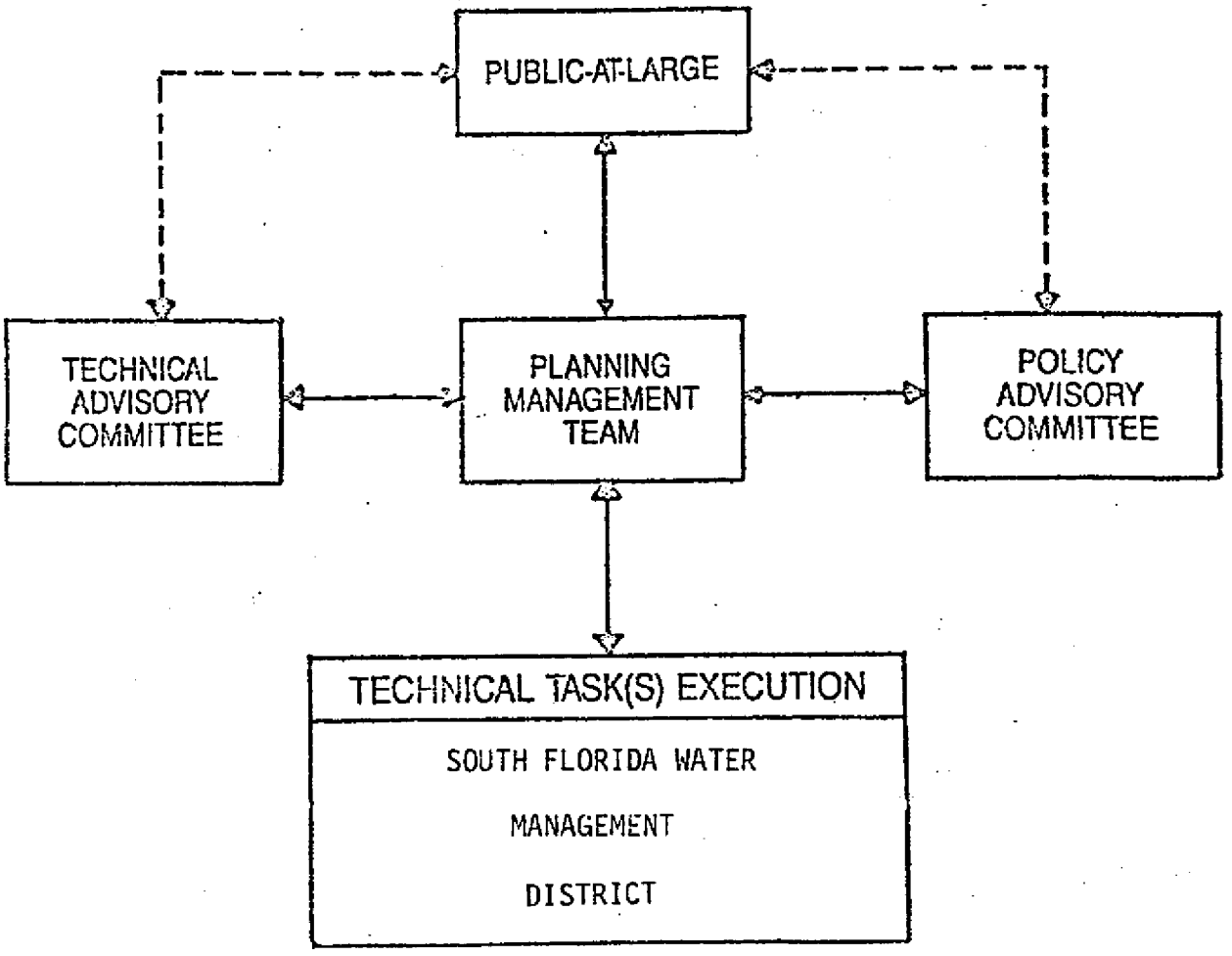


FIGURE 2 SUGGESTED ORGANIZATION FOR THE PLANNING MANAGEMENT TEAM

-- A planning management team with responsibility for initiating and managing all planning tasks. The team would interact with the public and with those performing technical tasks. When policy issues or major technical problems arise, the team would seek direction from one or both of the standing committees. The key function of this team is to "keep the process moving."

-- A technical advisory committee permanently established to assist in scoping needed technical studies, to review and coordinate technical details associated with planning and management activities, and to provide direction to the planning management team when major technical problems occur. The committee would also serve indirectly to facilitate necessary information exchanges and intergovernmental coordination.

-- A policy advisory committee to provide policy direction to the planning management team. The committee would be instrumental in establishing the basic demographic, economic, and other assumptions upon which the plan would be based, and would include representatives of appropriate water resource interest groups.

The planning management team would also obtain input from the public at large. In particular, public views on problems and their severity, environmental impacts, goals, and acceptable problem solving techniques would be sought. This could be accomplished by mail, through informal meetings, or through formal public hearings' processes. Information obtained by the planning team through these mechanisms would be used to: aid in identifying alternatives; uncover points of conflict, and to devise strategies for resolving conflicts and gaining public acceptance.

If the District is to carry out its planning functions with the expectation that they will become effective policy guidance instruments, then it will have to develop operational plans recognizing the cautions outlined above and incorporating the cooperative input of the technical, policy making, and public sectors. It will also have to design and

conduct its planning efforts with implementation in mind as the end result.

Information Transfer

In a 1981 report on Interated Land and Water Management, Maloney stated that ... "The communication of information -- facts, data, opinions, expertise and views -- seems vital." This statement, reflecting the notion that "knowledge is power," supports the thesis that a key element in any effort to improve water and related land management processes must be the transfer of information. It must be recognized, however, that the information must be appropriate to the need and must be packaged for clarity and ease of implementation by the user.

Appropriate to the role suggested for the District in growth management, two mechanisms will be presented here. There are many others, some of them have already been discussed, but the two vehicles summarized below appear to be especially well suited to shaping water policy in South Florida or in any other region of the state for that matter. They are: operational planning and management models; and periodic regional assessments.

Operational Planning and Management Models

The South Florida Water Management Model and the Potomac River Interactive Simulation Model fall into the category of "operational models." Models such as these are operational in the sense that they can susgest operating policies and strategies for allocating water, answer what-if questions, evaluate alternatives, and in doing all of these things, provide explicit displays of the impacts of proposed

those who will be a party to decisions resulting from the information produced in such efforts are involved in the process from the start, moving to implementation of the policies suggested should be facilitated. This step, along with properly displaying the model output for understanding by non-technical individuals, will be instrumental in determining whether the information obtained is accepted and used or looked upon with skepticism.

Regional Assessments

As a complement to the operational modeling program, a regional water resources assessment is suggested. This process would provide and extend the basic data base for decision making, would identify issues and options for dealing with them, and would explore policies for addressing water and related land management issues.

The principal feature of the proposed strategy would be the development of a water resources assessment for the District and its sub-basins. A periodic assessment report would provide a compendium of the data and information necessary for effective long-range planning, permitting and other management decisions. It would be divided into two parts. The first would contain a summary of the water resources availability and use in the basin and would describe trends in water use. It would be distributed to interested parties and serve as basic data for planning, permitting, public meetings and open forums. The second part would contain an appraisal of the District's water problems and options for addressing them. Water use projections and water resources plans and programs would be described and those areas where competing uses existed or were forecast would be identified. Local

actions on the long-term availability and quality of water, and implicitly, on other resources as well. Designed and used as in the Potomac River Basin, the results of such modeling efforts can be the basis for establishment of major resource management policies.

The SFWMD has the technical expertise to develop and use these valuable planning and management tools far more extensively, in more innovative ways than it has in the past. One program would be to model selected subregions in the District with the objective of exploring the consequences of combinations of alternative development futures and alternative strategies for meeting them. Furthermore, these models can be used to look at the implications of combining existing water supply systems, developing new regional systems, managing system elements differently and for many other purposes. Both quantity (water supply, flood control, drainage, environmental protection) and quality dimensions can and should be included.

It should be understood that the argument here is associated with developing a strategy for using operational models more extensively as basic planning tools, not with the use of models per se. In that regard, the District has probably done more than most state agencies and even more than some federal agencies. What is needed is a program for determining what should be modeled, how, and for what purpose. Clearly, the need to guide local government comprehensive planning, and development should be one objective. Another should be to provide the basis for issuing permits, and reviewing DRIs, permit applications and comprehensive plans. If trouble spots are identified in advance, and the modeling program is designed to antitipate needs rather than to react to crisis, it can be expected to provide valuable policy guidance. If

preferences for resolving conflicts would also be incorporated. This part of the assessment would be designed specifically for policy guidance.

The importance of taking stock of water resources has long been recognized. In fact, since the early part of the century, over 20 commissions or committees have labored to identify water problems, evaluate the availability of water, and consider new directions in water policy. In transmitting the First National Assessment to Congress in 1968, President Lyndon B. Johnson said:

> A nation that fails to plan intelligently for the development and protection of its precious waters will be condemned to wither because of its shortsightedness. The hard lessons of history are clear, written on the deserted sands and ruins of once-proud civilizations.

If it is accepted that a periodic evaluation of water resources is in order, then questions to be asked about the assessment include: What is its purpose? Who will its users be and how will they use it? What format should be followed? What level of detail is needed? How often should it be done?

The New England River Basins Commission prescribed several objectives for a water resources assessment. They were (a) to quantify existing water resource demands and conditions and identify and rank existing problems; (b) to predict future water resource demands and conditions and identify and rank anticipated problems; (c) to provide a common basis for problem analysis to facilitate setting priorities for needed water resources planning and management activities and for the investment of available funds; and (d) to evaluate existing policies and

programs based on their ability to resolve the problems identified and to recommend required policy and program modifications.

There has been considerable expression of belief that a water resources assessment should assist decision makers in making policy and budgetary determinations. For example, the Department of the Interior in its 1976 user-needs study, found that representatives of the Office of Management and Budget expected the federal agencies to use the 1975 assessment in programming and budgeting. It was believed that the assessment would help to redefine or redirect programs, curtail or expand existing programs; identify new initiatives, determine and support needs for planning, data, research, and problem identification; and assist in establishing priorities for federal expenditures. Although this hope was not realized, it still expresses what the assessment process might produce.

The keystone of an assessment is its objective. Once this has been decided upon, the appropriate elements to be included and the depth to which they should be explored can be arrived at in a fairly straightforward manner. Selection of data sets and analytical techniques is also a requisite. In the final analysis, the value of the assessment will be proven by its acceptance or rejection by principal users. The credibility of data and the manner in which they are presented will strongly influence the outcome. Failure to properly identify users and their interests and to present findings in a clear and useful fashion has been a shortcoming of many attempts to evaluate regional water resources. A definitive determination of users and their data and information needs must be considered essential.

Assessment components which should be considered include:

-- Determining the objective;

-- Procuring and organizing data on population, economic and employment trends; water withdrawals and consumptive use; water availability; instream flow needs; groundwater reserves and withdrawal rates; water quantity and quality problems; land use; energy development trends; and new technologies impacting water use and/or quality;

-- Designing alternative futures to test the adequacy of water supplies and pinpoint problems requiring resolution;

-- Developing appropriate water supply-demand models to evaluate the impacts of various levels of water use and water supply;

-- Comparing water availabity with use for various assumptions and futures so that trends and conflicts may be identified;

-- Identifying problems, raising flags on emerging issues, and indicating values threatened by not addressing these problems;

-- Analyzing and classifying the severity of problems and setting priorities;

-- Setting investment schedules that include allocation of funds on a regional or other basis and tabulating

the history of federal investments by function, program, and agency;

-- Determining combinations of federal and nonfederal management, planning, research, and data collection programs to impact on the identified issues and, as an adjunct to this, displaying what existing programs are achieving and where, what the costs of these programs are, what funding levels will be needed for them in the future, and where the responsibility should lie for these programs;

-- Evaluating the adequacy of existing administrative and statutory authorities, with attention given to an inventory of the current situation and an assessment of future needs;

-- Assessing the status of prevailing water policy and its relevance to the solution of identified problems and determining how compatible it is with other national policies, such as those related to transportation, energy, and agriculture; and

-- Recommending specific changes or identifying viable options for changing institutional arrangements, water policies, laws, and programs which will meet the water resources challenges of the future.

Previous assessments have included many of the elements listed above. The problem has been that they were not treated in depth.

Various models for an assessment process can be devised. They are all objective-dependent, however, and the objective should be clearly delineated as a prerequisite to model selection. At the extremes, the models might be classified as the data assembly model and the policy guidance model. The data compilation model needs only a management group that can effectively set a common set of statistics and a common and acceptable set of assumptions. The policy guidance model, on the other hand, is one which ventures into the arena of recommending or outlining options for major policy shifts and legislative proposals. Between the strict data base model and this one, an infinite number of variations are possible.

It is considered, however, that a model of the policy guidance type would be the most desirable for adoption by the SFWMD. This model should include the features of problem identification and analysis, but would stress the establishment of priorities, the recommendation of options for Board and legislative action, the guidance of investment schedules, the identification of needed institutional and policy changes, and program review and assessment. It would constitute an important regional input to the state's water plan and it would serve as the data base for local government comprehensive planning.

Conflict Resolution

Since the late 1960s there has been an increasing sophistication on the part of citizens and special interest groups in their interest in, and methods for, dealing with issues and decision-making bodies. As a result, conflict resolution has become recognized as an integral part of most planning and management processes. Negotiation, rather than

confrontation, seems to be the most productive path to follow. The question is, how can this be accomplished successfully, and within reasonable periods of time? The alternative, litigation, is a costly, time-consuming process which usually closes off many viable options, and frequently does not result in optimal solutions to the problems being addressed.

The crux of the matter is that decision making is a political process, and that process is one of consent-building to the level needed to gain support for some action. For each activist supporting a proposal and for each level of interaction, there is usually a counteractivist and an equal opportunity for interaction. Interaction is the interface between the activist and those institutions in the political system where sufficient authority resides to make policy. The actions taken by those opposing a project or program thus may be considered as political constraints. These political constraints can be formidable and may, in many cases, be the determinant of the outcome of a given proposal. They may be defined as that class of institutional constraints stemming from the deliberate action of factions seeking to delay, inhibit, or prevent some type of proposal.

Political constraints are born out of the interest of someone or some group to oppose an action being sponsored by others. These constraints may be imposed by the direct intervention of counteractivists in normal planning, approval, and implementation processes, or they may occur as a result of influencing elected officials who can then sway the outcome of a project. The goal of the counteractivists is to delay, change, or prevent some proposed action.

In days gone by, the environmental embodiment of the counteractivist was the "little old lady in tennis shoes." This is no longer the case; the eccentric lone advocate has been replaced by a throng of Rotarian types. Environmentalists, conservationists, and preservationists, for example, have taken strong positions in recent years on various aspects of many water projects. These groups are no longer the weakly heard "voices in the wilderness." Today many of them are well organized, sophisticated, experienced in all aspects of lobbying, and knowledgeable in methods for gaining strong public support for their views. Where such groups elect to oppose an issue, the proponents can expect a time-consuming and difficult uphill fight.

Opposition to a particular proposal may be confined initially to a few individuals or small groups. As time goes on, however, many of these will seek support from other groups who, although they may have different interests, generally stand against the type of action being considered. This combination of opponents increases the strength of the opposition and gives it a more formidable political dimension. The strategies of those opposing a proposal may range from mass appeals and protests to testimony before review and regulatory bodies, to lobbying of elected officials, and to court action. Generally, several or all of these mechanisms will be used simultaneously. Political constraints have an air of unpredictability associated with them. This is becuase they are subject to frequent adjustment by their creators as conditions and/or levels of support change. They represent the interests of their designers, however, and they must be reckoned with by those proposing new water developments, changes in water use, or other actions. It has

been said that political opposition "can turn what are otherwise procedural matters into major obstacles." Political deterrents reflect the points of view of important interest groups and as such may be the most difficult of all institutional constraints to deal with.

Those seeking to implement water projects or programs are well advised to assess carefully the political feasibility of their proposals. Unless political support appears to be likely, efforts to modify proposed courses of action to achieve the needed backing must be pursued. There are numerous response strategies available to deal with problems involving conflicts of interest. They include: informal gatherings to discuss issues and air points of view; the use of third-party facilitators; arbitration; litigation; legislation; public education; cooperative model building (Nebraska Environmental Assessment Model); and technical change. The circumstances dictate the course of action or the actions to be taken. A point to keep in mind, however, is to identify potential conflicts early and to begin the negotiation process before, rather than after, the fact.

The SFWMD has taken a leadership role in recognizing the need for developing an effective strategy for dealing with conflicts. Its retention of Dr. Bidol, an expert in this area, clearly shows the importance it attaches to this difficult field. It can only be added that a continuing recognition that conflict resolution should be an integral part of the District's activities is essential to the future success of many of its efforts. Finally, a comment by Mr. Wodraska at the Eighth Annual Conference on Water Management in Florida seems worth repeating:

> You have to be conflict managers yourselves. You can't go out and hire the expertise and expect other people to resolve your conflicts.

The WMDs know their Districts and their people, if they can't effectively come to grips with conflicts, the expectation that outsiders can is founded on sand, at best. Trust, patience, humility, and understanding are essential elements in conflict resolution, and the Districts are the best candidates for developing these traits insofar as water management goes.

Coordination and Cooperation

A long-sought goal has been the coordination and integration of governmental programs that affect or manage land and water resources. As noted by Maloney, under such a system, each agency would have knowledge of, and would act with concern for, the effect of its actions on both the natural system as a whole and on the interests of other agencies or units of government. The ideal would be: a free exchange of ideas and information; emphasis on mutual assistance and cooperation; avoidance of duplication; and identification and resolution of conflicts and inconsistencies. This goal has been sought for years, and by many, but for the most part it has been elusive.

For example, interest in coordination of federal water resources programs and policies has been high since the turn of the century. Many proposals for achieving this goal have surfaced. The most recent thrust stemmed from the Water Resources Planning Act of 1965, P.L. 89-80. This Act was designed to encourage conservation, development, and use of the Nation's water and related land resources on a comprehensive and coordinated basis. The need to coordinate the many national, regional,

state and local planning efforts relative to water resources was also pointed out in the final report of the National Water Commission (1973) and in many other prestigious studies. Under P.L. 89-80, there were provisions for coordination at the several levels of government, but little authority to do the job was given, and limited appropriations and the demise of the Water Resources Council have imposed further constraints. Finally, the following recommendations of the 1978 Symposium on National Water Policy bear on the need for coordination:

-- Policy makers at all levels of government (should) recognize the necessity for improved intergovernmental cooperation.

-- The Water Resources Council or similar agency should serve as a focal point for intergovernmental efforts and to provide information and technical assistance to all other levels of government.

-- It is desirable to encourage further development of regional organizations based on natural or hydrologic boundaries, even though implementation would be by Federal, state and local government, and private organizations.

-- In order to foster greater intergovernmental coperation, we endorse the resolution of the National Governors' Association, which states: "Any National Water Policy must recognize regional differences in water programs and ensure Federal water investments." In addition, any policy should strengthen and support non-Federal water resource management roles.

-- An overall water policy is needed with more coordination between agencies with conflicting missions.

Part of the trouble with coordination is that it is not always clear what the term means. The coordinating role of the WMD should be defined explicitly so that its staff and others can come to grips with effective mechanisms for carrying it out. Liebman, in his analysis of

the Water Resources Council had this to say about various interpretations of the term "coordination."

> What are some of the meanings and uses of the term? At the very least, it seems to connote a communication so that the various members of an interagency group have an awareness of each other's programs and activities. To the Congress, it has often meant, at least in the water resources field, avoiding duplication and not being confronted with conflicting sets of projects for a river basin. To one Congressman, it has meant the resolution of interdepartmental disputes, and the failure of the Council to do this has been criticized by certain staff members of both the House and the Senate Interior and Insular Affairs Committees. To some planners, coordination involves a bargaining process and a resolution of issues, if possible, through that process. If the process fails to resolve issues, that too can be called coordination. Coordination has been construed as the power to make decisions. President Eisenhower's Advisory Committee on Water Resource Policy saw a lack of coordination in 'the fact that the Federal interest in water resource development has been expressed in different laws empowering different agencies to pursue particular programs for different purposes.' Some people see coordination as the power to impose authority from the top.

There is the need to coordinate the District's activities with state and federal agencies, local governments, interest groups, RPCs, and the public. The mechanisms available are many and include: plan review; comment procedures; permitting; serving on technical advisory committees; education; cooperative planning programs; assessment of the region's water resources; and coordinating councils. Both agencies and functions related to land-water issues must be coordinated. For example, water quality and water quantity planning and management and surface water and groundwater planning and management should be closely coordinated. The comprehensive water management approach recommended

herein supports functional coordination and requires it. Conceptually this aspect of coordination is easy, but practically it requires the cooperation of all actors involved in the functions to be coordinated. The need for functional coordination is clearly recognized by the District, and several model programs to improve interagency and intergovernmental coordination have been implemented as well. Examples of these are the Martin County Study and the assessment of the water-related elements of the City of West Palm Beach Comprehensive Plan.

The cooperative effort between the District and the City of West Palm Beach was designed to assist the city in its plan revision process and to contribute to the integration of land and water management practices at the local level. This exercise embodies the notion that the WMDs and local governments must work together in land and water management planning and regulation so that decisions, made separately by each, will be consistent and complementary. It is believed that planning integration between the District and a local government should be continued through the comprehensive planning process and followed through to decision making at site levels. The City of West Palm Beach effort and the Martin County study demonstrate that coordination can be achieved if all parties are willing to cooperate.

The District's Resource Coordination Department has adopted the following mission statement which addresses coordination at several levels.

-- Providing a responsive forum for public involvement;

-- Communicating the District's policies, goals, and positions to the public;

-- Interacting with individuals, organizations, and interests where specific water resource issues and concerns are involved;

-- Anticipating public attitudes to future water-resource related issues based on established relationships and previous experience;

-- Facilitating inter- and intra-agency coordination and cooperation.

Unfortunately, the number of individuals in this department and the press of other duties suggests that the extent of coordination that can be achieved will be less than the mission statement indicates. Furthermore, a clear strategy for what and how to coordinate, and who is going to do it would be useful. Furthermore, the need for better internal coordination is apparent and should be given high priority by the Executive Council. Finally, the collocation of agency personnel seems to offer an avenue for improved relations. In the case of DER and the District, this activity seems to have improved coordination between the agencies, particularly relative to permitting processes.

Organization

The current organization of the SFWMD is shown on Figure 1. The discussion which follows focuses on its adequacy relative to the 1984 Core Mission Statement, given in Part I, and to the recommendations made in this report.

The Core Mission Statement specifies that the District is to manage water and related resources ... for the purposes of providing: environmental protection and enhancement; water supply; flood protection; and water quality protection. It also states that the

impacts of land-water actions are to be evaluated and that options for minimizing adverse environmental effects are to be displayed. Interpreted broadly, the statement is consistent with the role of comprehensive water management recommended herein. Unfortunately, how the mission statement is to be translated into action is not quite clear. Furthermore, the present organizational structure and staff capabilities suggest that some shifts in emphasis and personnel might be worth considering if the District's mission is to be accomplished more effectively.

The principal divisions of the SFWMD are the Departments of: Resource Operations; Administration; Technical Services; Resource Planning; Resource Control; and Resource Coordination. The mission statement of the Department of Resource Planning states that it is that Department's mission to plan for the balanced, multi-purpose management of water and related resources in support of the District's core mission statement by: ... conducting research and evaluations, ... providing advice and guidance, ... and by developing plans and strategies to address water and related resource management problems. But there is a distinction between planning and the implementation of these plans as management tools. If the District is going to assume a greater management responsibility as a means of influencing growth management in South Florida, a more explicit recognition of this role in the organization's composition should be considered. With this in mind, and consistent with the suggestions that assessment and operational

modeling programs should be implemented, an alternative organizational arrangement is proposed (see Figure 3). Note, however, that this represents only one of many possible options.

The alternative organization plan includes three departments, Resource Planning and Policy, Resource Allocation and Control, and Resource Regulation and Enforcement. Staffing for these departments would come mainly from the present Departments of Resource Planning and Resource Control, but three additional professional planners would be added to the new Department of Resource Planning and Policy (rationale for this follows later). The Department of Resource Planning and Policy would be responsible for carrying out the proposed assessment program for developing and reviewing standards and criteria, for conducting in-house research and monitoring contract research, and for special studies.

The Department of Resource Allocation and Control would be responsible for managing the proposed operational modeling program for developing groundwater management programs, for systems' monitoring and data management, and for external plan and program review.

The Department of Regulation and Enforcement would be responsible for the permitting functions of the District for drainage, flood control, groundwater and wells, and water quality. It would also issue consumptive-use permits and would carry out the District's program for ensuring compliance with the District's regulatory programs.

The proposed reorganization plan emphasizes the planning, management, and regulatory roles of the District by placing them in separate Departments. The Department of Resource Planning and Policy,

FIGURE 3 ALTERNATIVE ORGANIZATIONAL PLAN

DEPARTMENT OF RESOURCE PLANNING AND POLICY	DEPARTMENT OF RESOURCE ALLOCATION AND CONTROL	DEPARTMENT OF RESOURCE REGULATION AND ENFORCEMENT
Assessment-Policy Division	Operational Modeling Division	Drainage and Flood Control Division
Assessment-Resource Base and Trends Division	Groundwater Management Division	Groundwater and Wells Division
Standards and Criteria Division	Monitoring and Data Management Division	Water Quality Division
Research and Futures Studies Division	Plan and Program Review Division	Water Use Permitting
		Enforcement Division

through its Assessment-Policy Division, would address issues of water policy and make recommendations on them to the Executive Council, it would also be expected to consider and evaluate pending water-related legislation and to recommend needed legislation when this was appropriate. The Assessment-Resource Base and Trends Division would compile, analyze, and report on resource availability and quality, and develop and assess trends in water use and related land management. It would identify emerging issues and pinpoint trouble spots. The Research and Futures Studies Division would translate research findings into action programs, conduct in-house research as needed and coordinate contract research programs. The application of research findings to District problems rather than the conduct of basic research would be emphasized. Futures studies would encompass such activities as assessing the impacts of new technologies on water management, evaluating the consequences of catastrophic events, and exploring the long-range consequences of water and related land management actions. The Standards and Criteria Division would formulate proposals for new standards and criteria and would assess the effectiveness of existing ones, considering also the constraining influences these might impose.

The Department of Resource Allocation and Control would deal mainly with the development and application of operational models to water management issues in the District's region. In this context, water management is defined to include surface water, groundwater, sea water, water quality, water use, flood control and drainage, wastewater disposal, wastewater reuse, etc. The objective of this effort would be to provide up-front information to local governments, RPCs, and others

to guide their planning efforts. This would decrease the reactive burden of the District and place it in a leadership position in water management. The Groundwater Management Division would be responsible for special groundwater studies encompassing both water quality and quantity, identification of critical groundwater areas, assessing conditions of water withdrawal and recharge, and evaluating land-use practices relative to their impact on potable groundwater sources. The Monitoring and Data Management Division would develop guidelines for monitoring systems' operation and performance, implement monitoring programs where needed and coordinate monitoring programs of concern to the district with appropriate state and federal agencies, RPCs, local governments, and others. It would also be responsible for the basic data compilation and management programs of the District. The Plan and Program Review Division would be responsible for reviewing local government comprehensive plans, for reviewing DRIs and ACSC proposals, and for reviewing other documents which the District is obligated or invited to react to.

The Department of Resource Regulation and Enforcement has the same general responsibilities as the current Department of Resource Control. A different structuring of Divisions is suggested, however, to place more emphasis on groundwater, and water quality. Under the proposed scheme, the operational planning program would serve as an important determining factor in decisions regarding permitting on the allocation of water (consumptive-use permits), control of surface water flows, and water quality.

The Department of Resource Coordination is lightly staffed for its optimistic mission in coordination. At the minimum, it is considered that an individual with specific responsibility for coordinating with state agencies and the Governor's Office should be recruited and that at least one other staff person having a background in environmental management should be added to provide more technical depth on the cadre. Finally, the addition of two or three professional planners to the staff of the current Department of Resource Planning would facilitate the long-range planning mission and assist in bettering communications with other regional and local government planners. The level of effort presently focused on DRI reviews and comprehensive plan reviews is very limited. If the District believes that these are important functions, then it should take some steps to improve this situation. In particular, it is not likely that much external involvement of District planning staff on even advisory committees to local governments can be expected at present staffing levels.

Budget

The changes suggested above and those recommended in the next section would require an increase in the operating budget of the District. The magnitude of added annual cost would probably be in the $500,000 to $750,000 range. This would accommodate adding about five experienced individuals to the organization and would provide some resources to support the increased data retrieval and management needs that would accompany the assessment process. The implementation of a greatly expanded monitoring program would have a significant impact on

the budget, however. Determination of the extent of this would require a special analysis.

Statutory Authority

Most of the recommendations made in this report could be implemented under the existing authorities of the District provided by various Florida Statutes. Ultimately, if the water management strategies flowing out of the operational modeling program were legislated as the standards for approval of the water-related elements of local government comprehensive plans, they could become very influential policy guidance instruments.

RECOMMENDATIONS

The development and transfer of on-target information to guide planning and decision making in South Florida are basic to the District's role in growth management. These processes are the key to the District's ability to assume a leadership position; effectively participate in conflict resolution; and improve interagency and intergovernmental cooperation and coordination. This recognition underlies the recommended role for the District in growth management which is repeated below. The recommendations which follow support this role.

> The growth management role recommended for the South Florida Water Management District is one of advancing as far as possible into all dimensions of comprehensive water management: -- in a cooperative and coordinated manner with other management authorities; with an attitude that respects the integrity of these authorities; and with initiative and vigor.

The fulfillment of this role will require that the District: develop and/or strengthen a bond of trust between itself and those other

agencies, organizations, and individuals it must deal with; actively advise the state and others on planning designs, and on standards for evaluating water-related actions, and take all possible measures to see that these are recognized and used; move foward actively to develop operational plans in anticipation of regional planning and management needs and work to see that these plans become the vehicles for water and related land-resource decisions in South Florida; and advise the Governor and the Legislature on issues of water policy, with the objective of influencing future legislation. The District should accept the challenge of total water management. The Executive Council and Governing Board should be more forceful in seeing that the exceptional resources of the District are efficiently and effectively employed, and that the District leads, rather than being led, on matters related to water management.

Recommendations to support the growth management role proposed for the District appear below. They are grouped into various categories as follows: general; water resources planning; water resources assessment; water resources management; groundwater management; organization; coordination; local government comprehensive planning; review processes; conflict management; permitting; and research.

General

These recommendations relate to several topics that are not explicit in the other categories.

1. Various District Task Force and other study reports have contained recommendations related to growth management. Many of these are summarized in

the report. Generally, they are meritorious and the Executive Council should give them full attention.

2. The coordinating role of the District should be explicitly defined. The definition should consider both in-house coordination and external coordination with the Governor's Office, state agencies, RPCs, local governments, and others.

3. The capability of the District for operating and maintaining its field systems should not be neglected in any designs to redirect the District's focus. This vast water control system plays an important role in growth management.

4. Recognizing that limitations of personnel and funds constrain what the District can do, it is recommended that a system of ordering priorities for planning, standards development, and special studies be established and that this system be made a part of the recommended water assessment and appraisal process.

5. The departments and divisions of the District should be required to provide annual reports of their activities. These reports could be brief, but compilations of program documents should not be accepted. These reports should permit the Board and interested parties to understand what is going on in terms that the layman can comprehend.

6. The Resource Planning Department should devise a strategy for improving the translation of its studies and plans into action.

Water Resources Planning

Planning that is relevant, implementable, factually based, and timely, can do much to establish a leadership role for the District in growth management activities. There are several levels of planning that are important in this regard. They are: providing assistance to local governments on the water-related elements of their comprehensive plans; developing a format for, and producing the regional input to, the state water plan; and designing operational water management plans to guide development in the South Florida region. Recommendations related to the LGCP process and operational planning models are covered under Local Government Comprehensive Planning and Water Management. Recommendations related to the state water planning effort are given here.

7. The SFWMD should be a defining force in establishing what a state water plan should consist of and how it should be used.

8. The District should design its state water plan component as a policy guidance document rather than as an accounting of water problems and options for solving them. The previous Water Use and Supply Development Plan was far too general to make it a design for action and was not well suited to the establishment of policy. The

recommended operational water management plans should be the vehicles for addressing issues and recommending actions.

9. The District should enlist the aid of the other WMDs and the RPCs in influencing the state planning process so that there will be consistency among the districts, and a state-wide policy can emerge.

Water Resources Assessment

A water resources assessment, periodically reported on, would be a valuable focus for information transfer within the District's organization and throughout the South Florida region. This assessment would have two parts: data base; and a policy analysis. In the organizational structure recommended here, the conduct of the assessment would be by the Department of Resource Planning and Policy. Specific recommendations are:

10. The SFWMD should implement a water resources assessment and appraisal program. It should have District-wide and subregional dimensions. The program should encompass the following: include the following:

    -- Assessing the status of the District's water resources;

    -- Identifying long- and short-range problems and recommending courses of action leading to their solution;

    -- Appraising the adequacy of existing and proposed water resources policies and programs and making recommendations for change;

-- Designing procedures for the implementation of a regional and statewide water policy;

-- Defining the District's interest in continuing or emerging water and related land resources issues;

-- Developing standards and procedures for plan formulation and project analysis; and

-- Determining a sustained safe yield for the District's water supply.

11. As part of the Assessment Program, a data base and monitoring center should be established. This center would incorporate the existing data elements of the District. It would also be responsible for the development of a District-wide monitoring system for facilitating the assessment process, providing input to modeling efforts, and serving as an information bank for assessing compliance with the permits issued by the District. This center would:

-- Publish a catalog of sources of water-related data;

-- Identify gaps in the water data base and identify the probable long-term basic data requirements needed to support future planning, decision making, and permitting processes; and

-- Work with nonwater agencies to coordinate their data collection programs with water resources planning and management needs.

12. Activities of the assessment program should be reported annually in a format which includes the following:

-- An evaluation of existing and potential problems concerning water resources planning, research development, and management deserving of regional attention;

-- Evaluation of the scale, quality and effectiveness of state, regional, and local efforts in water resources planning and research;

-- A review of the programs and activities (including regulatory activities) of the Federal Government, the state and local governments, and nongovernmental entities or individuals, with particular reference to their effect on water resources quantity and water quality and the conservation, development, and utilization of water and related land resources; and

-- A program for remedying the deficiencies of existing programs and activities, together with recommendations for legislation.

13. It is recommended that a major responsibility of the assessment program be the appraisal of state and local policies relating to water resources and the recommendation of policies to improve the capabilities of the District and the state for managing growth.

14. The assessment program should include a review and sampling of local codes and ordinances so that better determination may be made of their adequacy for managing growth (water) or their potential for constraining the implementation of best management practices.

Water Resources Management

Although the WMDs are not in the business of directly supplying water to users, they do have the authority to produce water and they also issue consumptive use permits that are the state's allocation instruments. The Districts are concerned with both the short- and long-range availability of water and also in seeing that the best use is made

of the supplies available and that the use of these waters is accomplished in a manner such as to minimize adverse environmental and other impacts. Note that this implies a management strategy that includes: groundwater; surface water; water quality; drainage and flood control; water supply; wastewater disposal and use, etc. The following recommendations deal with District-wide water management issues. In particular, they support the notion of the development and implementation of operational water management plans through the use of operational water planning and management models.

15. The SFWMD should establish an operational modeling program within a new Department of Resource Allocation and Control. The objective of this program would be to:

    -- Anticipate problems and develop feasible and sound strategies for confronting them;
    -- Explore alternatives for better water management within subregions using already existing facilities as configured or by considering various interconnections;
    -- Assess options for addressing water and related land resources management issues irrespective of technical, legal, political and other constraints for the purpose of identifying new directions for water policy and/or adjustments to prevailing philosophies;

-- Establish priorities on actions to be taken regarding water supply, water quality management, drainage and flood control, and environmental protection;
-- Assess the economic and social costs of exercising various water management options;
-- Support local government planning and management efforts;
-- Accelerate efforts in water quality and environmental systems modeling;
-- Provide subregional forums for analyzing land-water issues and designing coordinated management strategies; and
-- Serve as the District's standard for plan evaluation, DRI review, participation in Chapter 380 Committees, and for issuing consumptive use permits.

16. The SFWMD, in cooperation with the other MWDs and Regional Planning Councils, should take the leadership in developing a state-wide flood plain management policy.

Groundwater Management

The considerable importance of groundwater to the health and well being of the citizens of the State of Florida suggests that the District should assign a high priority to this component of the hydrologic system in developing its growth management programs. Accordingly:

17. It is recommended that the SFWMD undertake a leadership role in developing a groundwater management strategy for the State of Florida. This strategy should be consistent with the policies of the SFWMD and the other WMDs. It should recognize both quality and quantity dimensions. It should consider: areas of recharge and discharge; present and anticipated demands; the storage, disposal, and transport of hazardous materials; location of future well fields; siting of facilities that might affect the quality or quantity of the resource; and other appropriate issues. These efforts should be coordinated with DER, EPA, other WMDs, RPCs, and other appropriate agencies.

Organization

The recommendations on organization focus on strengthening the ability of the District to accomplish current growth management objectives and to provide the appropriate emphasis for the growth management role suggested herein.

18. It is recommended that the Departments of Resource Planning and Resource Control be reorganized into the three-department format indicated on Figure 3. This reorganization would would reflect emphasis on water management and provide a logical division of responsibilities for carrying out the assessment and operational modeling programs. The logic

for this reorganization appears in the previous chapter under Considerations Related to a Modified Role.

19. An experienced professional with a background in public administration or planning should be added to the Department of Resource Coordination. This individual would be responsible for coordinating the District's programs with the Office of the Governor, the principal state agencies the District cooperates with and the RPCs. The individual would report directly to the Department Director.

20. At least one professional staff person with a background in environmental management should be added to the Community Relations Division of the Department of Resource Coordination. This would help adjust for the limited technical backgrounds of individuals in that Division and for the limited cadre available to the Division for meeting its objectives.

21. The Operational Modeling Division of the proposed Department of Resource Allocation and Control should include on its staff at least three practically-oriented environmental scientists.

22. It is recommended that the mission statements of the proposed Departments include wetlands management, solid and hazardous waste management, wastewater disposal, landfill selection and operation, fragile areas identification and management, water quality management, and groundwater protection.

23. A minimum of two experienced professional planners should be added to the District's staff to support its planning mission and to enhance communication between the District and other planning agencies.

In closing this section on organization, it should be mentioned that the Department of Resource Coordination has a great deal of responsibility for coordination, and its mission statement is commendable, but the limitations of staff size suggest that it will be hard pressed to operate very comprehensively unless some staff increases are forthcoming. The proposed Department of Resource Allocation and Control would be staffed mostly by individuals already in the organization. This would result mainly from a reassignment of responsibilities from the existing Departments of Resource Planning and Resource Control. Finally, some of the current research staff should be reassigned to the assessment, planning, and program review programs of the District. It appears that the District is top-heavy in research.

Coordination

The District must coordinate its programs with the Governor's Office, state and federal agencies, RPCs, local governments, interest groups and others. The Department of Resource Coordination has responsibility for much of the interagency coordination. But it has little real authority to coordinate within its own agency, and is limited, at present, in its external programs due to size of staff. The recommendations made here reflect the limitations of the District at present and the nature of the coordination process.

24. The Department of Resource Coordination should be assigned primary responsibility for coordinating the activities of the District with the several state agencies, primarily DCA and DER, with the RPCs, and with the Governor's Office of Planning and Budgeting. The latter assignment should be given high priority.

25. The Department of Resource Coordination should be charged with undertaking a study of the following issues and making recommendations on them to the Executive Council and Governing Board:

    -- Options for coordinating the planning processes of the District with those of its partners in planning;

    -- Methods for facilitating reconciliation of differing views;

    -- Institutional arrangements preferred by various counties, RPCs and others for coordinating programs with the SFWMD;

    -- Options for improving the coordination of water quality and water quantity; and

    -- Methods for coordinating the research needs of the WMD with the resources available in the state university system.

26. It is recommended that primary responsibility for coordination with local governments be vested in the individuals involved in plan review, DRI

review, etc. Coordination at this level must be almost personal to be effective and it should be carried out at the grass-roots level. The problem is that the District is very limited in manpower to fill these roles. If coordination at this level is considered important by the District, it will have to provide better resources to address it, either by reassigning staff or adding personnel. It should be pointed out, however, that if the operational planning and management program is implemented and is successful, the flow of information at the front end could significantly alter the plan review requirements of the District and shift the burden of coordination with local governments to the proposed Department of Resource Allocation and Control.

27. It is recommended that the suggested organization for the operational water planning program shown on Figure 2 be adopted by the District for all major planning functions. In particular, the establishment of technical advisory committees and policy advisory committees would facilitate coordination.

28. It is recommended that the RPCs be invited to membership on the technical and/or policy advisory committees of the District when their regions are involved. Furthermore, the RPCs should be represented on the advisory committees established to help guide

the state water planning process element for South Florida.

29. It is recommended that a renewed effort be made to have the RPC Executive Directors and the Executive Director and Executive Council of the SFWMD meet on a scheduled basis to enhance the mutual understanding of issues and to further a cooperative spirit among these agencies.

Local Government Comprehensive Planning

The District's Task Force on Local Government Assistance (1984) contained excellent recommendations on approaches the District could use to improve its coordination with local governments and provide better input to their planning processes. It is suggested that those recommendations be reviewed. Most local governments need and want reliable information upon which to base their actions. Many of the recommendations in this report are aimed at improving the District's ability to provide this information at the time and in the form it is needed. Further recommendations are:

30. It is recommended that the District continue to assign a high priority to coordination between itself and local government planning agencies. The Martin County and City of West Palm Beach approaches should be used as models for these efforts. Furthermore, in dealing with local governments, the District should emphasize:

-- Broad regional views;

-- The implications of various courses of action (environmental consequences, for example);

-- Spill-over effects of local proposals;

-- Economic and social costs of proposed local government actions;

-- Appropriately interpreted data; and

-- Anticipating issues and analyzing them in advance of plan development rather than reacting to them after the fact.

31. The District should reinforce its capability for serving on technical advisory committees established by local governments to facilitate their planning processes.

In a report dealing with comprehensive planning by the City of West Palm Beach, the SFWMD staff made several recommendations related to local government comprehensive planning that are worth repeating here. They are that the District should:

32. -- Work towards providing a complete picture of water resource availability and the future supply outlook in terms of both quantity and quality.

-- Inform local governments of the runoff removal capability of any given basin and of compatible land uses which can meet drainage constraints and prevent flood damage.

-- Point out sensitive areas related to water quality and work with local governments so that compatible land use is proposed for such areas. (This activity should be coordinated with RPC identification of areas of regional significance. Author's note.)
-- Work closely with local planners in the evaluation of existing and proposed wastewater treatment and disposal methods so that alternatives that carry the least or no threat to water quality are recommended.
-- Assist local governments in undertaking valid inventories and analyses regarding site selection for solid-waste disposal. Similar involvement is necessary regarding siting of industries that generate or store hazardous and toxic wastes.
-- Identify water related sensitive areas, i.e., aquifer recharge, wetlands, flood plain, etc. that should be considered for retention in a natural and unaltered condition from a water management point of view.

Review Processes

The review of comprehensive plans, DRIs, ACSCs and other documents by the District is an important function and one that can be used by the District to make its influence felt in growth management issues. But this function is mostly reactive, and there is a question of ordering of

priorities. At present the responsibility for most of the reviews rests mainly on about three individuals. Clearly, there is just so much they can do. If this role is to receive greater emphasis, then some reinforcement of staff will be necessary.

33. It is recommended that the review capability of the District be increased and that more emphasis should be placed on input to the Chapter 380 Resource Planning and Management Committees. A staff of at least six should be considered.

34. It is further recommended that if the reorganization plan suggested herein is adopted, a Division of Plan and Program Review be created in the proposed Department of Resource Allocation and Control. This would closely coordinate the active management planning elements with the plan and program review processes and both functions would benefit from the cross fertilization this would provide.

The sparcity of recommendations regarding review processes should not be construed to mean they are believed to be unimportant, but rather that if the District takes a more active-anticipatory stance, reliance on reviews will become secondary to up-front guidance.

Conflict Management

Approaches to successful conflict management are about as abundant as those for coordination. The wisest course would seem to be to take the best measures available to identify trouble spots before they become "hot" so that the opportunity for dealing with them in a

non-confrontational manner is optimized. This approach is consistent with the active water management role recommended for the District.

35. The Department of Resource Coordination should consider future appointments of individuals with special skills in the methods of identification and resolution of conflicts. Successful identification and resolution of conflicts is somewhat less a function of institutional type than it is of the skills, personalities, and dynamics of its staff.

36. Both the assessment and operational modeling programs should be designed to ferret out potential sources of conflict and to make recommendations for dealing with them. The use of advisory committees, as recommended, is one approach that can be taken to deal with contentious matters.

37. The District, through its Department of Resource Coordination, should support and expand its educational programs as a means of building consensus and providing interested parties with insights to issues that they might not otherwise gain.

Permitting

The issuance of permits clearly affects how water is used and/or misused. Nevertheless, it is believed that the permitting process should not be used as the principal mechanism for influencing growth or water development and management patterns. The permitting process should be used to guarantee that prevailing policies are reflected. If

the permitting process is closely coupled with a policy plan, the two can be mutually reinforcing and the outcome can be very positive. If the operational water management plans recommended herein were used for guiding the District's permitting program, the District would be able to ensure conformance with its policies, even without any special statutory authority.

38. It is recommended that the current Resource Control Department actively seek broader responsibility in regulation and enforcement consistent with the proposal for a new Department of Resource Regulation and Enforcement.

Research

The SFWMD has an impressive inhouse research capability. It might be questioned, however, if some of that talent shouldn't be diverted into other elements of its programs. One question that should be raised is how far into areas of basic research the District should move. Clearly the WMD must guard against becoming overly academic. It is suggested that the objective of SFWMD's research program should be to translate scientific knowledge into action programs.

39. It is recommended that the planning programs of the District be assigned responsibility for identifying the research needed for their successful implementation. Furthermore, the District should more actively explore the opportunities for developing continuing arrangements with the state universities

as a means of satisfying some of their research needs, especially the more basic ones.

40. If the reorganization plan is implemented, some of the personnel in the Environmental Sciences and Water Chemistry Divisions should be shifted into the assessment program where their special expertise would be needed.

Continuation of Ongoing Programs

The SFWMD already has underway a number of promising programs for enhancing its role in regional growth management. They include: the Martin County Planning Assistance Program; the C-51 area negotiations; the use of forums such as the American Assembly; and the many public and other educational programs the District is engaged in.

41. It is recommended that the District expand its County Planning Assistance Programs, on the basis of priority of need, but eventually to embrace all counties within its region. This should become a major element of the recommended assessment and appraisal program.

42. It is recommended that the negotiated approach being tried relative to C-51 be used as a model for approaching other problems in which the future control of land use is important. This fits the scheme of operational water management recommended herein.

43. It is recommended that forums of the American Assembly type be continued as mechanisms for identifying issues and sources of conflict, and for suggesting alternative

courses of action. It is further recommended that this approach be modified to conform more to the Nebraska Environmental Assessment Technique. This appears to have the promise of better closure.

A LOOK TO THE FUTURE

No one can predict with certainty how well the growth destined to occur in Florida will be managed in the coming years. But one thing can be said, the Water Management Districts are the best hope for guiding the water and related land management decisions that will have to be made as that growth takes place. If the districts accept this challenge and use their broad authorities wisely, they can do much to ensure an adequate supply of good quality water for generations to come. But this will require that they become water managers in a much broader sense than in the past and, to take that step, they will have to move both boldly and cautiously to aid their constituent local governments and regional authorities. Acting in partnership with the stakeholders in their districts, they have the resources and understanding to tackle problems that no other organization can presently duplicate.

REFERENCES

1. Susan R. Abbasi et al., Long-Range Planning, Committee Print, U. S. House of Representatives, Committee on Science and Technology, 94th Congress, Washington, D.C., May 1976

2. Peter Black and Alex Morrison, Perspectives from Three Years' Experience of Regional Water Services in Thames Water, 13th American Water Resources Conference, Tucson, Arizona, unpublished, 1977.

3. Jonathan W. Bulkley and Thomas A. Gross, An Innovative Organizational Arrangement for Comprehensive Water Services: The Thames Water Authority as a Model for Complete Urban Areas of the Great Lakes, University of Michigan, School of Natural Resources, 1975

4. Bureau of Land and Water Management, The Developments of Regional Impact Program, Florida Department of Community Affairs, Division of Resource Planning and Management, 1984

5. Bureau of State Land Planning, The Areas of Critical State Concern Program, Florida Department of Community Affairs, September, 1984

6. Congressional Research Service, Assessing the Nation's Water Resources: Issues and Options, U.S. Government Printing Office, Washington, D.C., 1980

7. D. R. Feaster, From Flood Control to Water Management -- The Florida Experience, Annual Meeting Paper, unpublished, American Water Resources Association, Atlanta, Georgia, 1981

8. Federal Reserve Bank of Kansas City, Wester Water Resources: Coming Problems and Policy Alternatives, Westview Press, Boulder, Colorado, 1980

9. L. K. Fischer, A Critique of Nebraska Natural Resource Districts, Department of Agricultural Economics, University of Nebraska, Lincoln, Nebraska, 1981

10. Florida Department of Environmental Regulation, Final Report of Recommendations and Specific Actions: The Developments of Regional Impact Interagency Coordination Study, January, 1983

11. Florida House of Representatives, Florida's Water Management Districts -- Survey Responses, Select Committee on Growth Management, Tallahassee, Florida, 1983

12. Florida House of Representatives, Florida's Regional Planning Councils, Select Committee on Growth Management, Tallahassee, Florida, 1983

13. Florida House of Representatives, The Local Government Comprehensive Planning Act: The Issues, Select Committee on Growth Management, Tallahassee, Florida, 1983

14. Gary Gabelhouse, Natural Resource Districts: A Grassroots Approach to Conservation, Nebraska Association of Resource Districts, Lincoln, Nebraska

15. Martha W. Gilliland, et al., Simulation and Decision Making: The Platte River Basin in Nebraska, unpublished, Civil Engineering Department, University of Nebraska, Omaha, Nebraska, 1984

16. Stephen S. Light, Anatomy of Surprise: A Study of Resiliency in Water Supply Management Institutions during Drought, Ph.D. Dissertation, University of Michigan, School of Natural Resources, 1983

17. Frank E. Maloney and Richard Hamann, "Integrating Land and Water Management," Publication No. 54, Florida Water Resources Center, University of Florida, Gainesville, Florida, March, 1981

18. National Water Commission, Water Policies for the Future, U.S. Government Printing Office, Washington, D.C., 1973

19. Northwest Florida Water Management District, Fourth Annual Meeting Summary, Public Information Bulletin 80-1, Havana, Florida, 1979

20. _____, Fifth Annual Meeting Summary, Public Information Bulletin 81-1, Havana, Florida, 1980

21. _____, Sixth Annual Meeting Summary, Public Information Bulletin 82-1, Havana, Florida, 1981

22. _____, Eighth Annual Meeting Summary, Public Information Bulletin 84-2, Havana, Florida, 1983

23. Palm Beach County Board of County Commissioners, et al., Directions 84: Charting the Course for Palm Beach County, West Palm Beach, February 1984

24. Myron S. Rosenberg and Guillermo J. Vicens, A Model of the Process for State Water Resources Planning and Management: Actors, Roles, Responsibilities, and Interactions, 20th Annual A.W.R.A. Conference, unpublished, Washington, D.C., 1984

25. South Florida Water Management District, Annual Report, 1982-1983, West Palm Beach, Florida, 1983

26. _____, District Rules, Regulations, and Legislation, Permit Information Manual, Volume II, West Palm Beach, Florida

27. _____, Evaluation of Water Resource Related Issues Pertaining to the Comprehensive Planning Process in the City of West Palm Beach, West Palm Beach, Florida, July, 1983

28. _____, Floodplain Management Task Force Report on Issues and Recommendations for Executive Council Consideration, West Palm Beach, Florida, June, 1984

29. _____, Industrial Site Permitting Task Force Report on Issues and Recommendations for Executive Council Consideration, West Palm Beach, Florida, June, 1984

30. _____, Management and Storage of Surface Waters, Permit Information Manual, Vol. IV, West Palm Beach, Florida

31. _____, Martin County: SFWMD Water Resources Planning Assistance Program, West Palm Beach, Florida, June, 1984

32. _____, Report on Issues and Recommendations for Executive Council Consideration, Local Government Assistance Task Force, West Palm Beach, Florida, January, 1984

33. _____, Technical Publication 84-3, South Florida Water Management Model Documentation Report, West Palm Beach, Florida, 1984

34. _____, Water Use and Supply Development Plan, Volume 1-B and 1-C, West Palm Beach, Florida 1977

35. American Assembly on Groundwater, Memorandum to the Executive Director, SFWMD, West Palm Beach, Florida, April 1983

36. The John Muir Institute, Inc., Western Water Institutions in a Changing Environment, Volumes 1 and 2, Napa, California, 1980

37. U.S. Department of Energy, Institutional Constraints on Alternative Water for Energy, DOE/EV/10180-01, NTIS, U.S. Department of Commerce, Springfield, Virginia, November, 1980

38. U.S. Senate, History of the Implementation of the Recommendations of the Senate Select Committee on Natural Resources, Committee on Interior and Insular Affairs, Washington, D.C., 1969

39. U.S. Water Resources Council, The Nation's Water Resources, 1975-2000, Vol. 2, Water Quantity, Quality, and Related Land Considerations, Washington, D.C., 1978

40. _____, Improving the Planning and Management of the Nation's Waters, Washington, D.C., July, 1980

41. Warren Viessman, Jr., Coordination of Federal Water Resources Policies and Programs, Congressional Research Service, Library of Congress, Washington, D.C., 1978

42. Warren Viessman, Jr. and Claire Welty, Water Management: Technology and Institutions, Harper and Row Publishers, Inc., New York, 1985

APPENDIX I

A Listing of Those Consulted during the Conduct of the Project

A LISTING OF THOSE CONSULTED DURING THE COURSE OF THE STUDY

Note, the members of the SFWMD Governing Board and the District's staff that were contacted are not included in the following list.

1. Mr. Michael Bodle, DNR, West Palm Beach, Aquatic Plant Research and Control
2. Ms. Cynthia Chambers, Senior Planner, Broward County Office of Planning, Fort Lauderdale
3. Mr. Jeremy Craft, Division of Resource Management, DNR, Tallahassee
4. Mr. Wayne Daltry, Executive Director, Southwest Florida Regional Planning Council, Fort Meyers
5. Dr. John M. DeGrove, Secretary, Department of Community Affairs, Tallahassee
6. Mr. James Duane, Executive Director, Central Florida Regional Planning Council, Bartow
7. Mr. Roy Duke, District Manager, DER, West Palm Beach
8. Mr Clifford Guillet, Executive Director, East Central Florida Regional Planning Council, Winter Park
9. Ms. Maggie Hurchalla, County Commissioner, Martin County
10. Mr. Alex Jernigan, Post, Buckley, Schuh and Jerngan, Inc., Consulting Engineer, Miami
11. Mr. William McCartney, Executiev Director, Northwest Florida Water Management District, Havana
12. Mr. Frederick McCormack, Staff Director, Florida House Committee on Natural Resources, Tallahassee
13. Mr. James May, House Select Committee on Growth Management, Tallahassee
14. Mr. Donald O. Morgan, Executive Director, Suwannee River Water Management District, Live Oak

15. Mr. Jim Murley, Director, Division of Resource Planning and Management, DCA, Tallahassee

16. Mr. Barry Peterson, Executive Director, South Florida Regional Planning Council, Hollywood

17. Mr. Jack Pons, Division of Resource Management, DNR, Tallahassee

18. Mr. James L. Quinn, Bureau Chief, Bureau of State Land Planning, DCA, Tallahassee

19. Mr. Glen W. Robertson, Deputy Director, Office of Planning and Budgeting, Office of the Governor, Tallahassee

20. Ms. Diana Sawaya-Crane, Bureau Chief, Bureau of Land and Water Management, DCA, Tallahassee

21. Mr. Sam Shannon, Executive Director, Treasure Coast Regional Planning Council, Stuart

22. Mr. Robert Usherson, Planner, Dade County Planning Department, Miami

23. Mr. Reginald Walters, Director, Dade County Planning Department, Miami

24. Mr. John Wehle, Special Assistant, DER, Tallahassee

25. Ms. Dorothy Wilken, County Commissioner, Palm Beach County, West Palm Beach

26. Mr. Duke Woodson, Director of Planning, St. Johns River Water Management District, Palatka

27. Dr. Bernie Yokel, Audubon Society, Maitland

28. Mr. Roland Eastwood, County Commissioner, Lee County, Fort Meyers

APPENDIX II

Additional Information on Florida's Regional Planning Councils

ADDITIONAL INFORMATION ON FLORIDA'S REGIONAL PLANNING COUNCILS

To further distinguish between RPCs and WMDs, it is useful to note other distinctions provided for in Chapter 160. These include:

(1) Membership. RPCs are made up of aggregations of counties and their membership, in addition to Governor appointees, representatives from each county in the region as well as other local governments.

(2) Duties. Chapter 160 provides the Councils a role in Emergency Management (also in Chapter 23, F.S.).

NOTE: Unknown to virtually everybody, Chapters 23 and 160 have been consolidated and incorporated into Chapter 186, Florida Statutes. As a result, a closer continuity between the State and Regional planning program has been provided.