



The Governor's Commission for a

Sustainable South Florida

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Executive Director

October 1, 1995

The Honorable Lawton Chiles
Governor, State of Florida
The Capitol, Room 1501
Tallahassee, FL 32399-0001

Dear Governor Chiles:

It is with much pleasure, enthusiasm, and satisfaction that I provide you with this Initial Report of the Governor's Commission for a Sustainable South Florida. It is the product of our first seventeen months of intensive meetings and deliberations. The Report was unanimously approved by the Commission at its last meeting and was strongly endorsed by the Commission's five non-voting Federal members.

We believe endorsement and support by you, your agencies, cabinet agencies and other affected governmental jurisdictions will move the South Florida region toward long-term recovery of its natural systems and its decaying urban centers and enable them to be sustained at a level we would find appropriate for future generations of South Floridians.

The Initial Report reaffirms the value of the consensus process which is essential for further Commission involvement in Everglades restoration and urban redevelopment activities. The assistance of the Florida Growth Management Conflict Resolution Consortium was invaluable. The consensus building process proved successful largely because of the dedicated attendance and sustained commitment of the Commission members. The process has established an unprecedented sense of reciprocal trust and common commitment among Commission members. This, in turn, lays the foundation for continued efforts toward finding ways to restore the ecosystem while maintaining a healthy economy and quality communities. One of several examples of the trust that has been established among Commission members is a private sector agreement to provide agricultural lands for federal research on more water-tolerant varieties of sugar cane. Such research is important in protecting soils from subsidence and in enhancing water storage capacity of sugar cane growing areas. This will assist in the development of a sustainable agriculture in the Everglades Agricultural Area.

The unanimous adoption of the Initial Report does not reflect the often contentious discussions and deliberations that led to its adoption, but its content does represent the months of difficult negotiations that were needed to find means of resolution. The Commission broke new ground in consensus building as diametrically opposed stakeholders gradually realigned their positions to reach sustainable solutions. For example, the Commission agreed that past water management activities in South Florida, geared predominantly toward satisfying urban and agricultural demands, have often ignored the many needs of the natural system, particularly in drought conditions. The Commission, under the consensus approach, has strongly recommended that the South Florida Water Management District establish minimum flows and levels describing when withdrawals from a water source must cease. The management strategy proposed is to utilize water more efficiently to avoid ever reaching these critical threshold levels. For the present, the Commission recommends reconsideration of present surface water management practices, examination of present operational and conveyance capabilities, and improved coordination between water use and water control entities to increase water storage in the existing system.

Meeting restoration and future water supply needs for the region is an achievable goal. As our Technical Advisory Committee unanimously agreed in the enclosed water budget report, "It is likely that just a portion of increased flows to the Atlantic estuaries from Dade, Broward, and Palm Beach counties will be sufficient to meet natural systems needs and increased urban needs." The Committee found that, annually, we are wasting two million acre feet of water by drainage to tide during the typical five month wet season. The challenge is to find ways to retrieve and store that water. In addition to reviewing surface water storage options, we will soon receive and review recommendations from our Technical Advisory Committee on the potential of deep aquifer storage and recovery techniques for storing water supplies for periods of multi-year drought.

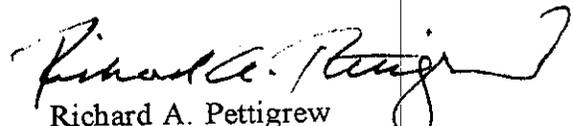
While the Commission has noted the serious decline of the Everglades, Florida Bay, the Keys, and other natural system components, it has also found significant urban decline and decay in the southeast counties. This degeneration is particularly evident in the area between the two railroad tracks which were constructed down either side of the coastal ridge by Henry Flagler and the Seaboard Railway. This is the only elevated land expanse in the region which is immune to storm surge. The Commission has earmarked this area for significant redevelopment and redesign. The Commission's vision is one of economically vibrant urban centers that provide a safe, quality, and liveable lifestyle for residents and visitors alike. The Commission's introduction of the "sustainable communities" concept, the "Eastward Ho!" initiative, and the strong emphasis on defining urban development boundaries are three means of rediscovering and re-energizing urban corridors and communities. This also assists in curtailing the sprawl which threatens the remaining integrity of the natural system. The focus

on South Florida communities is one of the most creative segments of the Commission's work. The Commission's recommendations are designed to utilize de-regulatory and fiscal incentives rather than command and control techniques to contain sprawl and develop truly sustainable communities.

As a result of consultation with your office and to assist in the Restudy effort, our next immediate objective is to respond to the request of the Corps of Engineers and the South Florida Ecosystem Restoration Task Force that the Commission develop its preferred conceptual alternative for Everglades restoration. This effort will enable the Corps to accelerate development of its conceptual restoration plan. This plan can then be submitted for Congressional authorization in advance of the completion of the entire Restudy. We believe that the Restudy must not only focus on Ecosystem restoration, but at the same time, should also focus on the provision of long-term urban and agricultural water supply needs for the future.

The entire membership of the Commission commends you for your foresight in creating a body that can look beyond discrete issues and begin a comprehensive region-wide examination of an interconnected natural system the recovery of which can only be achieved by an understanding of the entirety of its parts. Toward that end, we will continue to focus on fundamental ecosystem restoration issues, address outstanding concerns, and serve as your sounding board in forging mechanisms that will move us to a sustainable South Florida. We are prepared to assist in implementing these report recommendations in any manner you deem appropriate.

Sincerely,


Richard A. Pettigrew
Chairman

c: Lt. Governor MacKay
Commission Members
Members of the Florida Cabinet
Florida Growth Management Conflict Resolution Consortium

enclosure



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Sustainable South Florida

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Executive Director

INITIAL REPORT

October 1, 1995



Acknowledgements

This Initial Report is the result of an incredible commitment made by numerous individuals and organizations. Several individuals have, however, far exceeded any expectations placed on them from the outset. We feel compelled to recognize them here. We thank them for their unending and unselfish commitment to this effort. Without their assistance, "sustainability" would remain merely a concept rather than a reality we hope to realize.

Kelly Alger, AmeriCorps Program
Carlene Barrett, Florida Department of Commerce
Henry Bittaker, Florida Department of Community Affairs
Mark Buchbinder, Esq., FL Growth Mngmnt Conflict Resolution Consortium
Dionè Carroll, Esq., Governor's Commission
Brenda Lee Chalifour, Esq., Governor's Commission
Sheri Coven, Florida Department of Community Affairs
Frank Duke, South Florida Water Management District
April Gromnicki, AmeriCorps Program
Bob Jones, Florida Growth Management Conflict Resolution Consortium
Agnes McLean, Governor's Commission
Mollie Palmer, Florida Department of Environmental Protection
Aimone Pasqualin, Governor's Commission
Nanciann Regalado, National Audubon Society
Marilyn Scholl, Governor's Commission
Robin Schwartz, South Florida Water Management District
Ben Starrett, Florida Department of Community Affairs
Herb Zebuth, Florida Department of Environmental Protection



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October, 1995

*It's the action, not the fruit of the
action, that's important.*

You have to do the right thing.

*It may not be in your power, may not
be in your time,*

that there will be any fruit.

*But that doesn't mean you stop doing
the right thing.*

*You may never know what results
come from your action.*

But if you do nothing,

there will be no result.

- Gandhi

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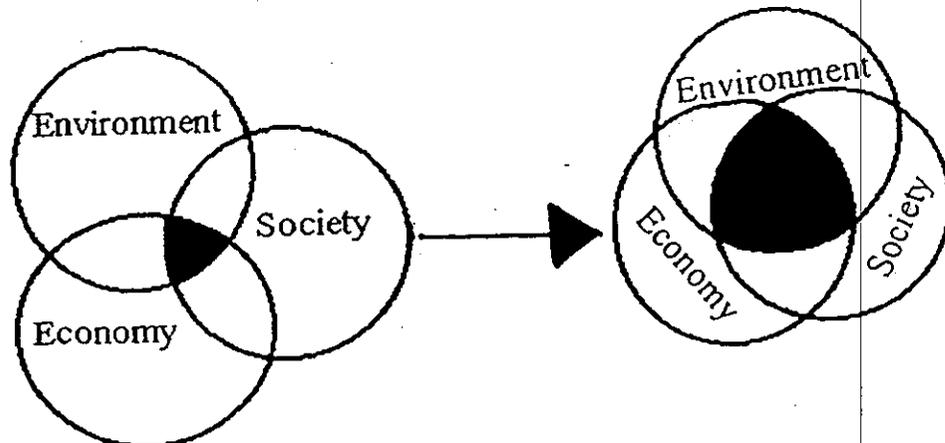
PREFACE

South Florida: A Sustainable Vision For 2020

Anyone who has lived in South Florida more than a decade, has experienced some decline in the quality of life. Whether it is periodic water shortages or flooding, increased urban congestion and traffic, fewer open spaces and natural areas, or increased pollution and crime, the trends are pointing in the wrong direction. Continuing our current course will result in more urban sprawl, dirtier air and water, more plant and animal kills, more overcrowded schools and housing, and growing social and economic disparity. What type of community would we want our children and grandchildren to inherit?

The Governor's Commission for a Sustainable South Florida has spent 17 months studying these challenges and trends and now recommends ways to improve the quality of life in South Florida. Vital to this effort is restoring a healthy Everglades system--the heart and soul of South Florida's ecosystem and water supply. We are confident that by working together to build on South Florida's tremendous assets--its human, natural, and economic resources--we can reverse the negative trends and create sustainable communities that are safe, prosperous, and beautiful. **Sustainable communities are those that believe today's growth must not be achieved at tomorrow's expense.**

Our vision for the future of South Florida is represented by the symbol shown below. These three interconnected circles represent the often competing interests of our environment, our people, and our economy. Together our task is to increase the shaded area of common interests until we are integrated into a sustainable circle where all our needs are perfectly balanced.



To achieve our vision we are guided by 5 broad principles:



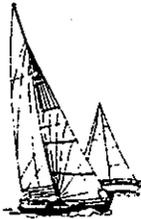
Restore Key Ecosystems - restore the Everglades and other ecosystems to provide adequate supplies of clean, safe water for the natural, human, and economic systems;



Achieve a More Clean Healthy Environment - prevent and reverse pollution in South Florida's air, land and water, plants and animals;



Limit Urban Sprawl - establish urban development boundaries to protect environmental resources and encourage urban redesign and redevelopment supported by good public transportation;



Protect Wildlife and Natural Areas - provide for sufficient open space to protect wildlife, and provide natural and recreational areas for public use; and



Create Quality Communities and Jobs - provide life-long education and training to ensure a better educated and higher paid workforce while improving quality of life through better health care, housing, safety, and cultural programs.

If we continue down the current path of divided special interest groups fighting each other over scarce resources, South Florida's future is grim. That path leads to polluted waters; droughts and floods; fouled beaches; and loss of plants, animals, and reefs. It leads to an increasingly divided society with ethnic and racial tensions, economic disparity and crime. It also leads to overcrowded schools with students that cannot compete in a global economy.

If we come together, we can choose a different path that leads to a brighter vision for South Florida in 2020. We can see a thriving global and hemispheric business center with a happy, well educated, multi-cultural workforce. Our people, our environment, and our economy are operating in balance. We live in a clean, healthy environment supported by a sustainable ecosystem. Education, health care, housing, and public transportation are excellent. We share a sense of the common good with greater economic equity and appreciation for our multi-cultural diversity. We understand and support the concepts of sustainability. We are all inter-dependent with each other and our environment. Our symbol now looks like the one shown below, and we are proud to pass South Florida on to our children and grandchildren.



Executive Summary

The Governor's Commission for a Sustainable South Florida was created by Executive Order 94-54 to make recommendations for achieving a healthy Everglades ecosystem that can coexist and be mutually supportive of a sustainable South Florida economy and quality communities. What follows is the Commission's Initial Report to the Governor and the Cabinet that presents its findings and recommendations pursuant to the tasks delineated in the executive order. The October 1, 1995 Initial Report was unanimously adopted at the Commission's September 1995 meeting. In addition, the 5 non-voting federal members of the Commission offered strong endorsement and support of the Initial Report.

South Florida, including the Everglades ecosystem, its densely populated coastal areas, and fertile agricultural lands, is widely recognized as a unique area of state, national, and international importance. The region is an international, commercial, agricultural, and tourist center, with a diverse population that reflects varied ethnic, economic, and social values. The desirability of South Florida's climate, geographic location, cultural and social setting, and thriving economic opportunities has contributed to a population explosion that is predicted to triple the region's population by the year 2050. The by-products of such growth, including sprawling development patterns, water management activities required to support human needs, and conversion of agricultural land to urban and suburban uses have had increasingly negative impacts on the Everglades ecosystem. This system, which is a world ecological treasure and the major source of fresh water for the citizens of South Florida, is showing alarming signs of stress.

The situation that faces the region today is not one where we can choose between having either a healthy environment or a strong economy in South Florida--the two are inseparable. Many people fail to realize the unavoidable link between the human community and the natural system surrounding it. The human community is dependent on the surrounding natural system for public health, safety, and welfare; continued economic viability; and enhanced quality of life. The natural environment is self-perpetuating, but it depends on the future wisdom of its human inhabitants for its continued survival.

After 17 months of work, the Commission reached the following conclusions about the present state of the region and recommendations for the future. This summary provides an overview of the major themes identified by the Commission and some of the specific actions it recommends.

Section A. Manage Water to Achieve a Sustainable South Florida

Water resources have always been a defining factor in South Florida. Historically, the natural system was self-perpetuating but inhospitable to human habitation. The Central and Southern Florida Flood Control Project (C&SF), one of the largest drainage systems in the world, was begun in the 1950s in order to

accommodate urban and agricultural development. Approximately one half of the original Everglades have been drained and as a result, water is now being discharged to tide in unprecedented amounts and velocities.

The construction of the C&SF allowed increased urban and suburban development and augmented agricultural uses. At the same time, increases in demand resulting from this growth create stress on the remaining natural system. Population and agricultural distribution patterns, the former concentrated in coastal areas and the latter predominantly in the interior, continue to affect current and future water demands.

Currently there are approximately 200 water management-related plans which are largely uncoordinated and inconsistent. Most of South Florida has been designated a "Critical Water Supply Problem Area" and large capital investments over the next decades will be needed for restoration, protection, and the provision of increased water supply to the region.

Commission Objectives

- To coordinate and integrate water management and restoration plans and ensure such plans incorporate principles of sustainability, full cost accounting, ecosystem management, and adaptive management.
- To restore and enhance regional ground water storage.
- To protect ground and surface water capacity through development of alternative sources of water and other operational and allocation schemes.
- To integrate land use with water management.
- To understand the limits of a "managed system" and set realistic flood control goals.

Recommendation Highlights

The Commission recommends:

- Assessing, exploring, and changing surface water management systems to allow more water to be stored at higher levels in the ground.
- Identification and development of alternative water sources and conservation activities to protect surface and ground water functions and capacity.
- Identification of South Florida's preferred alternative for the U.S. Army Corps of Engineers "Restudy."
- Requiring compatibility between local comprehensive plans and regional water supply plans of the South Florida Water Management District.
- Ensuring that new water demands do not adversely affect the sustainability of the ecosystem.
- Identification of flood prone areas and incorporating these limitations into local comprehensive plans.

Section B. Increase Focus on Pollution Prevention

Pollution reduces the ability of the ecosystem to sustain itself, affecting animal and plant populations living within it (including humans). The cumulative effect of millions of individual decisions compounds the effects of large institutional polluters. Environmental agencies have been relying on traditional means of controlling pollution through permitting, compliance, monitoring and enforcement. Unfortunately, the area's growth has rendered these insufficient. A broader range of strategies is needed. Prevention is less expensive and easier to implement than restoration, mitigation, or cleanup. Education (individual and institutional) is one of the keys to reducing pollution.

Commission Objectives

- To increase the use and effectiveness of pollution prevention measures.
- To improve regional air and water quality for wildlife, humans, and their surrounding environment.

Recommendation Highlights

The Commission recommends:

- Assessing the current health of the ecosystem and correcting the problems that are identified.
- Enhanced pollution prevention and control programs.
- Enforcement of water quality rules and standards.
- Improved regulation of construction/demolition debris and enhanced efforts to control illegal dumping.
- Correct septic tank, package plant, and stormwater runoff pollution in the Florida Keys.

Section C. Combat the Spread of Exotic Species

Florida is particularly vulnerable to invasion by exotic (non-indigenous) plant and animal species. These are organisms that spread rapidly and harmfully within natural areas by out-competing native species, primarily due to lack of natural controls. Existing regulatory programs and sources of funding are not adequate to curtail and control invasive exotics. These now expand over 1.5 million South Florida acres and are rapidly crowding out native species.

Commission Objectives

- To limit the spread and reduce the presence of invasive non-indigenous species in South Florida.

Recommendation Highlights

The Commission recommends:

- Expanding the list of prohibited invasive non-native plants.
- Incentive/regulatory approaches to removal of exotics and good land stewardship practices.
- Assessment of extent of invasive non-indigenous animal populations.

Section D. Transform Urban Sprawl Into Quality Development Patterns

Rapid population growth in South Florida is causing the proliferation of urban sprawl--a development pattern characterized by scattered, decentralized, low density development that is not functionally related to adjacent land uses. This results in: the depletion of natural resources, an automobile-dependent society, lack of coordination between land use decisions and siting of mass transit facilities, over crowded schools, increased pollution, inefficient urban design, and rapid conversion of agricultural lands and other open spaces to urban uses. Current growth and development patterns are not sustainable either economically or environmentally.

Commission Objectives

- To establish urban development boundaries and promote infill development and redevelopment.
- To increase the use of better, more compact, and functional urban design.
- To invest in the public transit system to ensure travel choices, mobility, and access. And to manage it to support sustainable development and curtail urban sprawl.
- To acquire, protect, and maintain open space outside of designated urban development boundaries to ensure adequate water storage, public recreation facilities and parks, and agriculture and natural systems support.

Recommendation Highlights

The Commission recommends:

- Creation of a "sustainable communities" program with regulatory and fiscal incentives.
- Development of criteria and a process for establishing urban development boundaries.
- Reducing urban sprawl through the local comprehensive planning process.
- Establishing streamlined, expedited permitting to promote infill/redevelopment.
- Launching an "Eastward Ho" initiative aimed at infill/redevelopment in the southeast corridor between and around the Florida East Coast and the CSX

- railroad tracks between Palm Beach and Dade Counties.
- Investing in public transit, mobility and access.
- Providing alternatives to hurricane evacuation.
- Promoting sustainable urban design and construction.

Section E. Toward Higher Employment and Greater Business Opportunities

As South Florida prepares for the 21st century, significant quality of life and standard of living challenges face its residents. Continued enjoyment of the quality lifestyle that has historically attracted residents and visitors to South Florida will largely depend on how the region responds to continued growth and changing national and international economies.

Traditionally, the economy of South Florida has been dominated by construction, agriculture, tourism, and the service demands of a rapidly increasing resident base. Recently, the region has experienced rapid growth in the service sector and stagnation or overall decline in the manufacturing sector. While total employment has increased, per capita income has stalled. A coordinated regional economic development plan is necessary to ensure focus and balance in South Florida's growth.

Commission Objectives

- To increase high wage employment in the region.
- To attract, support, protect, and retain industries critical to a balanced, quality economy such as: tourism, agriculture, and international trade.

Recommendation Highlights

The Commission recommends:

- Creation of a regional economic development alliance.
- Expansion of air and seaport infrastructure development and linkages with other transportation modes through intermodal centers.
- Convening of a regional trade summit.
- Promotion of South Florida's natural assets as its underlying strength and uniqueness for tourism.
- Creation of incentives that encourage new technology, new food processing and production and new related businesses within agricultural production areas.
- Establishment of a uniform "green" labeling program that identifies products produced under environmentally sound practices.

Section F. Improve Quality of Life

In addition to meeting the future needs of the region in terms of water management, environmental protection, urban form, and economic development, other key societal areas must improve to achieve a lasting and sustainable South Florida. These areas include education, housing, health care, safety, and recreational opportunities.

Commission Objectives

- To create an education system, compatible with the principles of Blueprint 2000, to better address:
 - (1) the need to continually educate and retrain the region's workforce.
 - (2) the needs of business, research and development, and the global market.
- To increase funding of the school system to obviate the current financial shortfall and relieve overcrowded conditions.
- To physically site schools, according to principles of sustainability, and to promote more compact urban development patterns.
- To meet South Florida's residential needs by creating an adequate supply of affordable housing and addressing the requirements of populations with special needs.
- To create open, accessible health delivery systems at the state and national levels.
- To create safe communities in South Florida.
- To create an array of cultural and recreational opportunities that are affordable and available to all.

Recommendation Highlights

The Commission recommends:

- Increased funding for education.
- Increased housing availability for the low and very low income households.
- Support for specialized housing programs to keep elders at home or in independent living arrangements.
- Institutionalized and adequately funded community-based law enforcement efforts such as "community policing," equestrian and bike patrols, AmeriCorps, and Citizens on Patrol.
- Shared and extended use of public facilities for recreational purposes.

Section G. Regional Governance: Intergovernmental Coordination and Partnerships.

Governance and planning in South Florida involve a very large number of agencies. In many cases the efforts of these agencies are not coordinated.

Additionally, in many instances overlapping jurisdictions and the lack of consistent time frames further complicate planning in the region. A regional framework must be developed to ensure that plans are coordinated, get implemented, and provide long-term protection of public investments and natural values.

Some intergovernmental efforts are currently underway to coordinate South Florida ecosystem restoration efforts. Additionally, the Governor's Commission for a Sustainable South Florida can provide a coordinated planning framework critical to achieving sustainability in the region. To effect intergovernmental coordination in implementing regional planning, the Commission proposes the creation of an Everglades Charter and Everglades Partnership. The charter is conceptualized as eventually supplanting the present South Florida Ecosystem Restoration Task Force, which is principally made up of federal assistant secretary level officials. The charter would better represent state, regional, and local jurisdictions. The partnership is conceived as a consortium of public and private institutions and individuals working cooperatively to ensure that the Everglades ecosystem is restored and maintained through an objective, scientific peer-review process involving a "think tank" of federal, state, regional, local, and university resources. Furthermore, the Commission believes it should continue to act as a liaison among a variety of stakeholders, including all entities involved with planning and regulation in South Florida.

Commission Objectives

- To improve regional governance and planning coordination, cooperation and effectiveness.

Recommendation Highlights

The Commission recommends:

- The creation of an Everglades Charter and Partnership.
- Implementation and funding for the Monroe County 2010 Comprehensive Plan.
- Creation of countywide or greater water supply entities.

Section H. Improve Scientific Understanding and Information Coordination

Adequate, accessible, and scientifically valid information is a critical tool in any management plan. The challenge in providing such information for ecosystem management in South Florida is the need to synthesize and unify data produced by a variety of governmental programs and environmental projects, dealing with a number of issue areas across diverse political boundaries. Increased coordination and cooperation among federal, state, and regional scientific research and management agencies will be essential.

Commission Objectives

- To develop a common scientific data pool (GIS) to be used for implementing ecosystem management in South Florida.
- To establish and coordinate science and research priorities for the South Florida ecosystem.

Recommendation Highlights

The Commission recommends:

- Identify science research priority needs for the South Florida ecosystem, inventory available data, and develop a GIS network for ecosystem managers.
- Development of modelling, monitoring, and special studies action plans for the South Florida ecosystem.

Note to Readers: While the report addresses numerous subject areas and makes 110 detailed recommendations, time constraints, the size of the task at hand, and the ongoing nature of the drafting process prevent it from being exhaustive. Important subject areas such as energy production and consumption, global population growth, and inclusion of additional sectors of the economy in the "Critical Industries in the Region" section, will be addressed in future deliberations of the Commission.

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MISSION STATEMENT

"There are no other Everglades in the world" (Douglas, 1947). All life in southern Florida is influenced by this vast ecosystem. It is the mission of the Governor's Commission for a Sustainable South Florida, representing diverse interests, to develop recommendations and public support for regaining a healthy Everglades ecosystem with a sustainable economy and quality communities. The Commission will recommend a 5-year action plan containing strategies, actions, and measures of success to the Governor and the South Florida community for achieving positive change that enhances the ecological, economic, and social systems upon which South Florida and its communities depend. Once implemented, these strategies will bolster the regional economy, promote quality communities, secure healthy South Florida ecosystems, and assure today's progress is not achieved at tomorrow's expense.

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CHAPTER I

BACKGROUND AND UNDERSTANDING

In this chapter we provide background information concerning the challenges and opportunities that confront the South Florida region today. How and why the Governor's Commission for a Sustainable South Florida came into being and its charge are explained. An overview of the physical, geographic, and socio-economic context of the area is given, as is an introduction to the concept of "sustainability."

A. INTRODUCTION

"Sustainability" is most often defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). In short this means living within your means or living off the interest, not the principal.

South Florida is laden with assets. At many levels, the South Florida community is thriving. It is a mecca for business, tourists, retirees, and outdoor enthusiasts. As concluded by the South Florida Vision 2025 Assembly on May 26, 1995, "South Florida has the potential to become one of the premier regions in the world. It has a wonderful climate, multi-cultural population, an expanding economy, and many other assets" (SFRPC, 1995b). It also has many treasures, both natural and socio-political. Take for example the unique and bejeweled waters of the Florida Keys or Mahogany Hammock in Everglades National Park. Stroll along the barrier islands of Captiva or Sanibel. Experience bass fishing in Lake Okeechobee or canoe on the Loxahatchee River. Commune with nature in the Matlacha Pass and Pine Island Wildlife Refuges. Discover the wonder of seeing newly hatched sea turtles make their way toward the Atlantic Ocean, or admire hundreds of Roseate Spoonbills as they roost in Flamingo. Examine the bold, innovative planning and zoning initiatives of the City of Boca Raton, the Island of Sanibel, Monroe County (i.e., its new rate of growth ordinance), and the delightful town centers of Coral Gables and Coconut Grove. Sample some of the world's premier fresh citrus and vegetables. Experience the vibrancy of Calle Ocho in Miami's Little Havana, or watch the setting sun over the fishing vessels nestled in the scenic harbors of Naples or Ft. Myers. All of these and more are vignettes of South Florida which beckon and seduce its current and future residents, making it one of the highest growth areas in the country.

In addition to its natural and social treasures, the South Florida region has many allies. There is an abundance of active players in South Florida who are dedicating time, money, and mental energy to fix some of South Florida's problems. A notable list, by no means complete, includes organizations such as the South Florida Ecosystem Restoration Task Force and its participating federal

1 agencies, the Seminole Tribe, the Miccosukee Tribe of Indians, universities from
2 all over the world, state agencies, 5 regional planning councils, untold efforts at
3 the city and county levels, and incredible citizen involvement--the most heralded
4 and lauded being Marjory Stoneman Douglas, the original defender of the
5 Everglades.

6
7 Unfortunately, trends facing South Florida today defy most principles of
8 sustainability. Much damage has been done to South Florida's environmental
9 systems such as: the channelization of the Kissimmee River in the 1960s and
10 '70s; the deterioration of water quality and aquatic life in Lake Okeechobee during
11 the last 2 decades; the excessive drainage caused by the Golden Gate and Faka
12 Union canal systems within Collier County; and the environmental degradation of
13 the Everglades, Florida Bay, and the coastal reefs (SFWMD, 1994b). South
14 Florida's systems continue to suffer additional casualties, including severe
15 degradation of estuaries and aquatic life and loss of valuable uplands. As noted
16 in The Save Our Everglades Report, "Our quality of life is inextricably linked to
17 the health and viability of natural systems; that a healthy Everglades system is
18 vital to natural plant, animal and human populations alike" (Governor's Office,
19 1993: p. 6).

20
21 Marjory Stoneman Douglas once said,

22
23 *As water is the liquid heart of Florida, so the people and their leaders are*
24 *its intellect. In the past, the dark side of this intellect has polluted,*
25 *exploited and wasted the water and the wetlands. Still, there is hope and*
26 *expectation that the mind and will of man will triumph, reverse the errors,*
27 *restore and preserve the wet natural systems that sustain the precious*
28 *water.*

29
30 The Everglades ecosystem today embraces a massive, unique, and fragile natural
31 system with over 5 million human inhabitants. This water-dominated system
32 encompasses a myriad of interconnected freshwater rivers, lakes, marshes, prairies,
33 forests, and estuaries, and includes the Kissimmee River Basin, Lake Okeechobee,
34 the Everglades, Big Cypress Swamp, and the estuaries of Florida Bay, Biscayne
35 Bay, Charlotte Harbor, and Indian River Lagoon. It also includes the tourist
36 meccas surrounding Orlando, such as Disney World; the Everglades Agricultural
37 Area south of Lake Okeechobee; small rural towns such as Pahokee, La Belle, and
38 Belle Glade; and urban centers, such as Ft. Myers on the west coast and the cities
39 on the southeast coast stretching from Ft. Pierce to Key West.

40
41 In the past, as population grew, the existing natural system diminished through
42 drainage, development, agriculture, and other human-induced activities. With over
43 half of the Everglades' wetlands gone and with population projected to triple by
44 the year 2050, South Florida must reassess and redirect its priorities. The
45 ecological price of our past endeavors haunts our present. Just as the canary in

1 the coal mines was a harbinger of imminent death, the current condition of the
2 Everglades ecosystem, particularly Florida Bay, sends warnings of mortal danger.
3 Florida Bay, the Everglades ecosystem's "end of the line," may be dying. The
4 Bay's signals: reduced pink shrimp and Florida lobster catches; mangrove,
5 seagrass, and sponge die-offs; huge algal blooms; recent fish kills; hypersalinity;
6 a deterioration of estuarine productivity (McIvor et al., 1994); and a declining
7 coral reef system (the only coral reef system in the continental United States)
8 denote a system possibly on the verge of catastrophic collapse. "The productivity
9 of Florida Bay is declining under current management practices" (McIvor et al.,
10 1994: p. 118). Even "the pace of deterioration seems to be increasing" (Science
11 Subgroup, 1994a: p. 3). The Bay's possible demise results from both its physical
12 location (at the end of the line) and the alterations of its natural hydrologic,
13 biological, and chemical properties which are connected to the Everglades
14 ecosystem at large. Florida Bay's repair requires restoration of the larger system's
15 hydrologic health (Ramsdell, 1995).

16
17 Potentially, if the problems of Florida Bay are left unattended, a quarter of the
18 present level of tourists and seasonal residents could be lost. This would threaten
19 thousands of jobs and tens of millions of dollars in personal income and would
20 probably exceed the potential losses associated with a decline in commercial
21 fishing. It is estimated that 12,000 jobs and \$200 million annually in personal
22 income from tourist impacts; over 500 jobs and \$32 million annually in personal
23 income from pink shrimp impacts; and 2,800 primary and secondary jobs and \$20
24 million annually in personal income from commercial harvesting of lobster,
25 snapper, and grouper are threatened. Because of the lag in tourism behind
26 environmental degradation, losses in tourism are likely to persist, even if the Bay
27 were to recover relatively quickly. (Congressional Research, 1994)

28
29 The larger Everglades ecosystem is also at a precipitous juncture. Its warning
30 signs have been varied and manifest for decades. Nesting populations of wading
31 birds have decreased by 90% (Bancroft et al., 1994), and 56 plant and animal
32 species are either threatened with, or endangered with extinction. In addition to
33 the catastrophic Florida Bay events described above, the Everglades have suffered
34 wetland losses, organic soil subsidence, and exotic plant and animal invasions
35 (SFERWG, 1994).

36
37 The hydrology of South Florida has been deeply affected by changes brought
38 about by human activities over the past decades. "Not only has the entire
39 integrated system of water flow been rearranged but soil composition, habitat, the
40 identity and numbers of land and water species, and the relationship between fresh
41 and salt water have all changed" (p. xi). Functional losses to the system include
42 (1) reduced spatial extent of aquatic and total system productivity, (2) reduced
43 aquatic productivity of the southern Everglades due to shortened hydroperiods and
44 interrupted flows, (3) reduced spatial extent of wet prairie/slough and related
45 aquatic productivity throughout the remaining wet prairie/slough-sawgrass-tree

1 island mosaic, (4) loss of habitat diversity, and (5) reduced possible early dry
2 season feeding habitat of wading birds (Davis et al., 1994).

3
4 The interconnection of the system, both within and without its boundaries, cannot
5 be ignored for its contributions and its complexity.

6
7 The ecosystems from the Kissimmee River, through the Everglades, and
8 the Bay and on to the barrier reefs off the Keys are, in fact, connected and
9 constitute an interdependent landscape-seascape, but have been viewed and
10 managed as if they were in isolation from one another. What is now
11 needed is a broader perspective which integrates the watershed, the Bay,
12 the Keys and the reef (Boesch et al., 1993: p. iii).

13
14 Water quality problems also abound. As described in the South Florida
15 Ecosystem Restoration Working Group's (SFERWG) report (1994), nutrients have
16 been identified as a concern for Lake Okeechobee, the Everglades, the Indian
17 River Estuary, and the Caloosahatchee River. Anthropogenic nutrients or
18 disturbances in the nutrient cycling process have been suggested as a possible
19 cause of symptoms of ecological degradation observed in the Florida Keys
20 National Marine Sanctuary and the coral reef system. Other water quality issues
21 include the widespread contamination of plants and animals throughout the
22 Everglades ecosystem with mercury from unknown source(s), contamination of
23 public drinking water supplies along the lower east coast with synthetic organic
24 chemicals, contamination of the Miami River, and seagrass loss due to poor water
25 quality. Toxicological contaminants of concern in the system include metals,
26 organic compounds, and pesticides.

27
28 The SFERWG reports that nutrient-laden agricultural runoff has altered wetland
29 plant communities which diminishes their role in the food chain and habitats.
30 Extensive eutrophication has been found in the Everglades. Elevated
31 concentrations of pesticides or their derivatives have been found in great egrets and
32 other wading birds from Water Conservation Area-1 (WCA-1) (SFERWG, 1994).
33 Florida's water quality is also poor when compared to the national level. For
34 instance, Biscayne Bay was ranked in the top 10 list of estuaries having the
35 potential for pesticide impacts to estuarine organisms (Pait et al., 1992). In
36 addition, the state was classified as the worst in the U.S. in a 1991-1992
37 composite water pollution index (Hall and Kerr, 1991).

38
39 Another culprit in the demise of the system has been the systematic loss of the
40 ecosystem's expanse. Since the 1900s the roughly 4 million acres of the
41 Everglades ecosystem have been reduced to less than half that size. Due to the
42 consequences of farming and urban/suburban development, South Florida's
43 landscape is no longer able to adequately serve its natural functions. Even if the
44 water management and water quality problems can be perfectly solved, the
45 remaining Everglades will still fail if they are consumed by suburban sprawl.

1 Current land use trends are not sustainable and harsh measures must be undertaken
2 to curtail the suburbanization of what is left of South Florida.
3

4 The detrimental effects of all the above changes are broad and far reaching. They
5 directly impact the tourist industry and the local/regional economy which are
6 based on, and continue to depend on, a healthy natural system. In addition, water
7 and air borne pollutants can have immediate and long term health effects on South
8 Florida, threatening fundamental public health, safety, and welfare.
9

10 Based on the above, it is easy to see that our present course in South Florida is
11 not sustainable. The inextricable link between the human community and the
12 natural system is obvious. The natural system is the basis for our public health,
13 safety, recreation, welfare, and aesthetic activities. "Many who live in South
14 Florida do not realize the benefits they receive continuously from a functioning
15 natural ecosystem and what ecosystem collapse would mean to them" (p. 6). The
16 current trends cannot continue. Time is of the essence. If we are to curtail the
17 deterioration and evade further catastrophe, urgent strategic action is needed.
18

19 Henry Ford once stated, "Don't find fault. Find a remedy." The remedies are
20 clear. Hydrologic restoration is both the key and a prerequisite to ecosystem
21 restoration (Science Subgroup, 1994b; SFWMD, 1994b; SFERWG, 1994;
22 Robertson and Frederick, 1994). Restoring the historic volume, timing, and
23 location of freshwater flow to the Everglades, Florida Bay, Biscayne Bay, and
24 other water bodies is essential. Currently, billions of dollars are being spent on
25 restoration efforts through the Kissimmee River Restoration, the Everglades
26 Forever Act, the Everglades National Park expansion, and numerous other physical
27 modifications, land purchases, and management practices. Florida Bay should
28 hopefully reap the benefits of the C-111 and the Modified Water Delivery projects.
29 All of these initiatives are a great start but will not alone solve the problem. A
30 sustainable South Florida will require a continuous, expensive, and long term
31 investment of people and dollars.
32

33 Equally imperative to hydrologic restoration is the need to define the extent of the
34 area needed for the healthy functioning of the remaining natural system from both
35 a hydrologic and biological standpoint. This "map" should identify critical parcels
36 needed to be preserved now, in order not to prematurely eliminate or foreclose
37 hydrologic or natural systems management alternatives. Buffer areas must also be
38 defined, which will serve to act as multi-purpose transition areas (e.g., recharge,
39 water quality improvement, storage, marshes, open space, recreation, etc.) and
40 reliable, long-term locations for agriculture. Concurrently, suburbanization that
41 threatens the sustainability of South Florida must cease.
42

43 The good news, according to Robertson and Frederick, is that biological
44 restoration of the Everglades wetlands appears feasible (1994). Even though it has
45 lost more than one-half of its original extent, the natural area is still very large and
46 is still potentially one of the largest wetland preserves on earth. The bad news is

1 that prospects for upland restoration are limited because of reduced spatial extent
2 and continuity of upland habitats in Southern Florida (1994). Since the prospect
3 for re-establishing corridors is doubtful in portions of South Florida, an intensive,
4 long-term, many species management approach may prove the only feasible
5 alternative at present.

6
7 Another key to restoration is defining the fluctuating water quantity needs of the
8 natural system. Increased water demands and the inability to supply water at the
9 right time and the right location must be reconciled for the long and short term.
10 The natural system must be entitled to water in suitable quantities, timing, and
11 duration which enable it to survive over the long haul. Already most of South
12 Florida has been designated a "critical water supply problem area" by the SFWMD
13 (only Charlotte, Glades, Martin, Okeechobee, and Highlands counties are not
14 totally covered by this designation). This designation is applied to a geographic
15 region where water resources are critical or are anticipated to become critical over
16 the next 20 years (SFWMD, 1995a). The water management districts have the
17 authority to establish the limit at which further withdrawals or levels would be
18 significantly harmful to the water resources or ecology of the area (minimum
19 flows and levels [§ 373.042, FS]). They also have the authority to reserve water
20 for the protection of fish and wildlife or the public health and safety (§ 373.223(3)
21 FS). The baseline natural system needs or critical thresholds must be quantified
22 so that environmental degradation does not continue. Water management must
23 balance all of these needs and phase in restoration quantities and qualities for both
24 the natural and human systems as needed.

25
26 Water quality is the third key. Immediate action needs to be taken to recognize the
27 damage caused by nutrients, contaminants, and other materials introduced into the
28 system and to significantly reduce them from the air and water to below-
29 detrimental levels, or eliminate them completely. At a minimum, greater
30 understanding is needed of what biogeochemical disturbances are compatible with
31 restoration, what threshold values for total phosphorus can be released safely into
32 the Everglades ecosystem, and what sources, modes of transport, interactions, and
33 sinks exist for pesticides (Science Subgroup, 1994a).

34
35 The overall goal of the restoration effort is to restore a sustainable South
36 Florida ecosystem that preserves the valued properties of South Florida's
37 natural systems and supports productive agriculture, fishery, and tourist-
38 based economies and a high quality of urban life. Sustainability means
39 high natural productivity, human and ecosystem health, and resiliency to
40 climate extremes and catastrophic events. It also means accommodation
41 of needs of human systems - flood control, irrigation and drinking water
42 supply (Science Subgroup, 1994b: p. 4).

43
44 The reclamation of what is left of the natural system must be the fundamental
45 assumption behind any restoration initiative. Further degradation is unacceptable.
46 The health of the natural system cannot be compromised because of its

1 fundamental role in sustaining all life in South Florida. Restoration must seek to
2 regain the hydrologic and biological values that have been lost. Robertson and
3 Frederick note that "There is no obvious biological reason why restoration should
4 fail . . . it does not appear to be particularly difficult. The only real problem is
5 political - the need to resolve competing uses of resources and competing visions
6 of the future" (1994: p. 729). Zubrow et al., confirms this observation by
7 explaining that "The problem of environmental restoration is not technical, it's
8 cultural and economic The solution must be seen to be more than a local
9 problem or even a regional problem" (1995: p. 445-446). Like the diversity of
10 communities which characterize South Florida, the vision of Everglades ecosystem
11 restoration must be greater than the sum of its parts. Its vitality, diversity, and
12 longevity must be ensured.

13
14 The ceaseless, relentless growth and urbanization of South Florida, long the envy
15 of other states, has caused additional problems. It has led to reduced groundwater
16 recharge, lowered groundwater tables, and increased pollution. It has eroded the
17 natural system's vitality and has increased human and property liabilities for those
18 located in floodprone areas. Growth has also given rise to a proliferation of low
19 density development and other negative consequences including gridlock, isolation,
20 disparity, factionalism, mind numbing homogeneity, and a distinct lack of a sense
21 of place.

22
23 Infrastructure, the panacea of the growth management "concurrency" thrust, has
24 failed to keep pace with the region's growth problems. The infrastructure backlog
25 continues to grow. Longman describes the beneficial purposes of having capacity
26 available to meet projected growth (1994). Unfortunately, complications such as
27 "Locally Unpopular Land Uses" (LULUs) and "Not In My Backyards" (NIMBYs)
28 have oftentimes created an adversarial environment. In the past, portions of the
29 transportation concurrency requirements worked counter to what most persons
30 would consider a livable solution by promoting a sprawling suburban landscape.
31 The slogan, "build the roads and they will come," was cited as the most
32 instrumental cause of the virtual explosion in housing in western Broward County
33 (Bader, 1993).

34
35 The fact that most of Florida's growth in the second half of this
36 century has come in the form of sprawl is primarily what explains
37 why traffic continues to grow faster than population. While
38 Florida's population has increased by 90% in the last two decades,
39 the number of registered vehicles has increased by 166%
40 (Longman, 1994: p.46).

41
42 Even if transportation levels were reduced by half in the future, just maintaining
43 the current road conditions and traffic congestion over the next 20 years would
44 require \$26.3 billion in revenue (1994).

1 One of the most immediate effects of the growth and development patterns
2 mentioned above has been the escalating consumption of water by urban and
3 agricultural users. Increasing demands are being placed on a hydrologic system
4 whose recharge potential is reduced by drainage and runoff caused by human
5 alterations. This results in frequent water shortages and creates the irony of a
6 natural system dying of thirst in a subtropical environment with over 53 inches of
7 rain per year.

8
9 The economy of South Florida does not portend a rosy future. Although the state
10 is among the leaders in the nation in job creation¹ and, in 1994, was producing
11 jobs at a rate 34% faster than the U.S. as a whole, these jobs were mainly low
12 wage with a disproportionate share of part-time and/or temporary positions.
13 Additionally, average earnings per employee lag more than 10% below the U.S.
14 average (Longman, 1995).

15
16 South Florida's economic destiny continues to be determined by decisions made
17 outside its boundaries. Because its economy is dominated by tourism, retirement,
18 and, to a lesser extent, trade and defense spending, South Florida is primarily
19 living off wealth created elsewhere. The relative lack of importance of
20 manufacturing in the state as a whole is consistent with the above. Manufacturing
21 provides 15.9% of total U.S. jobs, while in Florida it provides only 8.3%. This
22 imbalance between production and services retards growth of personal income
23 across the state and results in high exposure to economic contractions. Florida
24 must broaden its economic base by raising average wages and diversifying its
25 economy (Longman, 1995).

26
27 Changing perceptions of South Florida have impacted the state's economic future.
28 Forty-one percent of Americans who have either never been to Florida, or have
29 not visited the state in the past 5 years, give as one of their reasons for not
30 coming, the fact that it is too "urban, commercial and crowded" (Longman, 1995).
31 Of those that visited between 1989 and 1993, 37.9% agreed with that statement.
32 The image that non-residents have of Florida is changing. Visions of a tropical
33 paradise have been replaced by notions of urban sprawl with all of its associated
34 problems, such as the overburdened transportation system and increased crime
35 rates. For example, Southeast Florida visitors declined by 1.2% after a series of
36 highly publicized tourist murders. European tourism was particularly affected.
37 German visitor rates declined by 59% overall (Longman, 1995) and by 57.3% in
38 Dade County (Megee, personal communication). The drop in tourism is one of
39 the many drawbacks created by Florida's failure to contain urban sprawl and
40 otherwise manage growth responsibly.

41
42 Florida's use of alternative means to attract new businesses has not been successful
43 in either the venture capital or the enterprise zone routes. One author notes that

44 ¹ Being second only to Texas in 1994 (Longman, 1995).

1 "For the 12 months ending March 31, 1994, \$125 million in venture capital was
2 invested in Florida [T]hat compares to Venture Economics Magazine's
3 estimate that California attracted \$1.2 billion in 1993" (Miracle, 1995). Another
4 author quotes Florida's Auditor General as stating that efforts to bring business to
5 blighted areas have failed, with the biggest barrier being the lack of appropriate
6 business incentives. The author concludes that Florida's tax structure, the degree
7 of red tape, and procedural complexity make the enterprise zone process very
8 difficult (Johnson, 1993).

9
10 South Florida must be cautious in its zeal to broaden and expand its economic
11 base. The ecosystem can little afford additional demands or face further threats
12 to its tenuous existence. Impacts from expanded economic interests must be
13 minimized; no incremental or cumulative environmental repercussions should
14 result from their introduction. More importantly, the regional economy must be
15 geared toward a non-degradation orientation.

16
17 Florida's forecasted future fiscal crisis also looms ominously over its delicate
18 economic base. Robertson describes how every year the Florida budget, which is
19 currently greater than \$38 billion, grows. This growth is fueled by the fact that
20 Florida is a magnet for residents, visitors, and businesses. With annual increases
21 of 270,000 residents, 1 million visitors, and 1,000 business operations, demand for
22 services (e.g., education, welfare, prisons, roads, etc.) is increasing at a faster rate
23 than the funding needed to pay for them. Projected general revenue deficits
24 resulting from these growth-related pressures range from \$700 million in 1995-96
25 to \$1.3 billion in 1998-99 (Robertson, 1995).

26
27 Lt. Governor Buddy MacKay once quoted the sociologist Robert E. Park who
28 characterized Florida as "a crowd, not a community" (Berry, 1994). Webster's
29 Dictionary defines a community as a "unified body of individuals" or "people with
30 common interests living in a particular area." Thus a crowd does not a
31 community make. Upon addressing the Governor's Commission for a Sustainable
32 South Florida for the first time in April 1994, the Lt. Governor remarked that we
33 need to find a way to develop the state's economy without cannibalizing the
34 environment and to find a way to get better without getting bigger. He cautioned
35 the newly created Governor's Commission with the observation that if we are
36 having this much crisis with 5 million South Floridians, how will we make it work
37 with 15 to 30 million residents? He suggested that we do not yet have in place
38 a structure of laws or the intergovernmental relationships to address these looming
39 problems. He explained that we need "to move from the economics of
40 exploitation to the economics of sustainability" and that "Economic growth,
41 economic development, and environmental protection are not separate issues, they
42 are the same issue" (Governor's Commission, 1994).

43
44 A new sense of community, stewardship, and citizen enabling is needed to propel
45 South Florida into the 21st century and beyond. A "sustainable community" is a:
46

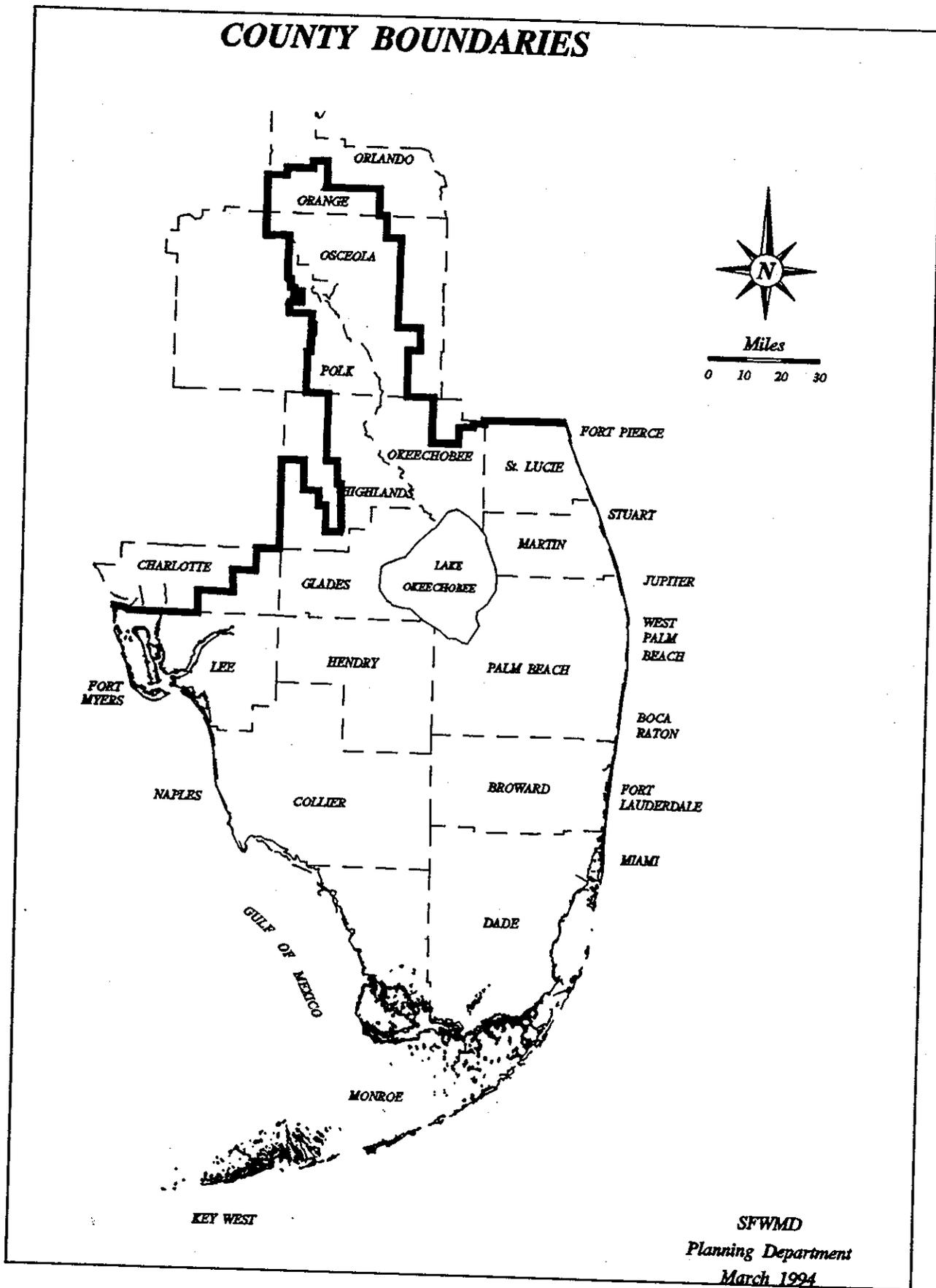
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community that uses its resources to meet current needs while ensuring that adequate resources are available for future generations. It seeks improved public health and a better quality of life for all its residents by limiting waste, preventing pollution, maximizing conservation and promoting efficiency, and developing local resources to revitalize the local economy (Petrovich, 1994: p. 8).

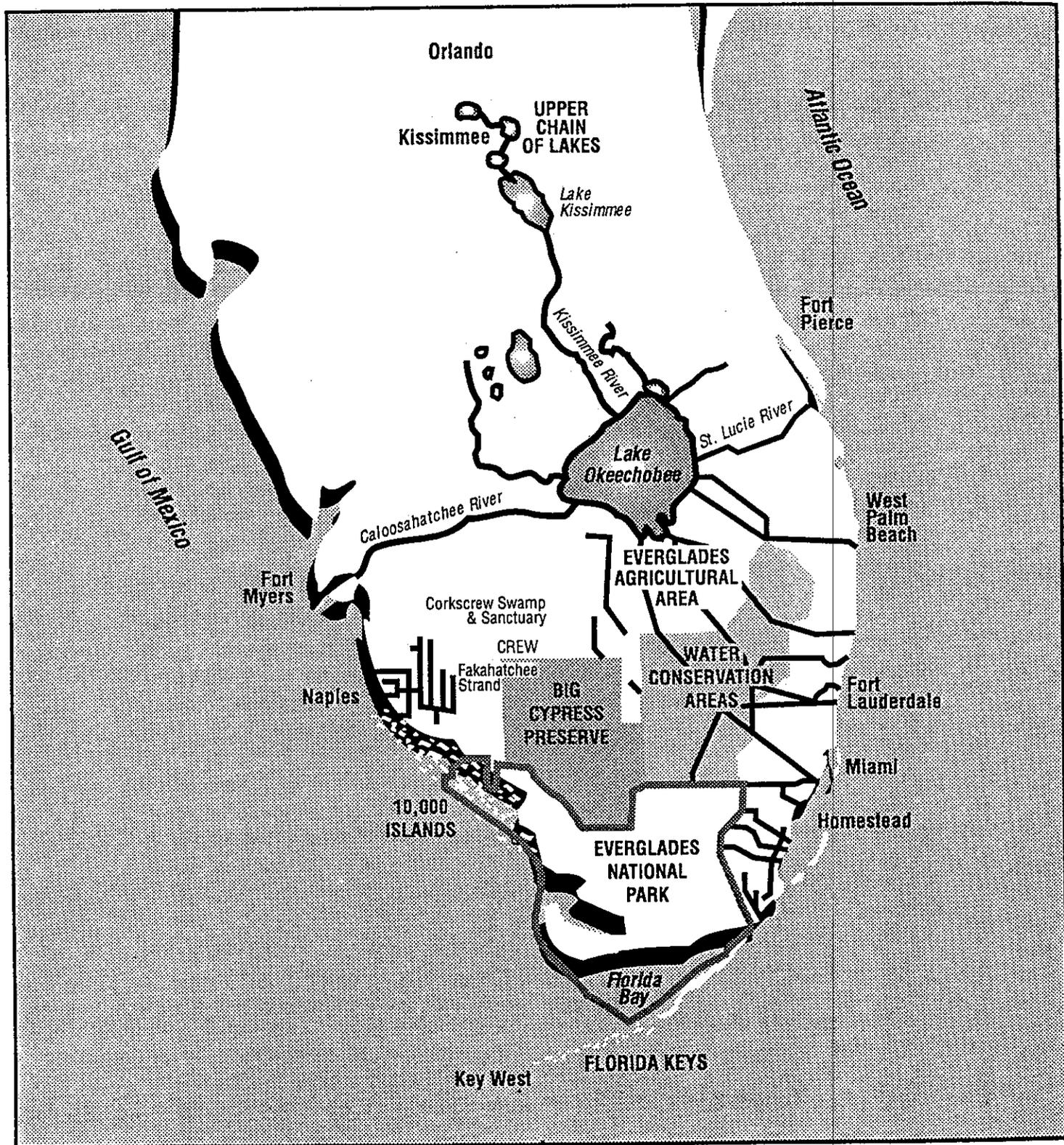
South Florida needs to reassess its problems in light of its assets. The crux of the issue, however, is to what physical and biological extent can society restore a degraded system, while acknowledging the necessity of, and providing for, a healthy regional economy and quality communities. The Governor's Commission for a Sustainable South Florida was appointed to address this challenge.

Map A.1 on the following page is a graphic illustration of the 16 counties comprising the Commission's study area. Map A.2 illustrates some of the major physiographic elements of the South Florida region. Section B, which follows, describes the composition and charge of the Commission.

Map A.1



Map A.2



1 **B. THE GOVERNOR'S COMMISSION FOR A SUSTAINABLE SOUTH**
2 **FLORIDA**

3
4 Governor Lawton Chiles on March 3, 1994, signed into effect Executive Order 94-
5 54, creating the Governor's Commission for a Sustainable South Florida. This
6 Commission was created to assure that a healthy Everglades ecosystem can coexist
7 and be mutually supportive of a sustainable South Florida economy. Fundamental
8 premises of the Executive Order recognize that the Everglades ecosystem is known
9 as a unique area, both nationally and internationally; that it is home to a
10 significant number of threatened and endangered wildlife species; and that it
11 contains the only living coral reef in the continental United States. More than 5
12 million South Floridians currently depend on this system as their major source of
13 fresh water. The system provides the foundation for the region as an international
14 commercial, agricultural, and tourist center.

15
16 The Executive Order further recognizes that the results of rapid population growth,
17 including land development, water management activities, and land conversion,
18 have negatively impacted the Everglades ecosystem and that its water quality has
19 been degraded and the associated natural systems no longer adequately accomplish
20 the functions they once performed. With population expected to triple in the
21 South Florida region in the next half century, it is increasingly critical that
22 decisions are made which will curb the deleterious effects of growth and
23 development and that recommendations are offered on how to ensure ecological
24 health and a sustainable economy for South Florida over the long run.

25
26 To make these decisions, Governor Lawton Chiles appointed a 42 member
27 standing Commission consisting of 37 voting members from the South Florida
28 community. These members include representatives of the South Florida business
29 and economic community; public interest and environmental organizations; county
30 and city officials; the South Florida Water Management District (SFWMD); the
31 regional planning councils; the Secretaries of the Florida Department of
32 Environmental Protection (DEP), the Florida Game and Fresh Water Fish
33 Commission, the Florida Department of Commerce, the Florida Department of
34 Transportation (FDOT), and the Florida Department of Community Affairs (DCA);
35 representatives of the Seminole Tribe and Miccosukee Tribe of Indians; and a
36 member of the Florida House of Representatives and a member of the Florida
37 Senate. Five non-voting members were also appointed to represent federal
38 interests; they include representatives of the U.S. Army Corps of Engineers, the
39 Department of the Interior, the National Oceanic and Atmospheric Administration,
40 the Environmental Protection Agency, and the South Florida Ecosystem
41 Restoration Task Force.

42
43 The Commission's unique charge and composition should not be understated. The
44 task at hand is how to bring about change that will affect Floridians today and in
45 the future in a manner that ensures quality community development both
46 economically and ecologically. Past attempts have failed to clearly delineate and

1 chart a measurable quality future for South Florida. A collective, shared vision
2 and solutions will fully utilize the creative energy of all Commission participants.
3 This Initial Report to the Governor and Cabinet presents the Commission's
4 preliminary findings and recommendations.
5

6 C. REGIONAL OVERVIEW

7
8 The Governor's Commission for a Sustainable South Florida is concerned with the
9 Everglades ecosystem, which includes the same hydrologically significant
10 geographic boundaries as the SFWMD. The Everglades ecosystem stretches from
11 the Kissimmee--Lake Okeechobee region to the coral reef (Ring, 1993, and Corn
12 et al., 1993). It includes the Everglades, the Florida Keys, Florida Bay, and other
13 hydrologically related systems, including all or parts of 16 counties. At one time,
14 the Everglades proper covered 4 million acres of Florida and received nourishment
15 from a slowly moving sheet of freshwater drifting southward. For thousands of
16 years the ecosystem remained basically unchanged. During the last 100 years,
17 approximately half of the Everglades has disappeared. It has been drained,
18 channelized, and altered to allow for Florida's rapid agricultural and urban growth.
19 Parts of the Everglades are still in relatively pristine condition but much of it has
20 changed. Changes in water quality, quantity, distribution, and timing have
21 contributed significantly to Everglades degradation (Ring, 1993, and Corn et al.,
22 1993).
23

24 The South Florida region contains approximately 5.2 million people (SFWMD,
25 1995a), 40% of Florida's total population (Lenze, 1994). The population is
26 expected to reach 8 million by the year 2010 (SFWMD, 1995a) and triple in the
27 region by the year 2050 (SFWMD, 1994c). Table I depicts the regional
28 population and projected growth by county. According to Lenze (1994), the
29 majority of the growth will be concentrated in the urban centers. Almost one
30 quarter of the growth is destined for the Orlando metropolitan statistical area
31 (MSA) and almost half is projected for the 3 southeast MSAs: West Palm Beach,
32 Ft. Lauderdale, and Miami. Currently, almost 85% of the region's population
33 resides in the latter areas.
34

35 Migration has played the predominant role in South Florida's population growth,
36 accounting for 85% of the new residents in the 3 southeast counties between 1950
37 and 1990 (SFRPC, 1995a). This trend has slowed,
38

39 due in part to the increasing density and congestion of urban South
40 Florida. The region [Dade, Broward, and Palm Beach counties]
41 now attracts a declining proportion of the elderly who migrate to
42 Florida For this southeast region as a whole, previous
43 generations of elderly immigrants are not being replaced by new
44 ones (p.12).
45

1 One-third of the southeast region's 1990 population is foreign-born. "[T]he rich
 2 ethnic and cultural diversity these residents bring are a strength for the region,
 3 helping to mold South Florida into a world class cultural center with a world class
 4 workforce" (p. 13).
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 7

8 **TABLE I**
 9 **POPULATION IN SOUTH FLORIDA - 1990 AND 2010**

10

County	1990 Population	2010 Population	% Change
Broward	1,255,488	1,773,034	46%
Charlotte*	500	1,178	136%
Collier	152,099	293,469	93%
Dade	1,937,094	2,560,097	32%
Glades	7,591	14,800	95%
Hendry	25,773	41,610	61%
Highlands*	9,150	14,269	56%
Lee	335,113	640,516	91%
Martin	100,900	179,426	78%
Monroe	78,024	94,337	21%
Okeechobee*	28,947	46,315	60%
Orange*	127,785	183,164	43%
Osceola*	104,514	188,370	80%
Palm Beach	863,518	1,597,535	85%
Polk*	12,823	19,625	53%
St. Lucie	150,171	290,100	93%
TOTAL	5,189,490	7,937,845	53%

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* Indicates counties which are not entirely within the boundaries of South Florida. The population shown reflects only that portion within South Florida.

SOURCES: Bureau of Economic and Business Research, Florida Statistical Abstract (1993); SFWMD, Water Supply Needs and Sources, 1990-2010 (1992); Local Government Comprehensive Plans.

1 In 1991, the Miami Hialeah area was the intended destination of 3.2% (58,918
2 persons) of the foreign immigrants admitted to the U.S. (Bureau of Economic and
3 Business Research, 1993). This figure does not include the more than 85,000
4 Cubans and Haitians who have arrived in Florida since 1983 (Spinthourakis, et al.,
5 1994).

6
7 Age also plays a role in the demographic composition of South Florida. The
8 region's population is older when compared to the rest of the country and the
9 state as a whole (SFRPC, 1995a and SWFRPC, 1995c). Less than one-half of
10 South Florida's population (47%) is in its prime working years (20-54),
11 approximately 19% is 65 or older, and approximately 18% is school age (5-19)
12 (Lenze, 1994).

13
14 The economy of South Florida reflects the greater state pattern with distribution
15 of earnings of 33% for services; 19% for trade (combined wholesale and retail);
16 and around 14% for government. Finance, insurance, and real estate together
17 account for approximately 8.4% and agriculture (agricultural services, forestry and
18 fishing) approximately 3.3% (Harmon, 1994). The role of agriculture in South
19 Florida is problematic as it comprises the majority of the land use in the area.
20 Statewide, about 70% of the arable land is devoted to farming (Davidson, 1994).
21 The top 5 Florida counties in agricultural cash receipts were all among the top 10
22 most populated counties in the state. South Florida reflects the greater state trend
23 inasmuch as its major metropolitan areas are often juxtaposed with large
24 agricultural production areas. A total of 142,000 people work in agriculture,
25 according to Harmon (1994), a small percentage when compared to total regional
26 employment. Overall, agriculture in Florida has a \$16 billion impact compared
27 to tourism which has a \$30 billion dollar impact. However, agriculture is
28 responsible for up to 30% of the earnings in some of the interior South Florida
29 counties. Moreover, it continues to be the dominant land use in many of the
30 region's counties such as those in the lower west coast (43%), Osceola (77.5%),
31 Highlands (68%), Okeechobee (93%), and Glades County (99%).

32
33 In his presentation to the Governor's Commission on June 1, 1994, Dr. Dennis
34 Harmon reviewed the high growth industries for South Florida, noting that 4 of
35 the top 15 were in some type of printing and publishing activity. Eight of the 15
36 could be considered high technology. The only agricultural item in the leading
37 growth industry list was bakery products (manufacturing). The bottom 10 on the
38 list were particularly interesting because computer and office equipment showed
39 up as industries projected to experience the steepest declines. In reference to
40 international trade, Dr. Harmon noted an estimated \$42 billion impact from
41 importing and exporting activities, which complements the \$16 billion and \$30
42 billion impacts from agriculture and tourism respectively. In conclusion, Dr.
43 Harmon highlighted some of the critical issues emerging in South Florida. These
44 included the growing disparity between the "haves" and the "have nots," which is
45 also indicative of the differing economic realities of the various counties. He also
46 commented on the opportunities to be derived from the North American Free

1 Trade Agreement and noted that several local economic development organizations
2 are beginning to shift their focus from quantity of jobs created to quality. The
3 South Florida Regional Planning Council (SFRPC) notes that in the southeast
4 counties,

5
6 the changing composition of the region's population has contributed
7 to the shifting base of the economy, which is increasingly focused
8 on international linkages and that historically the South Florida
9 economy was strongly influenced by tourism and in-migration. The
10 economy has become more service-oriented, with an increasing
11 share of employment in the service-producing industries and a
12 decreasing share of employment in goods-producing industries. In
13 recent years, there has been a significant increase in international
14 trade as integration with the global economy has accelerated (p.14).
15

16 Approximately 10% of the state's work force is directly or indirectly involved in
17 foreign trade. During the first 3 quarters of 1994, imports and exports were up
18 13.5 and 12.1%, respectively, from the previous year (Longman, 1995).
19

20 The SFRPC emphasizes that,

21
22 Those communities that are successful in economic development
23 will possess a diversified economy, pursue global markets to
24 strengthen their economic base and possess the necessary
25 infrastructure to sustain a healthy economy. The creation and
26 retention of quality jobs and dependable tax bases in the South
27 Florida region will depend on such a healthy economy (1995a, p.
28 14).
29

30 The SFRPC has found that more than 300 multinational companies have opened
31 world, regional, and Latin American sales, service, administrative, research,
32 training, and manufacturing facilities in Dade County. In 1993, \$28 billion worth
33 of exports and imports were processed through the Miami Customs District. In
34 addition, South Florida is emerging as an administrative and managerial hub, a
35 point of access to which companies are moving decision-making functions for
36 Euro-Latin trade.
37

38 To support a growing role in the world market, the SFRPC suggests that the
39 current economic base must be broadened and shifted toward higher value-added
40 industries and that international trade must be broadened to increase trade with
41 European, Asian, and African countries. Necessary companion initiatives would
42 have to be fashioned to develop a quality workforce which has access to training,
43 adequate infrastructure, technology transfer, and start-up venture capital. The
44 notable lack of economic development planning in the current growth management
45 system needs to be rectified in order for the region to remain competitive.
46

1 The trend of declining personal incomes over the last 2 decades is a concern in
2 the southeast region. The SFRPC comments on this trend, "In both the region and
3 the state, earnings from wages, salaries and professional fees, net of taxes, have
4 been lower than the national average and have fallen" (1995a: p. 17-18). Transfer
5 payments in the region have mirrored those in the rest of the country. The SFRPC
6 notes that the "Lower earnings have been compensated by a significantly higher
7 share for dividends, interest, and rent in total income in South Florida and the
8 state when compared with the national average" (1995a: p. 18).

9
10 Despite the above trends, the growing level of poverty among the elderly is a
11 particular concern in the southeast region, especially in periods of declining
12 interest rates. Furthermore, the SFRPC finds a continuing pattern of occupational
13 disparities along ethnic and racial lines. It points out that "African-Americans still
14 remain significantly over-represented among lower-paid unskilled laborers."
15 Moreover, the SFRPC also points out regional economic disparities, "The percent
16 of families below the poverty level in 1989 was much higher in Dade County
17 (14%) than the State average (9%). Both Broward (7%) and Monroe (7%) were
18 below the State average." According to the Council, 7 municipalities in South
19 Florida had percentages of families below poverty level that were more than twice
20 as high as the state average. The Council states that a recent study found that
21 approximately 1 in every 3 children in Ft. Lauderdale and more than 4 out of
22 every 10 children in Miami live in poverty. The Council cautions that, "Unless
23 strategic action is taken on a regional level, the net results of world trade and the
24 globalization of South Florida will deepen the social and economic disparities that
25 already exist" (1995a: p. 19). It also warns that the bottom half of South Florida's
26 society faces an ominous trend. Service industries, the largest employers in the
27 area, are automating jobs and displacing lower skilled workers. In addition,
28 declining pay for the bottom half may not be reflected statistically, since average
29 incomes should rise as the top half does better. The resentment created by this
30 widening inequity and by increased welfare and unemployment costs is an
31 equation for a collision course.

32
33 The southwest portion of the region mirrors the trends discussed above, but with
34 diminished magnitudes. The region's major economic sector is service-related,
35 resulting from the needs of the large retiree and tourist population in coastal
36 counties and agriculture in the interior. Retail trade ranks second as a source of
37 jobs in the coastal counties. The southwest region has an unusually high rate of
38 unemployment and low wage scales in its rural areas (SWFRPC, 1995a).

40 D. SUSTAINABILITY

41
42 In the late 1970s and early 1980s, a number of independent scientists, activists,
43 and policymakers were working on responses to the interconnected problems of
44 environment and development. They began to use the term "sustainability" to
45 describe the goal of integrating environmental and developmental concerns. It
46 wasn't until the 1987 United Nations' World Commission on Environment and

1 Development released its report, "Our Common Future," that the terms
2 "sustainability" and "sustainable development" came into wide-spread use. "Our
3 Common Future" (or the "Brundtland Report," named after the Commission's
4 Chair, Norwegian Prime Minister Gro Harlem Brundtland) defined sustainable
5 development as "development which meets the needs of the present without
6 endangering the ability of future generations to meet their own needs."
7

8 That Commission established several key principles of sustainability:
9

- 10 • That the needs of the future must not be sacrificed to the demands
11 of the present;
- 12 • That humanity's economic future is linked to the integrity of natural
13 systems; and
- 14 • That protecting the environment is impossible unless we improve
15 the economic prospects of the Earth's poorest peoples.
16

17 There are several major attributes to this concept. The first is the distinction
18 between growth and development. Dr. Herman Daly (Environment Department,
19 World Bank) describes the differences by defining 'growth' as the "expansion in
20 scale of physical dimensions of an economic system while 'development' refers to
21 a qualitative change (improvement or degradation) of a physically, non-growing
22 economic system in a state of dynamic equilibrium maintained by its
23 environment."
24

25 Another attribute of the concept is that it is not a new, revolutionary, or radical
26 notion. People have been familiarized with the idea through the common usage of
27 such terms as carrying capacity, sustained management practices, sustainable yield,
28 systems approaches, limits to growth, and more.
29

30 At the June 1992 United Nations' Conference on Environment and Development
31 (the "Earth Summit" or UNCED) in Rio de Janeiro, Brazil, representatives from
32 nearly every nation on Earth adopted the Brundtland principles in the form of
33 international treaties and agreements designed to begin protecting natural systems
34 while meeting the needs of the world's poor. At the same time, a "Global Forum"
35 of citizens' groups from around the world developed grass-roots initiatives
36 designed to monitor governments and push sustainability efforts beyond what
37 governmental processes were able to do. These latter efforts were aligned with
38 Agenda 21, 1 of 5 documents signed at the UNCED conference. Donald A.
39 Brown (1994-95) describes Agenda 21 as a non-binding, comprehensive blueprint
40 for global action into the 21st century. He explains that "the greatest historical
41 significance of Agenda 21 is that it puts environmental protection and
42 development activities on the same footing under the notion of 'sustainable
43 development'" (p. 1-2). Brown concludes that Agenda 21 is a means of forcing
44 the integration of environmental, economic, and social planning at the state level
45 and that it should be used as a "tool for reconciling economic, environment, and
46 development tensions and conflicts" (p. 3).

1 Today we are on the threshold of trying to bring these ideals to fruition. How to
2 do that is the question. In 1985, a Global Tomorrow Coalition report noted that,

3
4 The main problem in development is not the lack of technical
5 answers, but failure for political and socio-economic reasons to put
6 known solutions into effect soon enough and widely enough. We
7 believe that questions of democracy, the role of markets, the debt
8 crisis, land tenure, and international institutions are central to the
9 development process.

10
11 Recently, the U.S. Man in the Biosphere Program (1994: p. 2) concluded that, "A
12 sustainable South Florida environment is achievable only through utilizing
13 ecosystem management principles that recognize the inter-dependency of humans
14 and their environment." Therefore, is the human environment part of or
15 independent of the natural system? The consensus appears to be that it is the
16 successful integration of the two and that sustainability is the test of whether they
17 are integrated in a way in which specified fundamental environmental constraints
18 are not violated. For example: Colin Isaccs, Executive Director of the Pollution
19 Probe Foundation in Toronto, Ontario, in his remarks to a session of "Environment
20 and Economy, Partners for the Future," a conference on the theme of sustainable
21 development held in December 1989, stated,

22
23 Sustainable development is sustainable development, not
24 sustainable economic development, not sustainable
25 DEVELOPMENT, but almost one word: sustainable development .
26 . . . It's not the economy or the economics that we are trying to
27 sustain, it's the environment and the economy that we are trying to
28 sustain. . . . Sustainable development clearly means development
29 in controlled quantity, enough to meet the globe's economic and
30 environmental needs and no more.

31
32 Paul Hawken, in "The Ecology of Commerce: A Declaration of Sustainability"
33 (1993) states that "sustainability" can be defined in terms of carrying capacity of
34 the ecosystem, and described with input-output models of energy and resource
35 consumption. Sustainability is an economic state where the demands placed upon
36 the environment by people and commerce can be met without reducing the
37 capacity of the environment to provide for future generations. He goes on to note
38 that sustainability means that services or products should not compete in the
39 marketplace in terms of image, power, speed, packaging, etc., but instead should
40 compete in a way that reduces consumption, energy use, distribution costs,
41 economic concentrations, soil erosion, atmospheric pollution, and other forms of
42 environmental damage.

43
44 Overall, sustainability is an ethical consideration. The term, by itself, is
45 meaningless unless it is used in the context of sustainable uses or of something
46 that can be identified and measured. Numerous states and municipalities have

1 attempted to quantify those "sustainable" markers, or benchmarks, in attempts to
2 establish and measure progress. Of particular note are the Oregon Benchmarks
3 (1992), Mainewatch (1990), Minnesota Sustainable Development Initiative (1994),
4 Sustainable Seattle (1993), Virginia (Environmental Law Institute, 1994), the City
5 of Jacksonville (Henderson, 1991), and the Florida Commission on Government
6 and Accountability to the People (1995). Sustainability can be looked at as an
7 ecological constraint on human activities and a way to make deliberate ethical
8 decisions to ensure future generations meet their own needs.
9

10 The issue at hand is how to bring about change that will affect Floridians today
11 and tomorrow in a manner that ensures quality community development both
12 economically and ecologically. Past attempts have failed in clearly delineating
13 and charting a measurable quality future for South Florida. A vigorous economy
14 and a healthy ecosystem must be the lever and the fulcrum, respectively, of our
15 present and future activities. This Commission will strive to make that difference;
16 it is that important to us all.
17

18 In this Chapter we have "set the problem." In the next Chapter we provide our
19 suggested solutions.

CHAPTER II

RECOMMENDATIONS

In this chapter, we provide you with our recommendations. Each section of the chapter corresponds to a substantive subject area or topic. These sections, A through H, contain a background discussion and set of objectives which set the context and direction for the ensuing recommendations. The recommendations and action steps are provided as the Commission's initial action plan to achieve a sustainable South Florida.

Readers will note that several recommendations and actions steps in this chapter call for the Commission to carry out future activities. Where references to "the Commission" are found, readers are requested to interpret this to mean either the Governor's Commission for a Sustainable South Florida or some other similar body appointed at the discretion of the Governor of Florida.

The Recommendations and Action Steps of the Governor's Commission for a Sustainable South Florida have been based upon significant input, debate, and public participation. These recommendations are intended to be a coordinated and cooperative approach to sustainability.

A. MANAGE WATER TO ACHIEVE A SUSTAINABLE SOUTH FLORIDA

Water resources are a major factor defining the face of South Florida. The region's water resources include natural waterways, such as the Kissimmee-Lake Okeechobee-Everglades system, the Big Cypress Basin, and the watersheds of the Caloosahatchee River and the Indian River Lagoon. It also includes one of the largest manmade drainage systems in the nation, the Central and Southern Florida Flood Control Project (C&SF), as well as the water surrounding the only coral reef in the continental U.S. In addition to these surface waters, the region's groundwater resources include one of the most prolific aquifers in the world, the Biscayne aquifer.

Both ground and surface water resources are subject to increasing demands and pressures as development continues in the region. The ability to sustain South Florida's economy and quality of life will depend, to a large degree, on the ability to protect and manage the region's water resources. The essence of the challenge is to satisfy increasing demands for finite resources in a manner that sustains the resource.

1 Existing State law includes numerous statutory provisions regarding water use.
2 These are found in the State Comprehensive Plan (Chapter 187, Florida Statutes
3 (FS)), the Water Resources Act (Ch. 373, FS), and the Air and Water Pollution
4 Control Act (Ch. 403, FS).¹

5 1. Among the more important provisions are:

- 6 • Florida shall assure the availability of an adequate supply of water for all competing uses deemed
7 reasonable and beneficial and shall maintain the functions of natural systems and the overall present
8 level of surface and ground water quality. Florida shall improve and restore the quality of waters
9 not presently meeting water quality standards (§ 187.201(8)(a), FS).
- 10 • Encourage the development of local and regional water supplies within water management districts
11 instead of transporting surface water across district boundaries (§ 187.201(8)(b)3, FS).
- 12 • Ensure that new development is compatible with existing and regional water supplies
13 (§ 187.201(8)(b)5, FS).
- 14 • Reserve from use that water necessary to support essential non-withdrawal demands, including
15 navigation, recreation, and the protection of fish and wildlife (§ 187.201(8)(b)14, FS).
- 16 • Provide for the management of water and related land resources (§ 373.016(2)(a), FS).
- 17 • Preserve natural resources, fish, and wildlife (§ 373.016(2)(f), FS).
- 18 • Florida shall assure the availability of an adequate supply of water for all competing uses deemed
19 reasonable and beneficial and shall maintain the functions of natural systems and the overall present
20 level of surface and ground water quality. It is the intent of the Legislature that future growth and
21 development planning reflect the limitations of the available ground water or other available water
22 supplies (§ 373.0395, FS).
- 23 • Within each section, or the water management district as a whole, the Department [of Environmental
24 Protection] or the governing board [of the water management district] shall establish . . .
25 (1) Minimum flows for all watercourses in the area. The minimum flow for a given
26 watercourse shall be the limit at which further withdrawals would be significantly harmful
27 to the water resources or ecology of the area (§ 373.042, FS).
- 28 • The minimum flow and minimum water level shall be calculated by the Department [of
29 Environmental Protection] and governing board [of the water management district] using the best
30 information available. When appropriate, minimum flows and levels may be calculated to reflect
31 seasonal variations (§ 373.042, FS).
- 32 • It is the intent of the Legislature that utilities develop reclaimed water systems, where reclaimed
33 water is the most appropriate water supply option, to deliver reclaimed water to as many users as
34 possible through the most cost-effective means, and to construct reclaimed water system infrastructure
35 to their owned or operated properties and facilities where they have reclamation capability. It is also
36 the intent of the Legislature that the water management districts which levy ad valorem taxes for
37 water management purposes should share a percentage of those tax revenues with water providers
38 and users, including local governments, water, wastewater, and reuse utilities, municipal, industrial,
39 and agricultural water users, to be used to supplement other funding sources in the development of
40 alternative water supplies (§ 373.1961(2), FS).
- 41 • To obtain a [water use] permit pursuant to the provisions of this chapter, the applicant must establish
42 that the proposed use of water:
 - 43 (a) is a reasonable-beneficial use as defined in § 373.019(4);
 - 44 (b) will not interfere with any existing legal use of water; and
 - 45 (c) is consistent with the public interest (§ 373.223, FS).
- 46 • The encouragement and promotion of water conservation, and reuse of reclaimed water, as defined
47 by the Department [of Environmental Protection], are state objectives (§ 403.064, FS).

1 South Florida's climate typically produces ample rainfall, 53 inches per year on
2 average. About 75% of the rain (or 39 inches) falls during the wet season (May
3 to October). During especially active storm years, the region can receive more
4 than 80 inches of rainfall. Although ample rain usually falls in South Florida,
5 there are extended periods of drought, such as occurred from 1988 to 1991
6 (SFWMD, 1995a).

7
8 The hydrology of South Florida is the result of the interaction of the region's
9 climate with its topography and geology. Historically, during wet periods, water
10 tended to accumulate on the predominately flat, low-lying lands of the region,
11 flowing overland and through shallow streams into freshwater lakes and the
12 estuaries along the coast. During dry periods, surface water levels receded, but
13 because the streams and the shallow aquifers are hydraulically connected, water
14 stored in the shallow aquifer was discharged to the streams, supporting stream
15 flow even during extended dry periods. Wetlands were the surface expression of
16 a shallow water table representing the top of the aquifer. During dry periods,
17 wetland water levels were maintained by the slow drainage of ground water into
18 the wetland, replacing what had been lost to evapotranspiration. Occasionally,
19 extended droughts permitted the land to dry more completely, allowing fire to
20 clear areas.

21
22 Long periods of flooding, droughts, and hurricanes made most of South Florida
23 inhospitable to development. Early settlements were generally confined to isolated
24 uplands and the coastal ridge, often the only dry land available. There was,
25 however, a strong desire to settle the low-lands, which were very fertile and
26 potentially of great agricultural value. In order to accommodate development, the
27 natural hydrologic system was modified to meet the agricultural and urban need
28 for drainage. Extensive damage wrought by floods and droughts led to the
29 construction of the C&SF, a regional network of canals, levees, storage areas, and
30 water control structures designed to provide reliable water supply and flood
31 protection for existing and future development. The region's hydrology is now
32 largely governed by man-made systems superimposed on natural ones.

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- It is the policy of the state that the citizens of Florida shall be assured of the availability of safe drinking water (§ 403.851, FS).

- The Governing Board or the department, by regulation, may reserve from use by permit applicants, water in such locations and quantities, and for such seasons of the year, as in its judgement may be required for the protection of fish and wildlife or the public health and safety. Such reservations shall be subject to periodic review and revision in the light of changed conditions. However, all presently existing legal uses of water shall be protected so long as such use is not contrary to the public interest (§ 373.223, FS).

- In the formulation of the state water use plan, the department shall give due consideration to: (a) the attainment of maximum reasonable-beneficial use of water for such purposes as . . . listed under (1) as . . . 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 (§ 373.036, FS).

1 The construction of the C&SF dramatically altered the landscape of South Florida,
2 especially that portion which was once the Everglades. While significant portions
3 have been placed in public ownership, nearly half of the original Everglades has
4 been drained for agriculture and development. Furthermore, the marsh areas north
5 of Everglades National Park have been dissected into shallow diked
6 impoundments, or Water Conservation Areas (Davis and Ogden, 1994). In
7 addition to these changes, construction of the C&SF dramatically increased
8 discharges of water to tide by moving it off the land as quickly as possible. Nearly
9 half of the water entering the area served by the Project is discharged to tide
10 through its system of canals, which is nearly 4 times the amount withdrawn for
11 use by wellfields in the area (SFWMD, 1993b).

12
13 Changes in the timing and location of fire, hydrology, and nutrients--forces which
14 shaped the Everglades--have contributed to the creation of a variety of problems
15 for the system, including:

- 16
- 17 • Reduction in the ability of the system to support populations of
- 18 wading birds, alligators, and panthers;
- 19 • Fragmentation of the system, resulting in a loss of short
- 20 hydroperiod wetlands;
- 21 • Degradation of habitat as a result of changes in the timing,
- 22 distribution, quantity, and quality of water discharged into
- 23 freshwater wetlands and estuaries, especially Florida Bay, Manatee
- 24 Bay, and Barnes Sound; and
- 25 • Invasion of the ecosystem by exotic plant species, including
- 26 melaleuca, Brazilian pepper, Australian pine, kudzu, and old world
- 27 climbing fern.
- 28

29 South Florida's population grew from only 30,000 people in 1890, before the
30 beginning of efforts to drain the Everglades, to approximately 900,000 in 1950,
31 when the C&SF was begun. The drainage and flood protection afforded by the
32 C&SF opened additional areas to development, with the population exceeding 5.2
33 million in 1990. Local governments in South Florida are predicting that total
34 population will reach 8 million by 2010 (SFWMD, 1995a) and will triple by 2050
35 (SFWMD, 1994b). Approximately 88% of the region's current population is
36 concentrated in the coastal urban counties of Dade, Broward, Palm Beach, Lee,
37 and Collier. This distribution pattern is projected to continue.

38
39 Increases in population growth will intensify competition for access to, and control
40 of, the area's water resources unless changes are made to the current system of
41 water management. The availability of water from regional surface and ground
42 water systems remains relatively constant. As indicated by the Technical
43 Advisory Committee to the Governor's Commission (TAC) report (Appendix H),
44 however, the major change in flows due to urbanization has resulted in an increase
45 in discharge of approximately 2 million acre feet to tide along the Atlantic
46 estuaries. By comparison, water withdrawn for urban use is a relatively small
47 component of the regional water budget. Conservation of urban water
48 withdrawals, while important and helpful, will not solve the problem of excessive

1 discharge. Solving South Florida's water supply problem will be aided greatly by
2 increasing stormwater storage capability. Table A-1 illustrates the projected
3 increases in water demand in the region between 1990 and 2010.

4
5 **TABLE A-1**
6 **WATER DEMAND IN SOUTH FLORIDA - 1990 AND 2010**
7 **(in Millions of Gallons per Year)**
8

9

Category of Demand	1990 Demand	2010 Demand	% Change
Public Water Supply	312,759	529,848	69%
Domestic Self-Supply (Household Wells)	30,934	48,374	56%
Industrial/Commercial	44,311	71,680	62%
Agricultural Irrigation	769,423	934,865	22%
Recreation	82,488	126,877	54%
TOTAL	1,239,911	1,711,725	38%

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18 **SOURCES:** SFWMD, Lower West Coast Water Supply Plan (February 1994a);
19 SFWMD, Water Supply Needs and Sources, 1990-2010 (1992);
20 SFWMD, Working Document in Support of the Lower East Coast Regional
21 Water Supply Plan (1993b).
22

23 Clearly, water supply will be a critical issue in the 1990s and beyond.
24 Concentrations of development and location of wellfields near the coast limits the
25 availability of fresh water to meet increasing demands. The growing demand for
26 cheap, dependable, high quality water for agriculture, industry, and a burgeoning
27 population could rapidly exceed the limits of readily accessible sources. In some
28 areas of South Florida, increased demand has caused the South Florida Water
29 Management District (SFWMD) to advise local governments that they can no
30 longer continue to rely on traditional sources of inexpensive water, but must begin
31 to explore alternatives (SFWMD, 1991). Increases in demand caused by growth
32 are creating stress for the system. If the needs of the region's natural systems are
33 factored in, conflicts for water among users will become even more severe. To
34 address this issue, the SFWMD is developing a series of regional water supply
35 plans to be completed by 1997 (Table A-2). Concurrently, the SFWMD has also
36 begun to promote development of additional water sources to protect natural
37 systems (SFWMD, 1994a).
38

TABLE A-2
REGIONAL WATER SUPPLY PLANNING
IN SOUTH FLORIDA
South Florida Water Management District Schedule

Region	Counties Addressed	Year to be Completed
Lower West Coast	Collier, Hendry, Lee	1994
Lower East Coast	Broward, Dade, Monroe, Palm Beach	1995
Upper East Coast	Martin, St. Lucie	1996
Kissimmee Basin	Glades, Highlands, Okeechobee, Orange, Osceola, Polk	1997

SOURCE: SFWMD, District Water Management Plan (1995a).

The Legislature has provided the SFWMD with an array of tools to ensure that environmental water needs are met. These tools include the authority to establish minimum flows and levels and the authority to reserve water for the environment. The establishment of minimum flows and levels as single points does not accurately reflect South Florida's historic hydro pattern, which ranged from periodic droughts to inundations caused by rainfall. Changes to the region's hydro pattern can alter and degrade natural systems. The Commission finds that, in South Florida, minimum flows and levels should be established and indexed to reflect seasonal and annual variations in rainfall in order to mirror the natural conditions of the Everglades ecosystem.

The Commission finds that, on its present course, South Florida is not sustainable. The water demands of the region's residents and commercial community must be considered and balanced with the needs of the natural system in order to achieve a sustainable South Florida. To ensure equitable allocations in the future, water budgets illustrating the amount of water available from various sources, in wet and dry periods, must be developed and used as the basis for future allocation decisions by the SFWMD. Creating a sustainable South Florida requires a change in the region's historic approach to water resource management. In an area which averages 53 inches of rainfall annually, it should be possible to provide an adequate water supply to satisfy all demands.

A-1. DEVELOP COORDINATED AND INTEGRATED WATER RESOURCE PLANS

At present, there are several different plans for managing water resources in South Florida. These focus either on ecosystem management or water supply. The Commission has undertaken an inventory and, to date, has identified approximately 200 different plans being developed at federal, state, tribal, regional, and local levels of government. These plans describe a variety of options for conserving, storing, treating, or distributing water needed to restore and maintain

1 a sustainable South Florida ecosystem. Unfortunately, consistency between these
2 plans is lacking. This lack of coordination results in various plans addressing a
3 single resource in vastly different ways, with no consensus as to those options
4 which are most feasible. Maintaining a sustainable ecosystem in South Florida
5 requires a coordinated regional approach to planning and management that
6 transcends political boundaries and narrow agency jurisdictions.
7

8 It is important that principles of sustainability and the State of Florida's goals for
9 restoration of the South Florida ecosystem provide guidance for the federal
10 government's efforts in South Florida. The Army Corps of Engineers (Corps) and
11 the SFWMD are undertaking the Restudy of the C&SF to determine the feasibility
12 of structural or operational modifications to it. These changes are essential to
13 restoration of the Everglades ecosystem and to provide for other water-related
14 needs. In 1993, the South Florida Ecosystem Restoration Task Force was
15 established to coordinate the development of consistent policies, strategies, plans,
16 programs, and priorities for addressing the concerns of the South Florida
17 ecosystem. State participation must be integrated into these federal activities.
18

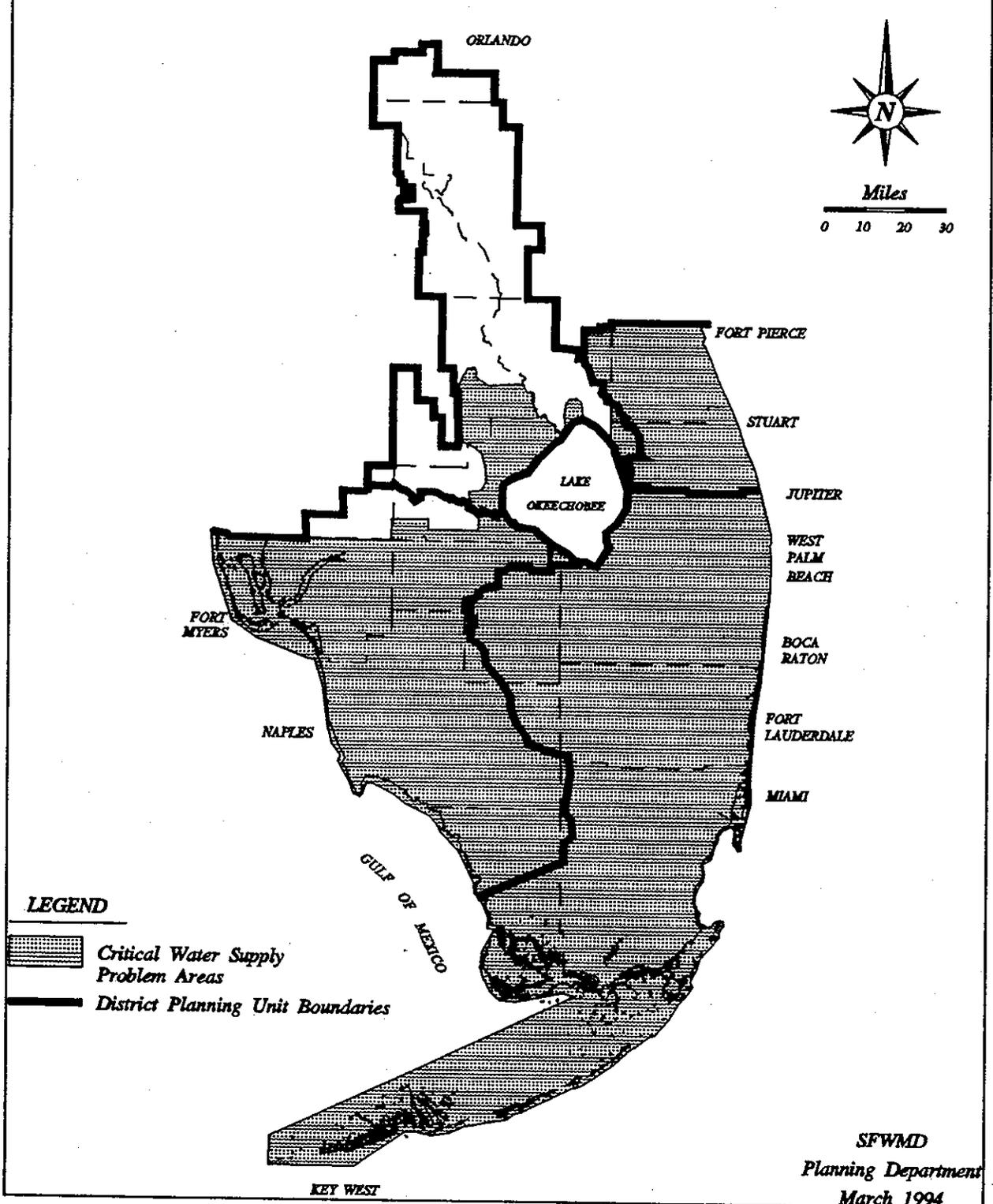
19 While recognizing the importance of the Restudy, its narrow focus on
20 environmental restoration does not provide sufficient attention to other water
21 needs. The alternatives proposed may provide sufficient water for the natural
22 resources of the South Florida ecosystem, but do not address people's water supply
23 needs. There will not be sufficient support for proposals to spend billions of
24 dollars on environmental restoration unless adequate attention is paid to meeting
25 the needs of the public health, safety, and welfare.
26

27 Coordination of land use plans with water resource issues is of special importance.
28 As shown in Map B on the following page, projected large increases in water
29 demand have caused the SFWMD to designate much of the region as a Critical
30 Water Supply Problem Area (also known as a Water Resource Caution Area).
31 The availability of water must be coordinated with land use decisions. At present,
32 local governments are required only to consider the adequacy of water treatment
33 infrastructure in making their land use decisions. The availability of raw water
34 for treatment is not always considered by local governments, which take the
35 position that the water management districts must provide them with adequate
36 water. Land use decisions are being made which do not reflect water resource
37 limitations.

WATER SUPPLY PROBLEM AREAS

(Water Resource Caution Area)

South Florida Water Management District



1 Lack of consistent time frames in the numerous plans under development further
2 complicates the problem in South Florida. The Restudy, for example, considers
3 the time period from the present through 2050 while the SFWMD water supply
4 plans cover only the period through 2010. Local government comprehensive plans
5 cover a 5 year period and a second time frame of their own choosing, with few
6 extending past the year 2000.

7
8 A framework must be created to ensure that the plans are coordinated,
9 implemented, and maximize use of public expenditures and facilities. There will
10 be a need for land acquisition, through condemnation if necessary, for restoration
11 and additional water sources. Enforceable non-degradation standards will be
12 necessary to protect these resources. Given the unique needs of the South Florida
13 ecosystem and the billions of dollars that could be required to restore it, special
14 legislative authority might be needed to provide oversight of the implementation
15 of long term restoration efforts. It is essential that federal, tribal, state, regional,
16 and local governments continue their commitment to restoration and carry out the
17 interagency coordination necessary for perpetual protection of the South Florida
18 water supply and its natural systems.

19 20 COMMISSION OBJECTIVES 21

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- **Ensure cooperation in the development and implementation of water resource and ecosystem restoration management plans to ensure that such plans are consistent and compatible at all levels of government and private planning.**
 - **Examine the need for modifications of legal and institutional structures in order to ensure the perpetual protection of a sustainable South Florida ecosystem.**
 - **Maintain the existing boundaries of the South Florida Water Management District.**
 - **Integrate planning and programs for ecosystem restoration, the provision of reliable, cost-effective water supplies, and the protection of aquifer function and capacity.**
 - **Examine the need for modifications to existing programs in order to ensure consistency in development and implementation of water supply programs based upon principles of sustainability, ecosystem management, and full cost accounting.**
 - **Identify benefits and account for long-run incremental costs in public and private land use and water management decisions.**

1 Recommendations:

- 2
3 1. The Commission should promote coordination in the development and
4 implementation of water resource and ecosystem restoration and
5 management plans, ensuring they are consistent with principles of
6 sustainability and ecosystem management.
7

8 Action Steps

- 9
10 a. The Commission should provide a forum for the discussion and
11 development of the technical tools necessary to understand and
12 address hydrologic issues.
13
14 b. Following transmittal of the Commission's Initial Report to the
15 Governor and Cabinet, the Florida Department of Community
16 Affairs (DCA) should review the strategic regional policy plans of
17 the 5 regional planning councils in the South Florida region for
18 consistency with the recommendations of the Commission and
19 should report their findings to the Commission and applicable
20 regional planning councils.
21
22 c. Beginning October 1, 1995, the DCA should review and comment
23 on the Evaluation and Appraisal Reports of the local government
24 comprehensive plans of the 16 counties in the South Florida region
25 for consistency with the recommendations of the Commission.
26
27 d. By January 1, 1996, the Governor should direct all appropriate state
28 agencies to develop standards of sustainability and ecosystem
29 management to be applied to all major public decisions.
30
31 e. By July 1, 1996, the Florida Department of Environmental
32 Protection (FDEP) and the SFWMD should review existing
33 processes and mechanisms for ecosystem management and
34 recommend changes consistent with the standards of sustainability.
35
36 f. By October 1, 1997, the SFWMD and the FDEP should review the
37 District's regional water supply plans for consistency with the
38 defined principles of sustainability and ecosystem management.
39
40 2. Land use and water management decisions should be evaluated using full
41 cost accounting principles. These must include:
42 (a) the legal costs of the proposed option, which must include the costs
43 and risks associated with changing law;
44 (b) the social and political impacts of the option;
45 (c) the ecological impacts of the option;
46 (d) the economic costs and benefits, including ecological costs and
47 benefits, of the option; and
48 (e) the technical feasibility of the option.

1 Action Step

2
3 a. The Commission shall assess and evaluate how to implement the
4 concept of full cost accounting through utilization of its Technical
5 Advisory Committee and through communication with other similar
6 organizations which are attempting to implement principles of
7 sustainability and the concept of full cost accounting, and report its
8 recommendation to implement these principles by December 1,
9 1997.

10
11 3. The Commission should analyze all agencies' efforts and resources devoted
12 to protection and/or restoration of the South Florida ecosystem.

13 Action Steps

14
15 a. The Commission should request that the Governor's Office find a
16 mechanism such as the Advisory Council on Intergovernmental
17 Relations to identify the public costs associated with current
18 uncoordinated planning and study efforts at local, regional, and
19 state agencies and identify duplicative agency efforts by July 1,
20 1997. The report should also identify opportunities for resource
21 sharing among agencies.
22

23
24 b. By February 1, 1996, the designated agency should develop a list
25 of information requirements to be obtained from federal agencies
26 involved in the South Florida Ecosystem Restoration Task Force to
27 ensure that potentially duplicative federal activities can be included
28 in their report to the Commission.

29
30 c. Within 6 months of receipt of the report, the Commission should
31 identify gaps in agency planning efforts and recommend specific
32 agency action to address the identified gaps.

33
34 d. By December 1, 1997, the Commission should provide the
35 Governor with a report identifying any additional revenue needs
36 and recommended priorities for funding which will be required to
37 finance protection and restoration of the South Florida ecosystem.

38
39 4. The Commission should evaluate alternative legal, institutional, or planning
40 mechanisms for applicability to the needs of the South Florida system.

41 Action Steps

42
43 a. By October 1, 1996, the DCA, in conjunction with local
44 governments, regional planning councils, the SFWMD, the FDEP,
45 the Florida Game and Fresh Water Fish Commission, and
46 appropriate federal agencies should assess whether adequate legal,
47 institutional, and planning tools are in place to implement the
48

1 recommendations of the Commission. The report should identify
2 funding mechanisms for the acquisition of privately owned lands,
3 when necessary. The state, where appropriate, should provide for
4 the necessary funding to the jurisdiction given responsibility.
5

6 b. The Commission recommends that the Governor, by December 1,
7 1996, propose recommendations for mechanisms to protect areas
8 which should be maintained in, or converted to, land uses which
9 ensure the sustainability of the South Florida ecosystem. The land
10 use planning process should be identified as the primary
11 mechanism to be used.
12

13 5. The SFWMD and local governments should explore and implement ways
14 to assure that, to the greatest extent possible, surface water management
15 for new development does not lower the present water table in such a way
16 that storage is lost and more water is lost for local use. Where such loss
17 is unavoidable, it should be evaluated for impacts on water availability and
18 natural systems.
19

20 Action Steps

21
22 a. The SFWMD should quantify the amount of ground water storage
23 lost and additional volumes lost to tide or from local use because
24 of existing development practices and permitting policies.
25

26 b. The SFWMD should project and evaluate the cumulative impacts
27 of these losses.
28

29 c. The SFWMD should explore criteria that would allow development
30 flexibility while preventing further water losses.
31

32 d. The SFWMD should implement this recommendation and should
33 include incentive-based policies that encourage new development
34 to maintain and enhance the existing water elevation and capacity.
35

36 e. Local governments should implement this recommendation for all
37 new land development. Creative local solutions should be
38 encouraged as long as they are not inconsistent with data and
39 requirements of the SFWMD.
40

41 f. The Institute for Food and Agricultural Sciences, in conjunction
42 with the SFWMD and agricultural interests, should develop Best
43 Management Practices (BMPs) which are compatible with
44 protecting and enhancing regional ground water storage consistent
45 with the continued production and expansion of agricultural
46 opportunities.
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6. The U.S. Army Corps of Engineers (Corps) and the SFWMD should regain lost water storage capacity where adequate flood protection for existing development and agricultural activities allows.

Action Steps

- a. As part of the Restudy, the Corps and the SFWMD, as rapidly as possible, should identify areas where water storage capacity has been reduced as a result of existing regulation schedules, but can be increased without significant adverse environmental consequences or diminished flood protection levels of service for existing development and agriculture.
- b. The Corps and the SFWMD should modify the regulation schedules for identified areas.
- c. The SFWMD should implement the revised regulation schedules developed by the Corps.
- d. The SFWMD should inventory its surface water management permits to ascertain the locations of areas where water storage capacity could be increased without adversely impacting flood protection levels of service for existing development and agriculture.

7. The SFWMD should continue to evaluate the regional impact of water storage options.

Action Step

- a. In its evaluation of water storage options for its on-going regional water supply planning effort, the SFWMD should consider the full range of regional costs and benefits of water storage options rather than only local impacts.

8. The SFWMD should identify and work with local governments, the Seminole Tribe, and the Miccosukee Tribe of Indians to develop alternative water sources and water conservation activities, where needed, to protect surface and ground water functions and capacity. This should be closely coordinated and integrated with local government planning activities.

Action Steps

- a. The SFWMD's water supply planning should identify alternative water sources, where needed, to protect surface and ground water functions and capacity.

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- b. The SFWMD should fully implement its water conservation program to ensure that all water users are maximizing water conservation efforts as a requirement of water use permit renewals.
 - c. Following acceptance of a water supply plan by the SFWMD, water supply entities in South Florida should develop appropriate strategies and mechanisms consistent with the options recommended in the appropriate water supply plan.
 - d. Local governments should reflect the SFWMD's water conservation program in the Conservation Element of their comprehensive plans.
9. Growth which creates new demands for water should be required to pay the full cost of obtaining and treating that water. Water supply facilities to meet demands must be justified and paid for by consumers using principles of full cost accounting.

Action Steps

- a. In 1996, the Legislature should modify § 373.1961, FS, to require that water management districts identify new sources of water for local governments that will meet future water demands.
 - b. By 1997, the SFWMD should complete groundwater basin resource inventories required under § 373.0395, FS, in order to identify to local governments, private utilities, industries, and other users the potential quantities of water available.
 - c. Local governments, as part of their Evaluation and Appraisal Reports, should identify new water supply facilities to satisfy future growth demands, using water supply from sources identified in the SFWMD's regional water supply plans and in quantities identified by the SFWMD in its groundwater basin inventories.
 - d. Local governments should maximize recovery of capital costs for water through impact fees or other methods. Upon completion of the SFWMD's regional water supply plans, local governments and water supply utilities should evaluate mechanisms to ensure that existing water users are paying the full cost to deliver water for their needs. New users who create additional demands for water should pay their reasonable share of the cost of developing new sources of water. Where local governments choose to implement less than the legal maximum, they should clearly state in their comprehensive plans what subsidies will be provided for growth.
10. Federal, state, and regional agencies and local governments should apply principles of adaptive management in their planning and implementation

1 activities to maintain flexibility and to incorporate the results of previous
2 actions.

3
4 Action Steps

- 5
6 a. Beginning in 1995, the FDEP, the DCA, the Florida Game and
7 Fresh Water Fish Commission, the SFWMD, and regional planning
8 councils should review their current planning and management
9 activities to ensure that principles of adaptive management are
10 being utilized.
- 11
12 b. Beginning October 1, 1995, Commission staff should initiate
13 meetings with local governments and regional planning councils to
14 advise them of the recommendations of the Commission and to
15 provide them with assistance regarding the use of adaptive
16 management techniques.
- 17
18 c. Commission staff should participate in meetings of the South
19 Florida Ecosystem Restoration Working Group to ensure that the
20 principles of adaptive management are considered in federal
21 planning and implementation activities.
- 22
23 11. Future water supply for environmental and non-environmental purposes
24 should be addressed in the Lower East Coast Regional Water Supply Plan,
25 the Lower West Coast Water Supply Plan, the Upper East Coast Water
26 Supply Plan, the Kissimmee Basin Water Supply Plan, and the Restudy,
27 which should be compatible with one another and with maintenance of
28 flood protection.

29
30 Action Steps

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32 a. The SFWMD and the U.S. Army Corps of Engineers should assure
33 that the Restudy addresses the need to achieve a sustainable South
34 Florida economy by identifying and evaluating projected 2050
35 demands of urban and agricultural users and proposing reliable,
36 cost-effective measures to provide the necessary water supply.
- 37
38 b. Since implementation of plans recommended by the Restudy may
39 not be completed by 2010, the SFWMD should update the Lower
40 East Coast Regional Water Supply Plan and its other water supply
41 plans every 5 years.
- 42
43 c. The SFWMD and all involved agencies should clearly define and
44 continuously review the critically important need for fluctuation in
45 the natural system for survival and sustainability.
- 46
47 12. The Commission should provide a mechanism to enable input and
48 integration of the state's concerns and interests with the U.S. Army Corps

1 of Engineers and the South Florida Ecosystem Restoration Task Force in
2 the Restudy and other federal activities.
3

4 Action Steps
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- 6 a. By January 1, 1996, the Commission should provide the SFWMD
7 and the Corps with specific recommendations describing its
8 preferred alternatives in the Restudy.
9
- 10 b. The Commission should consider the input of a support group, with
11 representatives of its advisory committees, the Corps, the SFWMD,
12 and other persons representing a balance of interests, in developing
13 recommendations describing preferred alternatives in the Restudy.
14
- 15 13. Contracts and plans for the working relationship between the U.S. Army
16 Corps of Engineers and the State, including the SFWMD, which define
17 state participation in the Restudy should be reviewed by the Governor's
18 Commission for a Sustainable South Florida to ensure that they:
19
- 20 (a) fully address urban and agricultural water supply needs;
 - 21 (b) include principles of sustainable ecosystem management;
 - 22 (c) are evaluated according to principles of full cost accounting;
 - 23 (d) reflect an expedited Restudy schedule, without sacrificing
24 the thoroughness or quality of the end product;
 - 25 (e) adequately assess impacts to flood protection; and
 - 26 (f) include appropriate water level fluctuations within the
27 natural system to build resilience and allow the continuation
28 of a healthy system based upon historical hydrologic cycles
29 and address the need to restore more natural water quality,
30 timing, volumes, and distribution to the Everglades.
31

32 Action Step
33

- 34 a. The Commission should continue to review contracts between the
35 Corps and the State, including the SFWMD, to ensure that the
36 principles described above are considered.
37
- 38 14. The Legislature should modify the requirements of the Local Government
39 Comprehensive Planning and Land Development Regulation Act (Ch. 163,
40 FS) to clearly indicate that local government comprehensive plans should
41 utilize the long range water supply plans of a water management district
42 containing the options of sources to provide needed water supplies to
43 urban, agricultural, and natural system uses and the results of the ground
44 water basin resource inventories under § 373.0395, FS, as "best available
45 information" under the requirements of the Local Government
46 Comprehensive Planning and Land Development Regulation Act (Ch. 163,
47 Part II, FS), although local governments should still be allowed to
48 demonstrate that more accurate information is available. Where

1 sustainability of human and natural systems.

- 2
- 3 b. Beginning in 1996, the DCA should not find any local government
4 comprehensive plan or amendment in compliance if the SFWMD
5 and the FDEP indicate that the amendment will negatively impact
6 the sustainability of human or natural systems. The SFWMD and
7 the FDEP should share the results of their comprehensive plan
8 amendment reviews with the Corps, the U.S. Environmental
9 Protection Agency, the National Park Service, and the U.S. Fish
10 and Wildlife Service.

- 11
- 12 17. In the Restudy, the SFWMD and the Corps should ensure that the redesign
13 of the system allows for resilience for a healthy natural system.

14 Action Step

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- 16
- 17 a. The SFWMD and the Corps should develop the Restudy to allow
18 for appropriate water level fluctuations within the natural system to
19 build resilience and allow the continuation of a healthy system
20 based upon historical hydrologic cycles.

21

22 **A-2. IMPROVE UNDERSTANDING OF WATER NEEDS**

23

24 South Florida's natural systems have been heavily impacted by human activities.
25 Impacts have ranged from the loss of habitat through physical alteration, such as
26 dredge and fill operations and bulkheading; alterations in the timing and quantity
27 of freshwater flows; and water quality degradation from inadequately treated
28 stormwater runoff from point and nonpoint sources.

29

30 A water budget is a fundamental means of describing and quantifying the amounts
31 and movement of water in the hydrologic cycle. Almost like a balance sheet in
32 accounting, a water budget depicts the source and amount of each water budget
33 component (e.g., rainfall, ground water, surface water, etc.) and describes where
34 that water goes (e.g., runoff to the ocean, evapotranspiration, and consumption).
35 The Technical Advisory Committee (TAC) to the Governor's Commission for a
36 Sustainable South Florida developed such a budget by consensus opinion. The
37 committee's report and the information contained within it has been adopted by the
38 Commission (See Appendix H). The report's final conclusions state that,

39

40 In predrainage times, Southeast Florida was a very wet area. Now, drained
41 urban and agricultural areas coexist with adjacent natural wetland areas.
42 The predrainage system was in balance with annual wet and dry rainfall
43 cycles. The modern system seems to be out of balance, with large flow
44 increases to the ocean. Assuming the modern system receives the same
45 general amount of rainfall as formerly fell on the predrainage system, then
46 restoring balance requires retaining more of this water in the system and
47 discharging less to the ocean. Because drained and natural areas comprise
48 a single interconnected system, there may be a common solution that

1 appropriate, local governments should designate appropriate areas on their
2 future land use maps for the capture and storage of water, including the
3 use of Aquifer Storage and Recovery.
4

5 Action Steps
6

- 7 a. The Commission recommends that the Governor, by December 1,
8 1995, propose draft legislation requiring compatibility between
9 local government comprehensive plans and the regional water
10 supply plans of the SFWMD.
11
12 b. Following adoption of a regional water supply plan by the
13 SFWMD's Governing Board, local governments should modify
14 their future land use maps to designate appropriate areas for the
15 capture and storage of water.
16
17 c. In its review of future amendments to local government
18 comprehensive plans, the DCA should consider the SFWMD's
19 regional water supply plans as "best available data" for capture,
20 storage, and management of water, unless the local government
21 demonstrates that more accurate data is available.
22

- 23 15. The Restudy should integrate all elements of water management (water
24 supply, flood protection, water quality protection, and natural system
25 management). Redesign should provide for sustainability for human and
26 natural system requirements.
27

28 Action Steps
29

- 30 a. Upon the Commission's acceptance of its Science Research
31 Advisory Committee's delineation of the boundaries of the natural
32 system and other areas important for South Florida ecosystem
33 management, the SFWMD and the Corps should incorporate these
34 concepts into the Restudy.
35
36 b. The SFWMD and the Corps should conduct the Restudy consistent
37 with the principles of sustainability and ecosystem restoration
38 goals.
39

- 40 16. All plans, and especially the Restudy, should assure that new demands do
41 not adversely affect the sustainability of human and natural systems.
42

43 Action Steps
44

- 45 a. Beginning in 1996, the FDEP, the DCA, the Florida Game and
46 Fresh Water Fish Commission, the SFWMD, and the regional
47 planning councils should review their current planning activities to
48 assure that new water demands will not adversely affect the

1 solves the region's water problems. It is likely that just a portion of
2 increased flows to the Atlantic estuaries from Dade, Broward, and Palm
3 Beach Counties will be sufficient to meet natural system needs and
4 increased urban needs. **This may be the most encouraging result of the**
5 **analysis.** Improving water conditions in the Everglades and surrounding
6 estuaries does not necessarily mean hardship for urban and agricultural
7 areas. The urban and agricultural areas could be part of the solution--not
8 the problem. Paradoxically, achieving balance in the total South Florida
9 system, including more natural Everglades and estuaries, will require
10 additional structural facilities and increased operational flexibility (TAC,
11 1995: pp. 76-77).
12

13 A significant step toward protecting the natural systems of South Florida will be
14 the quantification of the systems' water needs. Florida law mandates that the
15 water management districts establish minimum flows for all surface water courses
16 and minimum levels for ground water in aquifers. It also defines these minimum
17 flows and levels as the point where further withdrawals of water will cause
18 significant harm to the water resources or ecology of an area (§ 373.042, FS).
19 The SFWMD uses the Natural Systems Model as a tool within the Lower East
20 Coast Regional Water Supply Plan for setting environmental restoration goals to
21 assist in setting environmental goals for priority water bodies. The SFWMD has
22 identified its priorities for setting minimum flows and levels in the District Water
23 Management Plan (SFWMD, 1995a). The schedule is shown in Table A-3.
24

25 As South Florida continues to develop, wetland areas are still being lost. To
26 compensate for this loss, mitigation is often required. Removal of exotic
27 vegetation, or other environmental enhancement of public property, is often
28 accepted as mitigation. While this does reduce the public funds required for land
29 management, it does not always replace the function and value of the lost wetland.
30 Great care must be taken to insure that functional values and not just mitigation
31 ratios are being maintained. For example, although commendable, removal of
32 melaleuca trees from a sawgrass marsh does not replace the functional values of
33 a lost cypress slough. Re-establishing a more natural hydroperiod in a long
34 hydroperiod wetland does not replace the functional value of a lost short
35 hydroperiod isolated wet prairie.

TABLE A-3
MINIMUM FLOWS AND LEVELS
South Florida Water Management District Schedule

	Priority Water Body	Year Projected for Submittal to Governing Board
Surface Waters	Lake Okeechobee	1996
	Everglades National Park (including Florida Bay)	1996
	Water Conservation Areas	1996
	Big Cypress Nat'l Preserve	1999
	Caloosahatchee Estuary	1999
	Loxahatchee River	2000
	St. Lucie Estuary	2000
	Biscayne Bay	2004
	Kissimmee River	2004
	Lake Kissimmee	2004
	Lake Tohopekaliga	2006
	East Lake Tohopekaliga	2006
	Alligator Lake	2006
	Lake Jackson	2006
	Lake Rosalie	2006
Ground Waters	Cypress Lake	2006
	Lake Hatchineha	2006
	Lake Pierce	2006
	Lake Marian	2006
	Fish Lake	2006
	Lower West Coast Surficial Aquifer System	1995
	Biscayne aquifer	2000
Floridan aquifer	2004	

SOURCE: SFWMD, District Water Management Plan (1995a).

1 In addition to biological values, wetlands provide important hydrologic functions
2 such as floodplain storage, flow equalization, and ground water recharge.
3 Currently, mitigation for such hydrologic wetland values is not required by law.
4 If mitigation does not consider and replace all the physical, chemical, and
5 biological functions being lost, it only facilitates and hastens the decline of the
6 South Florida ecosystem.

7 8 COMMISSION OBJECTIVES 9

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- **Identify the water needs of the natural system and the sources necessary to meet those requirements.**
 - **Assure that current and future water resources are preserved and allocated so that our businesses, our natural systems, and the quality of life of our people *are* sustainable.**
 - **Improve the capacity and operational flexibility of South Florida's water management system to correct the present and future water shortfalls in a manner that encourages and enhances productivity, resilience, and diversity in human and natural systems.**
 - **Ensure that mitigation efforts incorporate hydrologic considerations and reflect ecosystem goals, including the identification and securing of wetland functions.**

22 23 Recommendations:

- 24
- 25 18. The people of Florida should be made aware that the South Florida
26 ecosystem is not sustainable on our present course. Floridians, at all
27 levels, need to recognize that we can sustain neither our existing human
28 nor our natural systems in South Florida with regard to water if we do not
29 change direction.

30 31 Action Steps

- 32
- 33 a. Beginning in 1995, the Department of Education should initiate a
34 public education program, in conjunction with the State University
35 System and other appropriate agencies, which will inform the
36 public of the implications of the present course of action and the
37 need to change. The recommendations of the Governor's
38 Commission to encourage sustainability should be emphasized.
39 This information should be placed on the Internet to ensure its
40 maximum access and distribution.
- 41
- 42 b. Staff from the FDEP, the DCA, the Florida Game and Fresh Water
43 Fish Commission, the SFWMD, and the regional planning councils
44 should meet annually, beginning in 1996, to review agency status
45 reports and plans and to discuss enhanced coordination of each

1 agency's activities to promote sustainability of the South Florida
2 ecosystem.

3
4 c. The TAC Report should be distributed to schools, the media, and
5 other public and private entities to begin educating the public about
6 the steps that need to be taken to achieve sustainability in South
7 Florida.

8
9 19. The SFWMD, in conjunction with the U.S. Army Corps of Engineers,
10 should focus on the needs of all users of water, including the human and
11 the natural systems, in decisions which impact water use and availability.
12 The needs of all water users, including the Seminole Tribe and the
13 Miccosukee Tribe of Indians, should be balanced in making equitable
14 allocations of water.

15
16 Action Steps

17
18 a. The SFWMD should establish minimum flows and levels for
19 natural systems. The process should be closely coordinated with
20 local governments. The establishment of the minimum flows and
21 levels should be prioritized with an emphasis on the needs of the
22 Everglades. Upon the establishment of the minimum flows and
23 levels, the SFWMD's water supply planning and permitting process
24 should be revised to ensure that such minimum flows and levels
25 can be met.

26
27 b. Water needs for existing users shall be determined on a current as
28 well as a projected sustainable basis.

29
30 c. The SFWMD and the Corps should determine the amounts needed
31 for restoration projects and other projects necessary for public
32 health or safety. Subsequent to these determinations, the SFWMD,
33 the Corps, and the FDEP should implement the restoration and
34 water supply projects to ensure the future sustainability of the
35 natural system and the South Florida economy. However,
36 reservations of water should not be made which make it more
37 difficult to achieve sustainability for the natural system or for all
38 existing legal users of water.

39
40 20. The SFWMD, in conjunction with other appropriate agencies, should move
41 forward as rapidly as possible with the establishment of appropriate
42 minimum flows and levels for those water bodies which are determined to
43 be critical to maintaining the health of the natural system. Periodically, the
44 SFWMD should review and update its list of priority water bodies for
45 establishing minimum flows and levels.

1 Action Steps

- 2
- 3 a. The SFWMD should re-evaluate its schedule for minimum flows
- 4 and levels as described in the District Water Management Plan to
- 5 see if it can be accelerated based on the best available scientific
- 6 information about the priority water bodies.
- 7
- 8 b. Every 5 years, the SFWMD should review and re-evaluate the
- 9 minimum flows and levels it has established. Any revision of
- 10 minimum flows and levels should be closely coordinated with local
- 11 governments.
- 12
- 13 c. As described in the District Water Management Plan, the SFWMD
- 14 should review and update the list of priority water bodies every 5
- 15 years in coordination with FDEP, the Florida Game and Fresh
- 16 Water Fish Commission, the DCA, the Seminole Tribe, the
- 17 Miccosukee Tribe of Indians, and the South Florida Ecosystem
- 18 Restoration Task Force.
- 19
- 20 21. The minimum flows and levels established by the SFWMD should be
- 21 incorporated into public agency project plans, local government
- 22 comprehensive plans, and the regulatory programs of federal, state,
- 23 regional, and local agencies.
- 24

25 Actions Steps

- 26
- 27 a. As soon as minimum flows and levels are established for a priority
- 28 water body under federal jurisdiction, the SFWMD and the Corps
- 29 should review existing operational schedules and revise them for
- 30 consistency with the established minimum flows and levels. The
- 31 information used to establish minimum flows and levels should also
- 32 be incorporated into the Restudy as appropriate.
- 33
- 34 b. Within 2 years of the adoption of minimum flows and levels by the
- 35 SFWMD, all federal, state, regional, and local agencies should
- 36 effect necessary legislative and administrative rule changes to
- 37 insure that their permit decisions support achieving and maintaining
- 38 minimum flows and levels.
- 39
- 40 c. The DCA should advise local governments that the minimum flows
- 41 and levels established by the SFWMD should be considered "best
- 42 available information," absent other acceptable studies, and that the
- 43 DCA will evaluate all comprehensive plan amendments for
- 44 compatibility with the established minimum flows and levels.
- 45
- 46 22. The SFWMD should expedite development of the Lower East Coast
- 47 Regional Water Supply Plan and its other regional water supply plans with
- 48 an emphasis on clearly defining the need for fluctuations in the natural

1 system for survival and sustainability. These water supply plans should
2 identify mechanisms to meet the needs of the natural and human systems,
3 to meet existing legal rights, to protect the health and safety of current
4 residents, and to evaluate needs and sources for future users.

5
6 Action Step

- 7
8 a. The SFWMD should adhere to the schedule contained in the
9 District Water Management Plan for the completion of all of its
10 regional water supply plans.
11
12 23. The SFWMD, the Seminole Tribe, the Miccosukee Tribe of Indians, the
13 U.S. Army Corps of Engineers, public water supply entities, and other
14 interested parties should redesign and develop new operations for the South
15 Florida water management system at all levels to conserve and sustain
16 natural systems, to maximize the capture of stormwater, and to conserve
17 water for the benefit of all users by:
18
19 (a) providing facilities and storing, for future use, excess
20 freshwater currently lost to tide;
21 (b) using buffer storage areas to conserve water and to reduce
22 ground water seepage out of the Everglades;
23 (c) using aquifer storage and recovery systems; and
24 (d) practicing wastewater reuse and other water conserving
25 measures.

26
27 Action Steps

- 28
29 a. The SFWMD should incorporate the options described above in its
30 evaluation of alternatives for meeting water supply needs in the
31 Lower East Coast Regional Water Supply Plan and its other water
32 supply plans.
33
34 b. In the Restudy, the Corps should include and evaluate the
35 alternatives recommended in the SFWMD's regional water supply
36 plans.
37
38 c. The SFWMD, working with FDEP and the U.S. Environmental
39 Protection Agency, should fully evaluate the feasibility of aquifer
40 storage and recovery to store water during wet periods for recovery
41 and use during dry periods. Aquifer storage and recovery should
42 be field tested as soon as possible.
43
44 d. The SFWMD's water supply planning should identify additional
45 water supply sources to replace shortfalls developed by the
46 implementation of minimum flows and levels to ensure
47 sustainability. Following acceptance of a water supply plan by the
48 SFWMD, water supply entities in South Florida should begin to

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develop appropriate strategies and mechanisms consistent with the options recommended in the appropriate water supply plan.

e. Reuse legislation should be pursued in 1996 to require the water management districts to provide incentives to all permittees for use of reclaimed water. Potential incentives should include:

- (1) increased water supply availability;
- (2) extended duration (20-50 year) permits; and
- (3) grants and cost-sharing programs specifically for reuse.

f. Reuse legislation should link the FDEP's domestic wastewater permitting program to the enhancement of water availability in the water management districts' water use permitting program.

g. Reuse legislation should prohibit the water management districts from issuing water use permits to water users which are required by local government to connect to reclaimed water sources.

24. The SFWMD should modify its water shortage plan (Ch. 40E-21, FAC) to limit man-made withdrawals (agricultural and urban) from identified priority water bodies and environmentally sensitive areas within the South Florida ecosystem when water levels approach minimum flows and levels, while at the same time considering all users in an equitable manner. The plan should phase in restrictions so that sudden complete cut-off to other uses does not occur and so that adverse impacts to such users are minimized.

Action Steps

a. The SFWMD should review and appropriately revise its water shortage plan (Ch. 40E-21, FAC) and its supply-side management plans to establish adequate trigger levels and mechanisms for the management of water resources to avoid reaching minimum flows and levels.

b. Beginning in 1996, the SFWMD should identify environmentally sensitive areas for which it is not establishing minimum flows and levels (e.g., selected uplands, Pennsuco wetlands, and selected estuaries) and identify how they shall be protected.

25. The FDEP, the SFWMD, and the U.S. Army Corps of Engineers should review wetland mitigation rules to ensure that the replacement of specific hydrologic and biological functional values is achieved where appropriate.

1 Action Steps
2

- 3 a. By 1997, the FDEP and the SFWMD should undertake a
4 comprehensive review of their wetland mitigation rules in
5 coordination with the South Florida Wetland Conservation
6 Permitting and Mitigation Strategy being developed by the Wetland
7 Interagency Coordination Group, the U.S. Environmental Protection
8 Agency, and the Corps.
9
- 10 b. Where necessary to ensure the maintenance or replacement of
11 appropriate biological or hydrologic functional values, the FDEP
12 and the SFWMD should revise wetland mitigation rules.
13

14 **A-3. MINIMIZE FLOODING IMPACTS**
15

16 Flooding in Florida is typically caused by heavy or prolonged rainfall from
17 tropical storms, hurricanes, large thunderstorms, and winter frontal activity.
18 Stormwater runoff is created when the intensity of rainfall exceeds the ability of
19 the land to absorb water. During extreme storms, when runoff exceeds the
20 capacity of flowways to remove water, flooding results. Storm surges can also
21 cause flooding by inundating coastal areas.
22

23 Flooding can occur in either floodplains, low-lying lands adjacent to rivers,
24 streams, lakes, wetlands, coastal waters, or in other low-lying poorly drained
25 flood-prone areas. The Federal Emergency Management Administration estimates
26 that nearly 14.25 million acres, or 41%, of Florida is flood prone--the highest
27 percentage of any state. More significantly, the DCA estimates that approximately
28 13% of the state's population lives in areas subject to flooding. Since 1979, the
29 majority of federally declared disasters in Florida have involved flooding (DCA,
30 1994).
31

32 It is not surprising that flooding frequently occurs in a state that originally was
33 one-half wetlands. Human history in Florida is replete with flooding experiences,
34 most notably the devastating hurricanes of the early 20th century that brought
35 about construction of the C&SF--the system of levees, canals, and water control
36 structures that make much of South Florida habitable. The C&SF represents a
37 tremendous investment of public monies in flood protection infrastructure, with
38 more than 1,400 miles of canals and levees, over 2,000 water control structures
39 and pump stations, and approximately 256,000 acres of water conservation areas
40 (SFWMD, 1995a). The C&SF is the primary flood protection infrastructure in
41 South Florida. Additional protection is provided by the local systems operated by
42 special districts, private property owners, and local governments.
43

44 This investment in flood protection infrastructure has not been able to totally
45 eliminate flooding in developed areas as even a highly managed system cannot be
46 completely floodproofed. In addition, natural areas have suffered damage as a
47 result of operating the flood control system to benefit developed areas. The
48 transfer of floodwaters from developed areas to undeveloped areas has resulted in

1 unnaturally high water levels in natural areas. On occasion, wading bird nesting
2 has been disrupted, alligator nests destroyed, and many mammals drowned.
3 Prolonged high water levels have also interfered with recreational use of public
4 lands and waters.

5
6 Florida's high vulnerability to flooding demands responses to protect the public
7 health, safety, and welfare, the social and economic impacts of which can be
8 staggering. For instance, statewide flood damage from 3 tropical storms and 2
9 tropical disturbances in 1993 was approximately \$500 million. The State
10 Comprehensive Plan (Ch. 187, FS) acknowledges the responsibilities of local
11 governments and the SFWMD for adopting plans and policies which protect public
12 and private property and human lives from the effects of natural disasters and
13 flooding. Future public liabilities related to flood losses can be greatly reduced
14 through proper control of development in floodplains and flood prone areas and
15 maintenance of the existing flood protection infrastructure.

16 17 COMMISSION OBJECTIVE 18

- 19 • **Incorporate into all planning and policy decisions the concept of**
20 **"shared adversity" from the impacts of floodwaters by reducing the**
21 **extent of damage from flooding to both the human and natural system**
22 **to the greatest extent possible for all components of the South Florida**
23 **ecosystem.**

24 25 Recommendations:

- 26
27 26. Local governments and state agencies should recognize the limitations of
28 the C&SF Project in their land use and/or water management decisions and
29 policies. Local governments should revise their comprehensive plans to
30 reflect these limitations while preparing their Evaluation and Appraisal
31 Reports.

32 33 Action Steps

- 34
35 a. For undeveloped flood prone areas, local government future land
36 use maps should limit development to flood compatible uses.
37
38 b. Local planning agencies should direct the construction of new
39 housing and encourage the relocation of existing housing away
40 from flood prone areas through revisions to their future land use
41 maps and meaningful local development regulations and financial
42 incentives.
43
44 27. The U.S. Army Corps of Engineers and the SFWMD should reduce the
45 extent of damages from flooding to human and natural systems.
46
47

1 Action Steps
2

3 a. The Corps and the SFWMD should immediately investigate and
4 revise management of the C&SF Project by modifying operational
5 criteria to enhance the existing level of flood protection in human
6 and natural areas. For authorized projects currently in design,
7 changes in structural features should be incorporated, where
8 feasible, to the extent that they assist in achieving this
9 recommendation.

10
11 b. During the Restudy, the Corps and the SFWMD should identify
12 existing areas that experience ecological or economic damages
13 caused by flooding.

14
15 c. During the Restudy, the Corps and the SFWMD should identify
16 feasible operational and structural solutions to reduce existing flood
17 damage potential to human and natural systems.

1 **B. INCREASE FOCUS ON POLLUTION PREVENTION**

2
3 For a sustainable future, it is essential to maintain the capacity of the South
4 Florida ecosystem to assimilate wastes released into the environment. Numerous
5 pollutants released into the environment have threatened the ability of the
6 ecosystem to maintain a viable population of native species as well as human
7 health. Many of the substances, including various toxics such as pesticides and
8 heavy metals, contaminate the ground water and surface water sediments. These
9 are bioaccumulated in animal populations, thus persisting for long periods of time.
10 Also, nutrients are proven to have significant negative impacts on the Everglades
11 and other surface water bodies.

12
13 Runoff pollutants are generated from agricultural and urban land uses and include
14 sediments, nutrients from concentrated animal operations and fertilizers, heavy
15 metals from vehicles, herbicides, and pesticides. Point sources of pollution
16 include discharges from specific sites such as wastewater treatment plants and
17 commercial or industrial sites that release pollutants into the air or a water body.

18
19 In recent years, water quality problems have been identified in several areas of
20 South Florida. Concentrations of phosphorus in water flowing into the Everglades
21 have caused significant degradation of natural systems. High concentrations of
22 nutrients are found in the inflows to the Water Conservation Areas. These inflows
23 are from a large region that now delivers water to the Water Conservation Areas,
24 including the Everglades Agricultural Area, lands adjacent to the Everglades
25 Agricultural Area, and Lake Okeechobee and urban areas within the lower east
26 coast. The recently passed Everglades Forever Act is attempting to curtail these
27 deleterious impacts. Additional nutrient problems (dissolved oxygen and
28 ammonia) have been identified in areas where water has been backpumped into
29 the Water Conservation Areas from the urbanized east coast to provide flood
30 protection. Recent work by the National Wildlife Federation and others (National
31 Wildlife Federation, 1994) has revealed a connection between water borne
32 chemicals and human fertility. SFWMD water quality monitoring data throughout
33 the ecosystem found a broad range of chemicals present in the water. While these
34 chemicals were present at levels below the U.S. Environmental Protection Agency
35 (EPA) standards, large amounts of water move through these stations each year.

36
37 In the 1970s and 1980s, algal blooms in Lake Okeechobee indicated that the lake
38 was receiving excessive nutrients and becoming more eutrophic. The flow of
39 nutrients, primarily phosphorus, into the lake has been reduced in an attempt to
40 improve the quality of the lake's water (SFWMD, 1993a). The changes have been
41 attributed to reduced backpumping into Lake Okeechobee, the implementation of
42 Best Management Practices at dairy farms north of the lake, and various
43 permitting programs of the SFWMD and FDEP.

44
45 Florida Bay has also shown signs of stress. Large areas within this shallow
46 brackish estuary have deteriorated, exhibiting murky water, seagrass die-offs, algal
47 blooms, fish kills, sponge die-offs, and significant increases in salinity. The
48 problems facing Florida Bay are associated with changes in the distribution of

1 water, reductions in the amount of fresh water reaching the Bay, and other water
2 quality factors (Boesch, et al., 1993).

3
4 The Florida Keys contain the only living coral reef in the continental United
5 States, as well as many environmentally sensitive lands and nearshore waters,
6 several of which have been designated as federal or state conservation areas. The
7 State of Florida has designated the Keys as an Area of Critical State Concern to
8 recognize its many environmental, social, economic, and historic resources of
9 state, national, and international significance. Human impacts on the environment
10 both in and out of the Keys now threaten the sustainability of this resource.

11
12 Localized water quality problems have also been identified in several other areas.
13 These include:

- 14
15 (1) the Florida Keys, where discharges from wastewater treatment
16 plants, septic tanks and cesspits, in combination with poorly flushed
17 canals, have introduced toxins into the sea water resulting in
18 disastrous impacts on the coral reefs;
- 19 (2) the Miami River, where discharges from aging sanitary and storm
20 sewer systems and public and private facilities have contributed to
21 poor water quality and severe sediment contamination, thereby
22 threatening the environmental health of Biscayne Bay and
23 prohibiting full economic and recreational use;
- 24 (3) Lake Istokpoga, which has shown signs of eutrophication as a
25 result of high nutrient loadings from wastewater plant discharges
26 and nonpoint source runoff (SFWMD, 1995a);
- 27 (4) Arch Creek in Dade County, which is so badly polluted that human
28 contact with the water should be avoided; and
- 29 (5) Certain water and sediment pollutants levels in Collier County,
30 which are the highest in the State (Collier County ESD, 1994).

31
32 Over the years, various fish and wildlife populations in the Everglades have been
33 sampled and determined unsafe for human consumption due to excessive mercury
34 levels. Further testing of fish, wildlife, and vegetation may be needed in more
35 areas and for chemicals other than mercury. In the Everglades region, bass can
36 only be consumed in limited quantities and alligator harvesting has been stopped.
37 Furthermore, mercury has been implicated in several panther deaths in Everglades
38 National Park, Big Cypress National Preserve, and the East Everglades. A Florida
39 Game and Fresh Water Fish Commission study also determined that certain ducks
40 south of Lake Okeechobee had excess levels of harmful chemicals in them
41 (Turnbull, et. al., 1989).

42
43 For many years, the FDEP has relied, almost entirely, on traditional means for
44 controlling pollution--permitting, compliance, monitoring, and enforcement.
45 Initially, these efforts led to substantial reductions in discharges and emissions.
46 But growth in population, industry, and agriculture, as well as the increase in
47 nonpoint sources of pollution, have begun to offset the gains. To more effectively
48 address the problems resulting from Florida's growth, a broader range of strategies

1 must be adopted.

2
3 The costs associated with pollution prevention are relatively low when compared
4 with restoration, cleanup, and mitigation programs, which are expensive, require
5 extensive scientific and engineering expertise, and use complex, costly chemical
6 and mechanical processes. Prevention activities include education, training,
7 technical assistance, and a variety of financial and administrative incentives to
8 achieve results and may be more environmentally effective. Prevention strategies
9 are designed to stop pollution from occurring, thereby preventing degradation of
10 environmental values.

11
12 Pollution prevention is the first choice in the waste management hierarchy. This
13 hierarchy states that:

- 14
- 15 • pollution should be prevented or reduced at the source whenever
 - 16 feasible,
 - 17 • pollution that cannot be prevented should be recycled in an
 - 18 environmentally safe manner whenever possible,
 - 19 • pollution that cannot be prevented or recycled should be treated in
 - 20 an environmentally safe manner whenever possible, and
 - 21 • disposal or other release into the environment should be employed
 - 22 only as a last resort and should be conducted in an environmentally
 - 23 safe manner.
- 24

25 Pollution prevention includes source reduction and conservation of natural
26 resources. Increased efficiency in the use of materials, energy, or other resources
27 also constitutes conservation. The term source reduction means practices which
28 reduce the amount of any hazardous substance, pollutant, or contaminant entering
29 any waste stream or otherwise released into the environment (including fugitive
30 emissions) prior to recycling, treatment, or disposal and, which reduce the hazards
31 to public health and the environment associated with their release.

32
33 When targeting a geographic area as a whole, pollution prevention should be
34 considered the tool of first choice in environmental protection and manufacturing
35 improvements for the area. Based on the characteristics and problems of the area,
36 pollution prevention will be used in different applications. If the area has an
37 industrial component, pollution prevention could be utilized in the form of
38 outreach.

39
40 Air pollution in South Florida is related primarily to the area's large population.
41 The area is not heavily industrialized, but the combined emissions from motor
42 vehicles, electrical power plants, and municipal waste incinerators are significant.
43 Persistent breezes off the Atlantic Ocean tend to flush pollutants away from the
44 densely populated coastal areas, keeping air pollution levels in the cities relatively
45 low. However, as these emissions are transported downwind, they may impact
46 sensitive ecosystems.

1 In recent years, high levels of mercury have been found in fish from the
2 Everglades. Research is now underway to determine the extent to which regional
3 and global emissions of mercury may be contributing to this problem. Despite the
4 projected increase in South Florida's population over the next two decades,
5 programs instigated under the Clean Air Act are expected to keep air pollutants
6 close to current levels. Programs to reduce vehicle miles traveled, conserve
7 energy, and minimize waste may decrease emissions.

8
9 Substantial progress has been made in solid waste management in South Florida
10 in the past 10 years. All landfills which receive mixed municipal solid waste have
11 liners. A substantial portion of the waste is burned in several large waste-to-
12 energy plants. The populous urban counties have implemented large-scale
13 recycling, composting, and mulching programs. Recycling in these counties is
14 generally close to or exceeds the state required goal of a 30% recycling rate.

15
16 Two areas, however, remain problematic. These are disposal standards for
17 construction and demolition debris and control of illegal dumping. Current state
18 standards for construction and demolition debris disposal are inadequate. The
19 FDEP supported legislation in 1995 which would have allowed that agency to
20 draft more protective standards, but the bill failed to become law. Illegal dumping
21 is a chronic problem in natural areas adjacent to urban areas (e.g., the East
22 Everglades). The resulting dumps are not only eye-sores, but also a potential
23 threat to ground water quality and wildlife.

24
25 Over the past 25 years, federal, state, and local regulatory programs have
26 systematically identified and attempted to reduce discharges from most major
27 sources of air and water pollution. Wastewater treatment plants, industrial
28 facilities, landfills, and a host of other similar facilities are now managed to
29 minimize damages. A substantial portion of the remaining pollution is not related
30 to large industries or institutions, but to the cumulative effect of the numerous
31 individual decisions people make every day. The use and disposal of fertilizers,
32 pesticides, household chemicals, and petroleum products has enormous
33 environmental consequences. Where, how, and how much we use our automobiles
34 has significant impact on local, regional, and global air quality. Generally, people
35 do not make decisions with malicious intent. On the contrary, most people want
36 to do the right thing for the environment. Most people who act to harm the
37 environment do so because they are uninformed, have been afforded no
38 alternative, or are insufficiently convinced that their actions have a significant, or
39 "collective," environmental effect. For these individuals, and those that will
40 follow, education is the most effective, cost-efficient, and positive means of
41 changing detrimental habits.

COMMISSION OBJECTIVES

- **Ensure that plants and animals in the South Florida ecosystem are not contaminated with levels of pollutants unhealthy to humans and wildlife.**
- **Further integrate the principles of ecosystem management into waste management strategies in order to improve and maintain the quality of South Florida's water, air, land, and biological resources.**
- **Ensure that South Florida's pollution treatment, management, and prevention infrastructure needs are adequately addressed and maintained in order to protect human health and safety and the natural environment.**
- **Ensure that the quality of air and water in the South Florida ecosystem is adequate for ecosystem protection and sustainability.**

Recommendations:

28. The Florida Game and Fresh Water Fish Commission, in coordination with the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the Department of Health and Rehabilitative Services, FDEP, the National Marine Fisheries Service, the National Oceanographic and Atmospheric Administration, and other appropriate state and federal agencies should develop a study of existing conditions which should include water quality and selected plant and animal species that are key indicator components of the food chain to determine ecosystem health. Those selected should include plant and animal species that are commonly consumed by man and wildlife to determine if they are safe for consumption. These agencies should continue to monitor water quality and the selected species on at least an annual basis.

Action Steps

- a. By December 1, 1996, the Florida Game and Fresh Water Fish Commission, working with the above agencies, should finalize and provide to the Commission an action plan, with a research schedule, for jointly accomplishing a study of existing conditions which should include water quality and key selected plant and animal species.
- b. Each July 1 until the year 2000, the Florida Game and Fresh Water Fish Commission should continue to report the updated findings and recommendations resulting from the continuing joint studies to the Governor's Commission for a Sustainable South Florida, FDEP, the SFWMD, and the South Florida Ecosystem Restoration Working Group.

- 1 29. The FDEP, in coordination with other agencies, should review the data,
2 analyze problem areas, and develop a plan to correct any water quality,
3 pollution, or toxic accumulation problems identified in the study of
4 existing conditions.

5
6 Action Steps

- 7
8 a. By May 1, 1998, the interim results of the study, including existing
9 conditions, recommendations for future studies, and any needed
10 state and federal actions, should be reported by the Florida Game
11 and Fresh Water Fish Commission to the Governor's Commission
12 for a Sustainable South Florida, FDEP, the EPA, the SFWMD, and
13 the South Florida Ecosystem Restoration Working Group.
14
15 b. By July 1, 1998, the South Florida Ecosystem Restoration Working
16 Group should consider the interim report and take any corrective
17 actions needed under their respective jurisdictions. Additionally,
18 the Working Group should review any resulting recommendations
19 relating to needed federal actions and studies and propose needed
20 federal funding or legislative changes to the South Florida
21 Congressional delegation.
22
23 c. By December 1, 1998, the FDEP, in cooperation with other state
24 and regional agencies, should consider the interim report and take
25 any corrective actions needed under the Department's jurisdiction.
26 Additionally, the Department should review any resulting
27 recommendations related to needed state actions and studies and
28 propose any needed state funding or legislative changes to the
29 South Florida Legislative delegation.
30
31 d. The SFWMD should review monitoring results which show
32 pesticides and herbicides in the water and report on possible
33 problems. The report should be made available to the EPA with
34 recommendations that all exemptions from label restrictions and
35 requirements should be reviewed and modified due to water quality
36 pollution when found.
37
38 30. The FDEP should develop and implement a pollution prevention strategy
39 for South Florida in order to prevent or reduce pollution at the source,
40 whenever feasible.

41
42 Action Steps

- 43
44 a. By July 1996, the FDEP should establish a multimedia
45 prevention group in its Southeast District Office to
46 coordinate the pollution prevention efforts of industry,
47 commerce, the agricultural community, and the general
48 public with other Department programs, local governments,

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the SFWMD, and regional planning councils. Local government environmental agencies in South Florida should establish multi-media programs and conduct multi-media inspections.

- b. By July 1996, local pollution prevention programs, with support from FDEP and EPA, should identify businesses in South Florida to receive waste assessments from the FDEP's Waste Reduction Assistance Program. Follow-up should be conducted in one year to assess implementation. The FDEP should reinstate its retired engineers program to support this effort.
- c. By July 1996, make available the EPA Region 3 and 4 Waste Reduction Resource Center's services to provide train-the-trainer courses for companies that would like to start their own pollution prevention programs.
- d. Dade County's Department of Environmental Resource Management Pollution Prevention and Broward County's program should be involved in training trainers and in developing similar programs in other South Florida counties.
- e. By 1997, the university system should establish commerce pollution prevention programs in South Florida universities to provide research and technical assistance in pollution prevention.
- f. By 1997, the Institute of Food and Agricultural Sciences should establish a multimedia pollution prevention program to provide technical assistance and technological transfer to the agricultural community.
- g. By 1998, South Florida counties, with assistance from the FDEP, should establish citizen/consumer source reduction programs using the existing infrastructure of pollution prevention and recycling programs in urban centers, to provide education and technical assistance to the general public.
- h. Staff from FDEP, DCA, the Florida Game and Fresh Water Fish Commission, the water management districts, and regional planning councils should meet annually, beginning in 1996, to review status reports and plans and to enhance coordination of each agency's activities to prevent conflicts and overlapping activities and to maximize cooperation and sharing of resources.

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i. South Florida counties having local pollution control agencies should implement Supplemental Environmental Projects (SEPs) which can provide for reducing fines provided a company implements a SEP providing for pollution prevention/source reduction at their facility.

31. The FDEP, the U.S. Department of Commerce, and the EPA, in conjunction with the SFWMD, the Department of Agriculture and Consumer Services, the U.S. Department of Agriculture Natural Resource Conservation Service, local Soil and Water Conservation Districts, the Institute of Food and Agricultural Sciences, local governments, and other agencies should develop an enhanced urban and agricultural source pollution prevention and control program for the South Florida ecosystem.

Action Steps

- a. By January 1, 1996, the FDEP should review the EPA's interim policy statement on environmental auditing and voluntary disclosure and develop a policy to implement the EPA statement through a pilot program in South Florida. By December 1, 1997, the FDEP should evaluate the need for, and if necessary, propose additional legislative action that would provide voluntary disclosure that is compatible with the EPA approach.
- b. The FDEP should enhance efforts to provide educational materials and methods of distribution to local governments and other agencies describing the impacts of, and methods to prevent detrimental actions by property owners (e.g., changing oil, disposal of yard waste, use of pesticides) on the ecosystem.
- c. Encourage public/private cooperation in the development of Best Management Practices (BMPs) such as the successful program in Broward County between the Marine Industries Association of South Florida (MIASF) and the Broward County Department of Natural Resource Protection in the institution of BMPs in the marine industry. Also encourage volunteer clean up efforts such as the annual Broward Waterway Clean Up which is sponsored by the MIASF and removed more than 177,000 pounds of debris from the New River in 1994.
- d. By 1997, the FDEP, the SFWMD, the Department of Agriculture and Consumer Services, local Soil and Water Conservation Districts, and the Institute of Food and Agricultural Sciences should expand existing programs, such as the Farm-A-Syst Program, and develop new

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innovative agricultural Best Management Practices to help agricultural producers and rural residents reduce the release of pollutants to water bodies.

e. The FDEP, in conjunction with the SFWMD, should continue to assist local governments in establishing stormwater utilities and in developing and implementing watershed-based stormwater master plans.

f. The SFWMD should, as part of the Surface Water Improvement and Management Program Planning process and the process to establish minimum flows and levels, develop and adopt pollution reduction goals which will restore or maintain the beneficial use of all water bodies.

g. The FDEP, in conjunction with the SFWMD and DCA, should promote development of a stormwater quality level of service standard based upon pollution reduction goals as recommended in the "Report To Plan Oversight Committee Stormwater Level Of Service Conventions Committee" as developed by FDEP and the 5 water management districts in consultation with local governments and consultants. Beginning immediately, the FDEP and the water management districts should conduct workshops, seminars, and provide technical assistance and support to local governments in the development of a stormwater quality level of service standard.

h. The DCA and FDEP should work closely together to develop a methodology and effective mechanism to include stormwater quality level of service as a component of a stormwater management level of service standard in all local government comprehensive plans.

i. Encourage the Governor to initiate an annual "Governor's Award Program" which acknowledges successful public/private partnerships in the development and implementation of Best Management Practices and in pollution prevention and reduction programs.

j. Encourage the 1996 Legislature to establish a permanent funding source for the Surface Water Improvement and Management Program.

32. The FDEP and the SFWMD should have as a long range goal, to be achieved as soon as practicable, the enforcement of current water quality rules and standards while assessing whether existing water quality classifications and standards are accomplishing sustainability.

1 Action Steps
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- 3 a. The Legislature, by 1996, should ensure that the FDEP and
4 the SFWMD have sufficient resources, both staff and
5 finances, to fully implement the Everglades cleanup as
6 provided in state law.
7
- 8 b. Beginning immediately, the FDEP and the SFWMD should
9 promote innovative programs involving citizen participation,
10 such as the Lake Watch Program, for water quality
11 monitoring.
12
- 13 c. Beginning in 1996, the FDEP should comprehensively
14 evaluate specific water bodies, beginning with those water
15 bodies designated as Outstanding Florida Waters, using a
16 variety of methodologies and data, including data generated
17 by the Surface Water Ambient Monitoring Program and
18 other data stored in its central repository system. As a
19 result of this evaluation, the FDEP should establish
20 priorities and a schedule for action to improve protection of
21 these water bodies.
22
- 23 d. The FDEP and the SFWMD should review their existing
24 rules and enforcement procedures to look for potential
25 incentives for water quality improvements. Potential
26 incentives should include:
27
- 28 (1) incorporation of monitoring and the addition of new
29 Best Management Practices as developed into long-
30 term permits for new agricultural development
31 and/or existing agricultural activities which
32 demonstrate good land and water stewardship;
33 (2) utilizing a flexible permitting process which
34 incorporates consideration of unique individual
35 factors and continues the streamlining efforts to
36 maximize process efficiency; and
37 (3) Supplemental Environmental Projects should be used
38 as incentives in enforcement procedures. For
39 instance, penalties can be reduced provided the
40 company uses the money to implement a
41 Supplemental Environmental Project which provides
42 for pollution prevention/source reduction at its
43 facility.
44
- 45 e. The FDEP and the SFWMD should utilize current water
46 quality testing parameters and data in conjunction with
47 sediment analysis to determine areas receiving metal and
48 chemical pollution. Potential problem areas should be

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further analyzed using biological testing to permit evaluation of the effects of interactive, chronic low-level pollution. A regular schedule should be established to use this type of biological testing as part of the Surface Water Ambient Monitoring Program.

f. The FDEP should immediately amend Ch. 62-40, FAC, to implement the requirements of § 373.026(2) and (10), FS, which designated the FDEP as the central repository for scientific information and directed all local governments, water management districts, and state agencies to cooperate in supplying that information. The FDEP should make water quality information from the central repository accessible to all interested parties.

g. To reduce redundant work efforts and maximize the accessibility of existing and future information, the EPA and the South Florida Ecosystem Restoration Working Group should immediately insure that all scientific information gathered by federal agencies within the State of Florida is made available to FDEP for inclusion in the central repository.

h. Beginning in 1996, the FDEP should enhance its efforts to compile ambient water quality data for the year preceding the designation of an Outstanding Florida Water (OFW) for those OFWs for which such data has not been compiled. As a first priority, this effort should focus on the OFWs of the Florida Keys and Florida Bay to assure protection of the carrying capacity of the Florida Keys.

33. The FDEP, in conjunction with local air quality and transportation planning agencies, regional planning councils, and other appropriate agencies, should develop and implement strategies to limit, and where possible, reduce air pollutant emissions from stationary and mobile sources.

Action Steps

a. The Emissions Trading Study Commission created by the 1995 Legislature should continue, as charged, to draft recommendations for an air emissions trading program to allow industries to market or trade emissions by 1997 and provide for an overall environmental gain in doing so.

b. Beginning immediately, all governmental agencies should promote programs to limit or reduce the number of vehicle miles traveled by encouraging ride sharing, mass transportation, and telecommuting.

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c. The FDEP, working cooperatively with federal and other state agencies, should continue to support the Florida Atmospheric Mercury Study in 1996 and seek additional funding for research on the deposition and affect on water quality, of other heavy metals and nutrients, and on the effects of ozone on plant life.

d. Since energy conservation can be an important component of reducing emissions, government agencies should participate in programs addressing that issue such as the EPA's Greenlights and Energy Star Programs.

34. South Florida counties, in coordination with the FDEP, should improve the regulation of construction and demolition debris and enhance efforts to control illegal dumping.

Action Steps

a. The EPA should accelerate development of federal regulations or guidelines governing disposal of construction and demolition debris to require separation of materials, as appropriate; removal of household hazardous waste, mercury containing materials, and solvents; and implementation of ground water monitoring.

b. By December 1, 1995, the FDEP, in coordination with local governments, should develop proposed legislation, based upon federal regulations or guidelines, for disposal of construction and demolition debris which repeals the existing general permit and restriction on FDEP regulations and requires material separation, as appropriate, and recycling, ground water monitoring, and the use of liners when needed.

c. By 1997, local governments should enhance their efforts to control illegal dumping by actions such as increasing the number of litter control officers, increasing fines and penalties, and cooperating with the FDEP in carrying out action steps d. and e. below.

d. By July 1, 1996, the FDEP, in collaboration with local governments and professional solid waste associations, should prepare and distribute to all local law enforcement agencies educational material describing the problems caused by illegal dumping and providing details of § 403.413 FS, the Florida Litter Law, which was revised during the 1995 legislative session.

e. By July 1, 1996, the FDEP, in collaboration with local governments and the construction industry, should prepare and distribute to all local building departments educational material describing the problems caused by illegal dumping and providing

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details of § 403.413, FS, the Florida Litter Law. A document stamp to be used on all permits for building construction, which states "KNOW THE FLORIDA LITTER LAW - FLORIDA STATUTES § 403.413 - COMMERCIAL ILLEGAL DUMPING IS A 3RD DEGREE FELONY WHICH CAN BE PUNISHABLE BY IMPRISONMENT, FINES, FORFEITURE OF EQUIPMENT, AND CIVIL PENALTIES" should also be provided at no cost.

- f. The FDEP, in coordination with local governments, should develop and distribute educational material to the construction industry and local governments concerning the opportunities for construction and demolition debris recycling. The FDEP should also be directed to review local programs to determine if there are models suitable for emulation.
- g. Recycling of construction/demolition waste should be promoted and encouraged. As a potential to reduce dumping, mandatory recycling at construction sites should be investigated.
- h. Funding mechanisms for the development of construction /demolition recycled products should be investigated.

35. The FDEP, in conjunction with universities, local governments, and other agencies, should develop and implement an expanded public education and outreach program to promote the conservation and more efficient and effective use of all renewable and non-renewable resources. This should include outreach to businesses and industries as well as homeowners.

Action Step

- a. By December 1, 1996, and in conjunction with the State University System, the FDEP, the SFWMD, the Department of Agriculture and Consumer Services, local Soil and Water Conservation Districts, the Institute of Food and Agricultural Sciences, DCA, and local solid waste authorities should cooperatively develop and implement an expanded public education program which stresses each individual's responsibility for reducing waste, conserving energy, and maintaining vehicles to minimize air pollutant emissions.

36. The FDEP, the SFWMD, DCA, other state agencies, and local governments should cooperatively ensure that the environmental protection and pollution prevention infrastructure needs of South Florida are met and that human health and safety is protected.

1 Action Steps

- 2
- 3 a. The FDEP should immediately implement recent wastewater rule
- 4 revisions which require "Operation and Maintenance Performance
- 5 Reports" and "Capacity Analysis Reports" for sewage treatment
- 6 systems. A moratorium on additional hookups should be placed on
- 7 all utilities which have not provided for adequate capacity to
- 8 service additional development.
- 9
- 10 b. The FDEP should immediately revise its drinking water rules to
- 11 provide similar protection and advanced planning for those facilities
- 12 as required in action step a.
- 13
- 14 c. The Commission recommends that the Governor, by March 1,
- 15 1996, propose legislative language to authorize the Department of
- 16 Business and Professional Regulation to license sewage sludge
- 17 haulers. Immediately following the effective date of the legislation,
- 18 the Department of Business and Professional Regulation, in
- 19 consultation with the FDEP, should develop rules to establish a
- 20 licensing procedure for sludge haulers which will allow the
- 21 coordination of sludge treatment, storage, transport, and disposal
- 22 with responsibility established for each segment of the process.
- 23
- 24 d. The FDEP, the SFWMD, and DCA should encourage and assist
- 25 local governments in establishing wellfield protection for all public
- 26 drinking water wells. Protection of the drinking water resources to
- 27 protect the health of those residents in areas which must rely solely
- 28 on private drinking water wells should also be considered.
- 29
- 30 e. During the Evaluation and Appraisal Report process, the FDEP, the
- 31 Department of Health and Rehabilitative Services - County Public
- 32 Health Units, and DCA should assist local governments in
- 33 identifying unsewered developed areas and areas that should be
- 34 considered priorities for abandoning septic tanks and providing
- 35 alternative wastewater treatment facilities. As a first priority, this
- 36 process should focus on those areas adjacent to the Outstanding
- 37 Florida Waters of the Florida Keys and Florida Bay.
- 38
- 39 f. By December 1, 1996, the FDEP, in coordination with local
- 40 governments, should develop proposed legislation for adoption by
- 41 the next Legislature to establish a permanent "amnesty days"
- 42 program with a permanent funding source to provide for the regular
- 43 collection of household hazardous waste. Participation in amnesty
- 44 days programs should be available to small quantity generators
- 45 provided they pay the costs of disposal of their wastes.
- 46
- 47 g. Local governments should be encouraged to develop and maintain
- 48 local environmental protection programs. If a local government

1 wishes to receive or has received delegation of an environmental
2 permitting, compliance, and enforcement program from the FDEP,
3 the FDEP should immediately ensure that the agency granted
4 delegation has the powers to carry out those responsibilities in
5 actions involving other local governmental agencies and
6 departments within the area of delegation. The FDEP should assist
7 local governments in developing programs which meet this
8 requirement. In those instances where delegated local governments
9 are precluded from enforcement actions against another local
10 agency or department, the FDEP should monitor or enforce as
11 needed and retain lead agency status where appropriate in pursuing
12 enforcement.

- 13
- 14 h. The SFWMD and local governments should continue to improve
15 stormwater management practices with a focus on improving the
16 quality and quantity of stormwater discharges through the use of
17 Best Management Practices and by retrofitting urban or municipal
18 stormwater systems that are discharging without pretreatment.
 - 19
 - 20 i. Local governments should identify areas which have failing septic
21 tank systems in service areas which differ from the political
22 jurisdiction. Local government agreements should be entered into
23 to resolve these problems.

24

25 37. The current critical water quality problem in the Florida Keys, as affected
26 by the discharge of inadequately treated sewage from septic tanks, package
27 plants, and stormwater runoff requires immediate attention. The
28 Commission believes that local, state, and federal financial assistance must
29 be provided immediately to correct this situation.

30

31 Action steps

- 32
- 33 a. By January 1, 1998, the FDEP and the Department of Health and
34 Rehabilitative Services, working in conjunction with the Florida
35 Keys National Marine Sanctuary's Water Quality Committee,
36 should implement special permitting standards for all types of
37 wastewater treatment systems so that all new systems discharge no
38 nutrients in the marine environment.
 - 39
 - 40 b. The Commission recommends that the Governor, by March 1,
41 1997, propose legislative language to create a Sewage Treatment
42 Improvement Trust Fund to bring existing treatment systems up to
43 the standard created for new systems. The emphasis should be
44 placed on eliminating illegal systems such as cesspits and
45 malfunctioning septic tanks. The fund should be managed to
46 provide grants, no interest loans, matching funds, or any
47 combination of these to assist individual property owners in
48 meeting these requirements.

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- c. The Commission fully endorses, and will support efforts before the Florida Legislature and the United States Congress, designating U.S. Highway 1 as a toll road. The Commission supports the use of such toll funds for the acquisition of lands within the Keys to implement the Monroe County Comprehensive Plan and Dwelling Unit Allocation Ordinance and such other uses that are consistent with the implementation of the Water Quality Protection Program of the Florida Keys National Marine Sanctuary.

- d. In the event the U.S. Highway 1 is designated a toll road in Monroe County to assist it in meeting growth management needs, none of these funds should be used to expand sewage treatment capacity such that additional growth and development directly results.

1 **C. COMBAT THE SPREAD OF EXOTIC SPECIES**
2

3 One of the most severe environmental problems facing our nation's natural areas
4 is the explosive invasion of exotic pest plants and animals. These are organisms
5 that invade and rapidly spread in natural areas with harmful consequences. During
6 1993, 456 million exotic plants were imported into the United States; about 80%
7 entered through the Port of Miami (Center, et al., 1994). Some of these plants are
8 potential invaders and they can harbor, along with other cargo and the ships that
9 transport them, other invaders, including diseases, insects, and other animal life.
10 Some exotics cannot survive in the new environment, while others continue to
11 exist only with human help. Additional exotic species escape and survive in
12 natural and distressed areas.

13
14 Florida is particularly vulnerable to exotic invasion because of its subtropical
15 climate, the disturbance of large parts of its landscape, and its geographic form.
16 There are currently more than 1,300 exotic plants in the state, making Florida one
17 of the states with the most severe exotic pest plant problem in the country (U.S.
18 Congress, 1993). Approximately 1.5 million acres have been invaded by exotic
19 pest plants in Florida. About 45% of the invading plants were originally imported
20 for ornamental landscape use and many are still commercially available.

21
22 Many of these invasive species spread rapidly and form dense populations,
23 primarily by out-competing native species due to a lack of natural controls. The
24 competitive advantage held by these exotics is usually the result of their location
25 in hospitable environments where the normal natural controls of disease and
26 natural enemies are missing. As exotic species expand, they can disrupt the
27 ecosystem. A few of the worst invaders and the extent of their infestation are:
28 Brazilian pepper (703,504 acres), melaleuca (488,824 acres), Australian pine
29 (373,723 acres), hydrilla (75,500 acres) and the climbing fern (25,781 acres)
30 (Schmitz, 1994).

31
32 Few methods exist to effectively combat the advance of these pest plants.
33 Chemical herbicides are most effective during the initial stage of invasion, when
34 the area affected is small and centralized and eradication is possible. Chemical
35 and mechanical methods lose effectiveness as the affected area expands. This loss
36 of effectiveness results from loss of direct access to affected areas and seed
37 sources, concern for environmental impacts of the control methods, and from the
38 high costs of chemicals and implementation. After an invasive specie spreads,
39 additional measures must be employed if control is to be accomplished.
40 Biological control or biocontrol, which involves the use of host-specific natural
41 enemies from the exotic pest's native area, can reduce the invaders' competitive
42 advantage.

43
44 According to the National Academy of Science, "Biological control can and
45 should become the primary method used in the United States The need for
46 alternatives to complement or replace chemical control dictates placing an
47 increasing emphasis on biological control research and development" (NAS, 1987).
48 However, there is little initiative for private commercial efforts to develop

1 biocontrol agents; profit cannot be obtained from an agent that does not recognize
2 property boundaries and reproduces without license. If biological controls are to
3 be developed, a steady, reliable, and adequate source of public funding is
4 necessary. Until a biological control system is developed, every available control
5 method must be used. To reduce impacts to unaffected adjacent land, expeditious
6 removal of existing exotic pest plants should be encouraged. Incentives could be
7 effective in this effort.

8
9 The use of melaleuca as a landscape mulch could lead to large-scale commercial
10 harvesting of this pest. Although excellent for this purpose, melaleuca mulch has
11 not been able to compete with cypress mulch, which is often obtained by
12 consumers at below production costs and has been promoted as a superior mulch
13 product. Large quantities of environmentally valuable native cypress trees are
14 being cut and processed into landscape mulch. This mulch is often dumped on
15 the market at or below production costs as a "price leader" to attract customers to
16 garden centers. Although usually given permission to harvest melaleuca at no
17 cost, firms which produce melaleuca mulch cannot compete with the below cost
18 prices usually charged for cypress mulch.

19
20 Existing regulatory programs do not assist in combating the spread of exotic plant
21 species. Current mitigation requirements, which reduce mitigation ratios on
22 property with wetlands infested with exotic pest plants, discourage property
23 owners from removing these plants. Such regulations may actually increase the
24 value of infested property by reducing the potential mitigation cost of future
25 development. Property owners who allow exotic pest plants to continue to exist
26 on their land not only reduce the environmental value of wetlands and uplands but
27 also contribute to the spread of these pests to adjoining public and private land.

28
29 The problem of invasive exotic pests is large and growing. A multi-pronged
30 strategy is needed to control the situation. Introduction of new pests must be
31 regulated and the continued sale of those already here should be stopped. Once
32 a new pest is identified, quick action to eradicate the invasion must be taken.
33 More effective weapons to control existing pests, especially biocontrol, must be
34 developed. An adequate permanent source of funding is critical to this process.

35 36 COMMISSION OBJECTIVE

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41 | <ul style="list-style-type: none">• Limit the spread and reduce the existing population of invasive non-indigenous species. |
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42 Recommendations:

- 43
44 39. The FDEP should expand the list of prohibited invasive non-native plants
45 in Ch. 62C-52.011, FAC, to include additional species which have been
46 identified in Florida.
47

1 Action Steps

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3 a. Beginning in 1996 and continuing each year, the FDEP, the
4 Department of Agriculture and Consumer Services, the Florida
5 Game and Fresh Water Fish Commission, and the South Florida
6 Ecosystem Restoration Working Group should meet with the Exotic
7 Pest Plant Council, immediately following the Exotic Pest Plant
8 Council Annual Symposium to discuss the need to update the
9 current list of Category I most invasive exotic plant species.
10 During this meeting, the plants on the updated list shall be ranked
11 in order of threat to the environment, and plants selected shall be
12 added to the FDEP's rule 62C-52.011.

13
14 b. Following the above referenced meeting, and no later than
15 December 1, 1996, the FDEP should revise its rule 62C-52.011 to
16 include the agreed upon plants from the updated and ranked Exotic
17 Pest Plant Council's current list of Category I most invasive exotic
18 plant species. Following each subsequent meeting, the FDEP's rule
19 should be revised, as necessary, to ensure that all agreed upon
20 invasive exotic plant species are added.

21
22 40. The Legislature should provide additional funding for development,
23 approval, and implementation of control programs for invasive exotic plant
24 species (e.g., Brazilian pepper and melaleuca) and wild exotic animal
25 species (e.g., the toxic giant toad and the Mexican bromeliad weevil) to
26 ensure that adequate long term funding is available to implement exotic
27 control, prevention, and eradication measures including the development
28 of biological control agents and other methods.

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30 Action Steps

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32 a. To ensure adequate funding for control of invasive exotic pest
33 plants, the Legislature should, in 1996, establish the Exotic Pest
34 Plant Eradication Trust Fund. The highest priority for use of funds
35 from the trust fund shall be to insure the adequate funding of
36 biological control research projects for Category I most invasive
37 exotic plant species. The FDEP should manage the trust fund with
38 decisions on spending priorities made by a council composed of the
39 FDEP, the Florida Game and Fresh Water Fish Commission, the
40 South Florida Ecosystem Restoration Working Group, and the
41 Exotic Pest Plant Council. A "Florida Native Plants" automobile
42 license tag should be authorized with profits from the sale of the
43 tag placed in this trust fund. Mechanisms for voluntary citizen
44 contributions to the trust fund, such as an opportunity to donate an
45 additional dollar while obtaining a Florida Drivers License and an
46 opportunity for direct contributions by individuals and groups,
47 should be established.

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- b. In 1996, the Legislature should impose a per bag tax (\$0.50) on the sale of cypress mulch to encourage distant retail headquarters to emphasize the use of melaleuca and other mulches and reduce the destruction of cypress for mulch. Money collected should be placed in the newly created Exotic Pest Plant Eradication Trust Fund. The Commission and appropriate agencies should continue investigating and implementing alternative means, such as education, to reduce the destruction of cypress for mulch.
 - c. The FDEP should ensure, through the regulation of invasive exotic plants, that preparation of exotic mulches results in the destruction of viable seeds.
 - d. The Florida Department of Transportation (FDOT) should continue to emphasize removal of invasive exotic plants from its road rights of way during routine right of way maintenance operations.
 - e. The Florida Game and Fresh Water Fish Commission should seek an adequate funding source from the 1996 Legislature to provide sufficient wildlife inspectors to carry out its mandate to protect Florida's environment from potentially invasive non-indigenous animal species.
 - f. The FDEP, the Florida Game and Fresh Water Fish Commission, the SFWMD, and appropriate federal agencies should immediately begin a survey of the lands they manage to determine the existing nature and extent of the invasive non-indigenous animal population problem on those lands. A report detailing the results of those surveys, proposed corrective measures, and additional resources needed to address the problem should be provided to the Commission by July 1, 1997.
 - g. The FDEP, the Department of Agriculture and Consumer Services, the Florida Game and Fresh Water Fish Commission, the SFWMD, the South Florida Ecosystem Restoration Working Group, and other interested groups should immediately form an "Exotic Animal Pest Council" to serve as a clearing house for existing information and future research, to coordinate and develop information and action steps to protect Florida's natural resources from the invasion of exotic animals, and to facilitate the development of federal initiatives which fully consider the serious nature and the extent of the problem in Florida.
41. The FDEP should strengthen and expand its education program to increase public awareness of the threat that invasive non-indigenous exotic species pose to the health and sustainability of the South Florida ecosystem.

1 Action Steps

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3 a. The FDEP should seek, from the 1996 Legislature, funding
4 specifically dedicated to increasing public awareness of invasive
5 non-indigenous exotic species.

6
7 b. To ensure maximization of resources provided, the FDEP should
8 immediately begin to seek partners in the private and public
9 sectors, such as the Florida Native Plant Society, the Florida Exotic
10 Pest Plant Council, the Institute of Food and Agricultural Sciences,
11 and the university system for the production of materials for such
12 education.

13
14 42. The FDEP, the FDOT, the Department of Agriculture and Consumer
15 Services, and the Cooperative Extension Service should provide incentives
16 which encourage removal or replacement of invasive exotic plants.

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18 Action Steps

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20 a. Beginning in 1996, the Commission, the FDEP, the FDOT, the
21 SFWMD, and local governments should co-sponsor clean up days
22 throughout the region to remove invasive exotic plants from public
23 and private lands. Volunteerism by groups such as youth,
24 conservation, civic, and service organizations should be
25 encouraged. Private sector support for clean up day events should
26 be solicited.

27
28 b. The Commission recommends that the Governor, by December 1,
29 1995, propose legislative language to provide blanket immunity for
30 property owners from damage suits resulting from volunteer groups
31 and individuals participating in exotic plant clean up days on public
32 and private lands.

33
34 c. The Commission recommends that the Governor, by December 1,
35 1995, propose legislative language to encourage removal of
36 invasive exotic pest plants from private undeveloped lands. The
37 language should also encourage conservation of native plant
38 communities to form greenbelts outside of developed areas by
39 authorizing tax incentives. Tax incentives should be provided for
40 those property owners who remove invasive exotics and create or
41 maintain their undeveloped lands in healthy native habitat.
42 Establishment of local government programs which accomplish
43 this goal, such as the successful Dade County program, should be
44 strongly encouraged.

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46 43. Local governments should amend their land development regulations to
47 prohibit planting invasive exotic plants and facilitate the process of
48 eradicating invasive exotics as land is developed.

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Action Steps

- a. Within one year of revisions to local government comprehensive plans pursuant to Evaluation and Appraisal Reports, local governments should revise their land development regulations to prohibit use of Category I invasive exotic plants in all landscaping and require that all public buildings or publicly-funded buildings be landscaped primarily using a non-invasive xeriscape design, which includes at least 50% native vegetation.
 - b. As part of the revisions to local land development regulations, local governments should require that all invasive exotic plant species be removed as a condition of development approvals.
44. The Legislature, the FDEP, the SFWMD, and other appropriate state, federal, regional, and local agencies should enact mitigation requirements which encourage the expeditious removal of melaleuca and other exotic pest plants from private property. Mitigation required for impacts to wetlands infested with melaleuca and other invasive exotic pest plants should be commensurate with the remaining value of the wetland, but mitigation should not be reduced to such an extent that a disincentive for the removal of invasive exotic plant species from private lands is created.

Action Step

- a. The FDEP, the SFWMD, and other appropriate state, federal, regional, and local agencies who regulate wetlands should:
 - (1) immediately work together to ensure development of consistent mitigation requirements for wetlands infested with melaleuca and other invasive exotic pest plants that are commensurate with the remaining value of the wetlands but that are not reduced to such an extent that a disincentive for the removal of invasive exotic plant species from private lands is created.
 - (2) provide for a credit for mitigation or other incentives where the removal of invasive exotic plants results in a passive future land use that maintains the wetlands, nature and functions of the area, such as the lake belt plan, mitigation bank, buffer area or other uses which deters active uses, provides environmental benefit and reduces the spread of invasive exotic plants.

1
2 **D. TRANSFORM URBAN SPRAWL INTO QUALITY DEVELOPMENT**
3 **PATTERNS**
4

5 Rapid population growth and sprawling development patterns are leading South
6 Florida down a path toward wall-to-wall suburbanization. The proliferation of
7 urban sprawl--a development pattern characterized by scattered, decentralized, low
8 density development that is not functionally related to adjacent land uses--is
9 swallowing up undeveloped areas in the region at an alarming rate. This results
10 in the depletion of natural and other environmental resources and severely
11 threatens the future viability of the Everglades ecosystem. The growth patterns
12 of South Florida encourage automobile reliance which exacerbates the lack of
13 coordination between land use decisions and siting of transportation facilities and
14 other infrastructure. Related consequences include competition for scarce water
15 resources, pollution from stormwater runoff, inefficient urban design, and rapid
16 conversion of agricultural lands and other open spaces to urban uses.

17
18 Without significant reforms, South Florida will continue to grow at the expense
19 of its environment and economy. Sustainability will not be achieved unless the
20 region's burgeoning population is accommodated within designated urban
21 development boundaries. A commitment must be made to fund the development
22 of infrastructure and services needed to support growth within these areas.
23 Furthermore, financial and regulatory incentives must encourage local governments
24 and developers to create sustainable communities within these boundaries through
25 the promotion of infill and redevelopment with strong attention to good urban
26 design. Communities employing efficient use of space and natural resources
27 should also be encouraged.

28
29 It must be recognized, however, that South Florida has not developed in a
30 homogeneous fashion. The interior of South Florida is characterized by rural
31 agricultural communities. Hendry and Okeechobee counties, for instance, vie for
32 a sustainable agricultural industry. They strive for economic diversity and growth,
33 but not at the expense of their rural character. The Upper Kissimmee Basin,
34 including Orlando and Disney World, is developing rapidly, especially in the outer
35 urban fringes on former citrus lands. A significant amount of growth is projected
36 for Florida's southwestern coast, though at lower densities than are projected for
37 the eastern seaboard. Although development patterns between the two subregions
38 differ, southwest Florida will soon be contending with many of the same problems
39 that southeast Florida is currently facing. The challenge is to preserve the
40 southwest region's traditional, cohesive communities by linking good urban form
41 with economic success and protection of the region's coastal areas and inland
42 natural areas. On the other hand, the challenge in the highly developed southeast
43 coast is to transform existing sprawling development patterns into more efficient,
44 liveable ones.

45
46 Given the above differences, individual community identity must be fostered to
47 promote a sense of place and improve the region's urban and rural quality of life.
48 Preservation of open spaces, including parks, natural areas, and farmlands, is also

1 necessary to assure adequate storage for water supplies, future recreational
2 opportunities, and continued agricultural productivity.
3

4 In conclusion, the 4 pillars for improving South Florida's urban form are:
5 establishing urban development boundaries; ensuring travel choices, mobility, and
6 access through public transit; achieving infill development and redevelopment; and
7 increasing use of good urban design. The first pillar, the establishment of urban
8 development boundaries, will minimize sprawling and decentralized urban
9 development patterns. It will also ensure that lands are retained for non-urban uses
10 such as agriculture, recreation, preservation, and water storage. In addition, urban
11 development boundaries will spur moderately higher densities, which are key to
12 achieving more efficient, liveable communities when located appropriately. The
13 second pillar, an extensive and accessible public transit system, will provide
14 alternatives to the single occupant vehicle. This is essential to support higher
15 densities. The third pillar, designation of urban development boundaries and the
16 provision of adequate public transportation, will open the door to infill
17 development and redevelopment. Through the use of incentives, urban areas can
18 be revitalized, compact development promoted, and sprawl curtailed. The
19 resulting compact growth patterns are also more cost-efficient in the delivery of
20 infrastructure and services. The fourth pillar, increased use of good urban design
21 principles, will save water and energy, increase the beauty of communities, and
22 help build more efficient, livable, and pedestrian friendly places.
23

24 COMMISSION OBJECTIVES 25

- 26 • **Establish urban development boundaries and recommend**
27 **management and regulatory measures to achieve needed protection**
28 **and restoration of the ecosystem and sustainable development**
29 **within those boundaries.**
- 30 • **Promote infill development and redevelopment and reward**
31 **developers that choose to build in the "right" place.**
- 32 • **Manage the transportation system to support sustainable**
33 **development and curtail urban sprawl.**
- 34 • **Use urban design principles to foster individual community identity,**
35 **create a sense of place, promote pedestrian oriented neighborhoods**
36 **and town centers, encourage the use of public transportation, and**
37 **increase urban quality of life.**
- 38 • **Acquire, provide, protect, and maintain appropriate public access**
39 **to open space outside of designated urban development boundaries**
40 **to provide for water storage, agriculture, natural systems, and parks.**

1 **D-1. ESTABLISH URBAN DEVELOPMENT BOUNDARIES**

2
3 South Florida has reached a crossroads. On one hand, it can continue to sprawl--
4 steadily increasing automobile miles traveled, consuming natural resources, and
5 choking the Everglades. On the other, it can transform its growth patterns, over
6 time, in a way that preserves the natural system, provides travel choices, and
7 enhances quality of life--in short, move toward a more sustainable South Florida.
8 The recommendations in this chapter are offered in support of the latter.

9
10 The region's sprawling, auto-dependent development patterns have created
11 intolerable costs. The costs of sprawl have been well documented over the past
12 two decades. These include:

- 13
14 • the cost of building and maintaining highways and other major
15 infrastructure improvements to serve distant suburbs;
16 • the cost of solving environmental problems, such as loss of
17 wetlands and endangered species habitat and air and water
18 pollution, caused by development of natural areas along the urban
19 fringe;
20 • the cost of automobiles and time lost commuting to work and other
21 destinations due to increased automobile trips, miles traveled, and
22 congestion;
23 • abandoned investments in older communities which become
24 economically uncompetitive;
25 • loss of jobs and access to jobs;
26 • economic segregation and loss of social stability; and
27 • a permanent loss of agricultural land and economic decline in farm
28 communities (Bank of America, 1995: pp. 5-7).

29
30 The challenge facing South Florida is to promote more compact and cost-efficient
31 growth patterns while continuing to accommodate growth. Evidence exists which
32 shows that more compact development patterns are cost-effective. Recently, the
33 State of New Jersey prepared an Interim Development and Redevelopment Plan
34 (New Jersey, 1992) that called for directing growth into more compact
35 development patterns. As part of this effort, the New Jersey Legislature required
36 that an impact assessment be conducted to evaluate the cost-effectiveness of the
37 state's plan. The analysis demonstrated that if sprawling development patterns
38 continued, New Jersey would be \$16 billion in debt by the year 2010. However,
39 under the newly proposed development patterns, the state anticipated capital
40 infrastructure savings between 1990 and 2010 of approximately \$1.3 billion.
41 Furthermore, an additional \$400 million per year would be saved in operating
42 costs for municipalities and school districts statewide.

43
44 Other studies document cost-savings associated with more compact development
45 patterns. A study of density-related public costs in Loudoun County, Virginia
46 found that net public revenue shortfalls occurred from new residential development
47 for all densities tested--from 1 unit per acre to 4.5 units per acre. Net public costs
48 per new dwelling unit were estimated to be approximately 3 times higher for the

1 lowest density tested than for the highest. The study also compared public costs
2 in urban and non-urban areas. It determined that for every dollar in tax revenues
3 received by the county, \$1.28 in services was demanded by residential land uses,
4 whereas only \$0.11 in services was demanded by open farmland (American
5 Farmlands Trust, 1985).

6
7 Sprawl patterns also create much higher per unit costs. A 1989 review of 9 major
8 studies of the cost of alternative developments patterns published since 1955
9 concluded in part:

10
11 . . . the large items requiring outlay of capital associated with
12 residential building are the costs of streets, sewers, water systems,
13 storm drainage, and schools. This summary focuses on the costs
14 for these systems As was the case throughout this study, the
15 capital costs for the erection of the dwelling structure and those for
16 the purchase of raw land were not examined

17
18 When all capital costs are totaled (neighborhood plus community)
19 for streets, sewers, water, storm drainage, and schools, the total
20 cost for low-density (3 dwelling units per acre) sprawl
21 (noncontiguous growth) is slightly more than \$35,000 per dwelling
22 unit (for central sewerage and water, full curb and gutter, and urban
23 drainage). Further, if that development is located 10 miles from
24 the sewage treatment plant, the central water source, the receiving
25 body of water, and the major concentration of employment, almost
26 \$15,000 per dwelling unit is added to the cost, for a total of
27 \$48,000 per dwelling, excluding housing and land costs. In the
28 most extravagant circumstance, that of estate zoning at 1 dwelling
29 unit per 4 acres with full improvement standards and located 10
30 miles from all central services, the total cost surpasses \$92,000 per
31 dwelling unit.

32
33 Costs of infrastructure can be reduced to about \$24,000 (the total
34 cost of streets, utilities, schools, and leapfrog costs for 12 dwelling
35 units per acre . . .) by locating developments close to central
36 facilities and employment centers, thereby not inducing any
37 distance-related costs, and by including multifamily housing types
38 (garden apartments, townhouses, high-rise apartments) in equal
39 proportion to single-family conventional and single-family cluster
40 units. Further reduction to about \$23,000 (the total cost of streets,
41 utilities, schools, and contiguous costs for 12 dwelling units per
42 acre . . .) is possible by planning a mixture of housing types
43 instead of allowing sprawl, by building in locations contiguous to
44 existing development and avoiding costly facilities to span the
45 bypassed vacant land. Finally, the cost can be reduced to less than
46 \$18,000 (the total cost of streets, utilities, schools, and contiguous
47 costs for weighted average of high-rise apartments, garden
48 apartments, townhouses, and single-family clusters . . .) by

1 choosing a central location, using a mix of housing types in which
2 single-family units and townhouses constitute 30% of the total and
3 apartments 70%, and by planning contiguous development instead
4 of leapfrogging (Frank, 1989: p. 39).
5

6 Urban sprawl is clearly a financial issue, above and beyond its effects on lifestyle,
7 the environment, and other concerns. Thus, South Florida's growth should be
8 managed in a way that will assure the cost-efficient provision of public services
9 by promoting compact urban development patterns. The use of urban development
10 boundaries to manage the timing, location, and extent of development is one tool
11 for accomplishing this end. More specifically, the available supply of developable
12 land can be managed by directing non-rural development to areas designated for
13 growth. The establishment of urban development boundaries can assist efforts to:

- 14
- 15 • promote mixed-use development;
- 16 • enhance the ability of government to fund new and expanded
17 infrastructure;
- 18 • stimulate infill development and redevelopment;
- 19 • encourage more compact urban development and moderately higher
20 urban densities;
- 21 • increase the variety of housing and improve housing affordability;
22 and
- 23 • prioritize and streamline permitting processes to encourage desired
24 types of development.
25

26 Currently, few local governments in South Florida are discouraging the
27 proliferation of urban sprawl, although some, notably Dade and Martin Counties,
28 have established urban development boundaries. During the 1960s and 1970s, the
29 growth philosophy of the urbanizing areas along the lower eastern coast of the
30 region was to accommodate growth by pushing development west toward the
31 Everglades. As a result, the rural areas in the western extremes of Broward
32 County, and to a lesser extent Dade County, gave way to sprawling, auto-
33 dependent, suburban residential development. During this growth period, the once
34 significant rural population virtually disappeared and the region's character became
35 distinctly urban. By 1980, the areas east of the Everglades dike in Broward and
36 Dade Counties had become 99% urban (SFRPC, 1995a).
37

38 The counties along the upper southeastern coast, including Palm Beach County,
39 experienced similar urban growth. Between 1973 and 1980, the population in the
40 area increased by 217,639 or 38.2%, while urban land uses increased by 141,508
41 acres, or 65.2%. This indicates that urban land uses expanded at nearly twice the
42 rate of population growth for that time period. In 1980, this same area of the
43 region averaged 2.2 persons per urban acre. If this figure was to remain constant,
44 the region would need approximately 337,680 acres of new urban area by the year
45 2000 (TCRPC, 1987).
46

47 By the 1980s, counties along the lower and upper east coast of South Florida
48 began to recognize the need to control growth. By the 1990s, however, local

1 governments were actively amending their comprehensive plans to permit
2 additional growth and development. For example, while Broward County made
3 an effort to reduce densities along the urban fringe and in agricultural areas during
4 the 1980s, by the end of the decade, the county was processing approximately 50
5 comprehensive plan amendments per year, most of which were located west of the
6 Turnpike and out to the eastern edge of the Everglades. In fact, development in
7 Broward County has spread so far west that the current pattern seriously
8 complicates the county's ability to designate an urban growth boundary.
9

10 By contrast, Dade County officially delineated an urban growth boundary line in
11 its local government comprehensive plan in 1983. According to Dade County
12 planners, anticipated residential development through 2010 can be accommodated
13 within this perimeter, but only if every parcel of property is built out or if current
14 density trends increase. Some modest boundary adjustments and somewhat more
15 dense development patterns may be necessary in order to avoid rising land and
16 housing costs within the urban development boundary.
17

18 By 1980, Palm Beach County officials began to recognize that moving west to
19 accommodate growth was not the future development pattern they had envisioned.
20 By the end of that decade, the county placed a moratorium on its agricultural
21 reserve area and established an urban service line. An urban service line encircles
22 an area in which a full range of urban services either exist or are planned for
23 within a defined planning horizon. Although the urban service line was perceived
24 to be the same as an urban growth boundary, the county's comprehensive plan did
25 not treat it as such. The plan allowed development to locate west of the line as
26 long as wells and septic tanks were provided. Because of this, the county is now
27 having to meet demands for other urban services from residents of those western
28 areas.
29

30 Urban development in southwest Florida has also increased dramatically during
31 the past 2 decades. From 1975 to 1993, urban land uses grew from 410,237 acres
32 to 790,134 acres, an increase of 379,897 acres or 92.6% (SWFRPC, 1995e).
33 These uses make up approximately 21% of the land area in the southwest region,
34 whereas agriculture comprises approximately 43% (SWFRPC, 1995e). Urban
35 growth areas in southwest Florida are found primarily along the coastal regions
36 of Charlotte and Collier Counties, and throughout most of Lee County. The
37 greatest part of these future growth areas are platted land subdivisions, with an
38 estimated 700,000 buildable residential lots held by absentee owners. Every year,
39 tax certificates for tens of thousands of these lots are sold due to non-payment of
40 taxes. However, at the same time, hundreds of thousands of property owners pay
41 taxes on their lots, which indicates a continued commitment to the area.
42 (SWFRPC, 1995e).
43

44 Growth problems and challenges facing this region were brought to the
45 Commission's attention directly during presentations given by representatives of
46 local county governments. For instance, Collier County is currently conducting
47 a build-out study to determine if the county has the ability to provide
48 infrastructure to support the maximum projected growth under its existing

1 comprehensive plan. Once the study is complete, the county will determine
2 whether it wants to continue to develop under the current comprehensive plan.
3 It will also decide whether there is enough vacant land to support the necessary
4 infrastructure, and whether the county can afford to provide it. The county is also
5 completing an application for designation as an Enterprise Community to revitalize
6 its downtown areas and encourage the relocation of new businesses to the region.
7 Although an urban growth boundary has been established, land within the
8 boundary is developing at a relatively low density. Unfortunately, development
9 outside the boundary, designated at 1 dwelling unit per 5 acres, is prohibited from
10 clustering.

11
12 While most of Collier County's coastline has experienced moderate to high levels
13 of development, Lee County has taken great strides to protect its coastal
14 environment. Its current growth pattern of low-density, sprawling development
15 is expected to continue eastward to Hendry County. The predominant land use
16 in Hendry County is agriculture. While Hendry County shares a strong desire to
17 diversify and grow economically with its 2 rural municipalities, Clewiston and
18 LaBelle, it is not willing to compromise its rural character.

19
20 In Glades County, only 1% of the land area is utilized for urban land uses. Nearly
21 two-thirds of the county's land area is owned by one agricultural company
22 (SFWM, 1995b). Urban development is so limited in the county, that there are
23 few growth issues at present. However, the county is taking advantage of
24 opportunities such as the FDOT widening of U.S. 27 in downtown Moorehaven
25 to produce a redevelopment plan and designate an historic district for the area.

26
27 Agriculture also dominates much of the Kissimmee basin. In Highlands County,
28 agriculture and rangeland account for 68% of the existing land use (SFWM,
29 1995b). In Okeechobee County, 93% of the total land area (466,182 of 499,200
30 acres) is utilized for agriculture (Okeechobee County, 1992).

31
32 Although the northern central area of the region is primarily characterized by rural
33 development and agricultural uses, significant urbanization is found in the northern
34 portions of southern Orange and northern Osceola Counties. The economic
35 spinoff from the Disney leisure and entertainment complex is the primary impetus
36 for urban population growth in that area.

37
38 Orange County's existing land use pattern was shaped by the urban service line
39 established by the county in 1980. That portion of the urban service area which
40 lies within the boundaries of the SFWM includes Orlando International Airport
41 and the Disney facilities. Segregation of residential, industrial, and commercial
42 development, within parts of the urban service area, has resulted in inefficient land
43 use patterns which inhibit pedestrian movement and create automobile dependency
44 and traffic congestion. Breaking this cycle has become a major planning issue in
45 Orange County for the 1990s (Orange County, 1991).

1 Osceola County is predominantly rural in character. Currently, 701,833 of the
2 county's 906,157 acres, or 77.5%, are in agriculture (Osceola County, 1990).
3 However, it has experienced intense growth over the past 2 decades. Population
4 jumped from 49,287 in 1980 to 104,514 in 1990, and is expected to reach 188,370
5 by the year 2010 (BEBR, 1990; and the SFWMD, 1995a). This represents an
6 increase of 282% from 1980 to 2010. Several factors, however, are expected to
7 influence future urban patterns in Osceola County. The first is the 27,000 acres
8 of platted lots that are in scattered ownership, ranging from 1/8 to 5 acres in size.
9 The second is the fact that the size of development parcels will be determined, to
10 some extent, by the current size of agricultural holdings. At present, 18 ranches
11 within the county are at least 900 acres in size or greater. This suggests the
12 possibility of future large scale development where builders can take a lead role
13 in providing necessary facilities and services (Osceola County, 1990). The third
14 and final factor is the established urban service line in the northwest part of the
15 county. Urbanization in the county is relatively new and agriculture is expected
16 to continue to be the dominant land use.

17
18 The Commission hopes to reinforce progress where it is being made and spur
19 change in areas where chances still exist for bringing about compact development
20 patterns, such as in much of the upper east, west, central, and northern parts of
21 South Florida. Paramount to this hope is the designation of urban development
22 boundaries. At present, few local governments have adopted effective urban
23 growth boundaries that manage and limit development based upon considerations
24 of ecosystem management, urban water supply, flood control, and agricultural
25 sustainability. Local land use decisions typically precede most other
26 environmental permitting considerations and have the greatest single potential, if
27 unrestrained, to cumulatively conflict with the above considerations. Local
28 governments within the South Florida ecosystem should specifically identify the
29 areas needed for these purposes and develop in their local government
30 comprehensive plans mechanisms, such as strict urban growth boundaries, to
31 ensure their continued protection. Urban development boundaries can also ensure
32 that land is available to accommodate needed public facilities which are
33 incompatible with residential development, such as airports, landfills, and prisons.
34 Finally, they can help reduce local governments' cost of providing infrastructure
35 and services and also reduce the potential for private property rights challenges.

36
37 The Commission believes the establishment of urban development boundaries that
38 curtail the expansion of urbanized areas is essential to protect and restore the
39 remnants of the Everglades ecosystem. After long debate, it was decided not to
40 recommend a mandatory program for the establishment of the boundaries through
41 Florida's existing comprehensive planning framework. The Commission instead
42 decided that voluntary cooperation and partnership building among federal, state,
43 regional, and local agencies and governments, coupled with the creation of
44 meaningful incentives, is the key to a sustainable future.

45
46 Nevertheless, it must be recognized that regardless of the attractiveness of the
47 incentives package, there may still be counties and cities that choose not to

1 participate. To support the establishment of urban development boundaries in
2 such areas, the Commission recommends that state and regional review of local
3 government plan amendments and Evaluation and Appraisal Reports be
4 strengthened to prevent and reduce the over-allocation of future land use densities
5 around the Everglades. Although this will not necessarily encourage or ensure the
6 designation of urban development boundaries, hopefully it can slow the low-
7 density suburbanization that is slowly devouring the Everglades ecosystem.

8
9 Recommendations:

- 10
11 45. Provide local governments with the opportunity to achieve a new
12 relationship with the State by creating a "Sustainable Communities"
13 program. This program should, in part, assure that local governments that
14 have not established urban development boundaries do establish them.
15 Appropriate local governments, DCA, and the regional planning councils
16 should give special consideration to tribal lands. Assistance and support
17 should be given to the Seminole Tribe and the Miccosukee Tribe of
18 Indians for their efforts to develop sustainable planned communities.

19
20 Action Step

- 21
22 a. DCA, working with FDEP, FDOT, and affected parties, especially
23 water management districts and local governments, should draft and
24 submit to the 1996 Legislature proposed legislation to establish a
25 "Sustainable Communities" program. The program should provide
26 dramatic and compelling regulatory and fiscal incentives to local
27 governments that exceed minimum state planning requirements and
28 meet the prescribed criteria. The legislation should establish
29 processes for local government application, evaluation,
30 determination, appeals, designation, and monitoring. The
31 legislation should provide for a maximum of 5 communities to
32 participate in the program in the first year, with at least 3
33 communities located in the region. If the program is successful,
34 the DCA should recommend expansion of the program to all local
35 governments by the 1997 Legislature. Funding support should be
36 provided by the Legislature to DCA to initiate and support this
37 program.

38
39 To be designated a "Sustainable Community," local governments
40 should have comprehensive plans that are in compliance with state
41 laws, demonstrate that they act consistently with their plans and
42 state growth management laws, and meet the following primary
43 criteria through their local government comprehensive plan and
44 land development regulations. These criteria are:

- 45
46 • establish urban development boundaries that will
47 ensure a clear separation between urban and rural

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- uses and eliminate urban sprawl;
• establish adequate minimum land use densities community wide, and moderate to high densities in transit corridors and in centers which encourage development and use of mass transit;
- adopt and implement land use plans, land development codes, and building guidelines that will result in sound urban design, energy efficiency, adequate open space, environmental protection, pedestrian-oriented mixed use development, protection of coastal resources, hazard mitigation, urban forestry management, and water conservation and reuse;
- designate infill development and redevelopment centers and corridors and establish financial and regulatory incentives for these areas, including prioritized and timely permitting processes, wherein applications for development permits within the designated areas are acted upon within 120 days; and,
- establish a schedule of impact fees that reflect the differential costs of development locations within the community.

The incentives provided to "Sustainable Communities" should include, at a minimum:

financial:

- targeted access to the State's Loan Guarantee Program;
- preference for state funding sources for school construction, including Public Education Capital Outlay funds;
- in cooperation with metropolitan planning organizations, preference for state and federal transportation funds;
- preference for state land acquisition funds;
- access to a newly created funding pool targeted to support infill development and redevelopment activities. Funds in the pool should be available to support grants and loans and would be expected to be used primarily to support the provision of mass transit facilities and services, infrastructure renovation and provision, assist land assembly and preparation, and provide quality public open space. The pool could be capitalized in several ways,

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including a special ad valorem tax, permit fee surcharges, a regional sales tax, local government infrastructure surtaxes, or some other source or combination of sources;

- enhanced use of the Community Reinvestment Act; and
- creation of tax increment financing districts.

regulatory:

- elimination of state review of plan amendments within the urban development boundary, except those that would expand the urban development boundary;
- exempt development within the urban development boundary from the Development of Regional Impact process if desired by the local government and approved by the applicable regional planning council; and
- certification and/or delegation of FDEP and water management district permitting and/or access to team permitting programs, as long as the requirements for certification and/or delegation are satisfied.

46. Establish criteria for the establishment of urban development boundaries.

Action Steps

a. DCA should collaboratively prepare guidelines setting forth criteria for urban development boundaries. The boundaries should be drawn to assure the protection of communities' key natural areas and agricultural lands and to ensure the cost-efficient provision of public infrastructure and services. In setting the boundaries, attention should be given to 15-year population projections, establishment of higher densities where needed, the limitations presented by market imperfections and unsuitable land, and consistency with the areas identified by the Commission for protection and restoration of the Everglades ecosystem. Given the low density sprawl that is South Florida's predominant development pattern, these boundaries should not be based on past density trends but instead tighter boundaries, requiring higher densities, should be set to protect the essential natural components of the Everglades ecosystem. These boundaries should also be established to allow room for rural and other buffer-type activities, including any locally unpopular land uses which will not adversely affect the Everglades, to take place in between the urban edge and the Everglades.

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- b. Provide buffer areas between the ecological boundary line and locally designated urban development boundaries for non-urban uses. DCA's criteria for the establishment of urban development boundaries should include provisions for establishing buffer areas outside those boundaries for non-urban uses.
- c. Local governments should use the Evaluation and Appraisal Report process to set aside and designate in their future land use map series buffer areas for water recharge, transition lands, agriculture, open space, and other non-urban uses.
- d. When reviewing the urban development boundaries established by local governments, the regional planning councils and DCA should assure that boundaries are coherently set and coordinated on a countywide and regional basis.

47. The Commission should collect information that assists local governments to identify urban development boundaries by identifying the specific land areas needed for protection and restoration of the ecosystem, urban water supply, and flood control. The Commission should resolve any conflicts in this information.

Action Steps

- a. The Science Research Advisory Committee should assemble data identifying existing land uses by July 1996. By the end of 1996, the entire South Florida region should be mapped to show the boundaries needed for sustainable natural systems management, with the Kissimmee Basin mapped by 1997. This data should be assembled in an easily retrievable data base format.
- b. The SFWMD should identify land areas needed for aquifer recharge and urban water supply in its regional water supply plans prepared in accordance with the schedule contained in the District Water Management Plan.
- c. The U.S. Army Corps of Engineers, in conjunction with the SFWMD, should identify land areas needed for flood protection by 1996.

48. Reduce urban sprawl by combating the overallocation of future land use densities in local government comprehensive plans.

Action Steps

- a. If, 3 years after enactment of the "Sustainable Communities" program, the program has been unsuccessful in promoting the

1 adoption of urban development boundaries throughout the region,
2 the Legislature should amend Ch. 163, FS, to require the adoption
3 of urban development boundaries for those local governments in
4 the region that have not participated in the "Sustainable
5 Communities" program or otherwise adopted meaningful urban
6 development boundaries.

7
8 b. DCA should require local governments to provide compelling
9 justification in their presentation of data and analyses for
10 comprehensive plan amendments that intensify land uses within
11 areas currently under study for ecosystem restoration. Absent
12 highly compelling justification, these amendments should not be
13 approved.

14
15 c. DCA should more aggressively use its existing statutory authority
16 to disapprove comprehensive plan amendments that would allow
17 additional low-density residential sprawl that could negatively
18 impact the Everglades ecosystem. The Administration Commission
19 and the Florida Land and Water Adjudicatory Commission should
20 firmly support the DCA's efforts to fight sprawl.

21 **D-2. PROMOTE INFILL DEVELOPMENT AND REDEVELOPMENT**

22 While the creation of urban development boundaries presents numerous
23 opportunities and benefits, they will not, in and of themselves, promote more
24 compact, pedestrian friendly development. Developers are hesitant to deviate from
25 what has historically been a lucrative and subsidized development pattern.
26 Furthermore, many obstacles to infill development and redevelopment exist,
27 including:
28

- 29 including:
- 30
- 31 • large lot, low-density zoning;
- 32 • many vacant infill parcels have already been passed over because
- 33 they were not believed to be appropriate or attractive for
- 34 development;
- 35 • smaller sites frequently have size limitations or fail to meet current
- 36 zoning requirements;
- 37 • difficulties in marketing properties in economically depressed areas
- 38 due to perceptions of crime and other social problems;
- 39 • land assembly can be extremely burdensome and expensive;
- 40 • local government regulations and other permitting requirements can
- 41 present enormous obstacles;
- 42 • neighborhood resistance to higher densities, property tax impacts,
- 43 traffic and parking problems, and concern for urban open space is
- 44 often difficult to overcome; and
- 45 • adequate infrastructure capacity may not exist in some infill
- 46 locations.
- 47

1
2 To overcome these many obstacles and encourage investment in infill areas that
3 potentially exist throughout the region, a package of incentives must be developed
4 to make development and redevelopment attractive and affordable. Regulatory
5 incentives, such as a streamlined or expedited permitting process, have the
6 potential to increase housing in downtowns and urban centers, encourage mixed-
7 use development, and enhance the vitality of such areas. Another benefit of an
8 incentives package is to offset the increased land values that sometimes come with
9 the establishment of meaningful urban development boundaries. Higher land
10 values can have the potential of making projects within the urban development
11 boundary less economically desirable or affordable to land buyers. However, this
12 effect can be offset by meaningful economic and regulatory incentives that reduce
13 present regulatory obstacles and positively influence profit expectations. In
14 addition, increasing the desire to build in existing urban areas directly assists
15 efforts to promote compact urban development and curtail urban sprawl.
16

17 Identifying and cleaning up contaminated property can also be used to stimulate
18 infill development and redevelopment. The U.S. Environmental Protection
19 Agency's (EPA's) Brownfields Economic Redevelopment Initiative is designed to
20 empower states, communities, and other agents of economic redevelopment to
21 work together in a timely manner to prevent, assess, safely clean up, and reuse
22 brownfields. A brownfield site is one that has actual or perceived contamination
23 and has an active potential for redevelopment or reuse. EPA believes that
24 identifying and cleaning up contaminated property is a critical element in bringing
25 life and vitality back to a community. On January 25, 1995, EPA announced a
26 new Brownfields Action Agenda designed to help communities revive abandoned
27 or under-utilized industrial and commercial facilities where redevelopment is
28 complicated by environmental contamination.
29

30 As part of this initiative, EPA is funding 50 pilot projects by 1996 to encourage
31 community groups, investors, lenders, developers, and other affected parties to
32 clean up brownfields and return them to productive use. The Brownfields pilot
33 projects, each funded up to \$200,000 over 2 years, will provide funding for site
34 assessments, direct special efforts toward removing regulatory barriers without
35 sacrificing protection, and facilitate coordinated efforts at the federal, state, and
36 local levels. The pilots will help build an enduring capacity at the state and local
37 levels to encourage cleanups and redevelopment. Findings and experience from
38 these pilots will serve as a foundation for a national strategy to stimulate economic
39 redevelopment through environmental cleanup. Eighteen pilots have been awarded
40 to date, with 10 more to be awarded in November 1995 and again in March 1996,
41 and 12 regional pilots to also be awarded in 1996. The Brownfields Initiative is
42 an example of positive governmental attitude and support to revitalize
43 communities and restore economic vitality. FDEP also has adopted differential
44 standards designed to facilitate the reuse of contaminated industrial sites. These
45 modified state standards, which only apply to soils, set the lowest safe clean-up
46 level for sites to have industrial reuses and the highest level for residential reuses.
47 FDEP and local governments should closely monitor and support EPA's efforts

1 and efforts of their own to facilitate the safe reuse of contaminated urban sites for
2 future implementation in South Florida.

3
4 Land assembly and land readjustment are tools which can also facilitate infill
5 development and redevelopment. Land assembly, the consolidation of fragmented
6 landholdings, offers opportunities for better areawide design and planning and for
7 the more efficient provision of neighborhood infrastructure. Land readjustment,
8 the replatting of an area of land with multiple owners and its subsequent
9 redevelopment under a unified plan, provides a more flexible method for
10 consolidating land than by purchase or condemnation. It also limits public sector
11 costs and avoids some of the political confrontations and disruptions typical of
12 traditional methods of urban renewal (Schnidman, 1988).

13
14 In addition to strongly promoting infill development and redevelopment,
15 government should serve as a model by ensuring that its own facilities are sited
16 in urban cores--to promote infill--and within close proximity to public transit--to
17 help reinforce investment in and use of those systems. The Commission
18 recognizes that cheaper land costs along the urban fringe are attractive even to
19 government in its role as developer. However, the expense of providing
20 infrastructure, coupled with inaccessibility to public transit and isolation from
21 other agencies and units of government, soon outweigh the initial savings. When
22 existing development regulations and concurrency requirements discourage
23 governments from choosing to locate in urban cores, innovative solutions to
24 support public transit systems and pedestrian activity should be explored.

25
26 In addition to its desire to encourage infill development throughout the entire
27 region, the Commission endorses a focused effort to overcome the many obstacles
28 that exist to infill development and redevelopment along the southeast coast. An
29 initiative called "Eastward Ho!" is intended to provide a meaningful channel for
30 growth in southeast Florida, other than lands adjacent to the Everglades. The
31 initiative aims to redevelop an urban corridor within Dade, Broward, and Palm
32 Beach Counties through a public/private partnership.

33
34 Presently, there are no incentives for landowners to transfer their development
35 rights to the urban area, which would help conserve the environmentally sensitive
36 lands in the western portions of this tri-county region. Redevelopment of small
37 urban infill sites is not feasible now because such projects cannot receive funding
38 since the building process offers no predictability and developers typically face a
39 slow approval process. No practical solution is possible without taking the area
40 as a whole and allocating the necessary resources to re-establish the backbone
41 infrastructure, putting in place a master plan, and coordinating the activities of
42 existing authorities.

43
44 The area between and on either side of the Florida East Coast and CSX railroad
45 tracks is often economically depressed throughout the tri-county area. Converting
46 this area into a viable economic engine serving mixed uses would have several
47 positive consequences. Children could be re-enrolled in eastern schools.

1 Affordable housing would be created in locations that make sense. Private sector
2 investment of capital would be fostered. A framework and implementation tool for
3 redevelopment would be established by siting office, commercial, and mixed-use
4 nodes near transit stations and along the transportation axis. Furthermore, new
5 high wage job opportunities could be located in this infill area. Residents and
6 visitors alike would enjoy easily accessible, inexpensive transportation and
7 commercial activities would be revitalized as the enhanced and expanded Tri-Rail,
8 and ultimately high speed rail, connects infill development nodes and clusters.
9 Expanded cultural and recreational opportunities would draw more residents and
10 tourists into inner city areas and encourage further infill projects. Finally, this
11 infill transportation and redevelopment initiative could reverse some of the
12 westward development and encroachment trends currently threatening the
13 Everglades.

14
15 Overcoming the historic and very real obstacles to infill development and
16 redevelopment in the eastern core requires understanding and support among the
17 public and policy makers. One way to kick off the "Eastward Ho!" initiative is
18 through a regional forum process. This process facilitates a community-based
19 consensus on complex public policies while promoting communication between
20 interdependent stakeholders. This consensus process could initiate an infill
21 development and redevelopment strategy for the area--perhaps something akin to
22 a master areawide development of regional impact plan. It could also initiate a
23 framework for a unified and very quick development approval process. This could
24 be employed by the affected municipalities and counties.

25
26 Recommendations:

- 27
28 49. Establish streamlined, expedited permitting at all levels of government to
29 promote infill development and redevelopment projects.

30
31 Action Steps

- 32
33 a. In their Evaluation and Appraisal Reports and implementing
34 amendments to their comprehensive plans and land development
35 regulations, local governments should identify priority infill
36 development and redevelopment areas. Guidelines for the
37 designation of these areas should be prepared by DCA. These
38 guidelines should define priority infill areas and assist in selecting
39 areas appropriate for increased densities, enhanced transit use,
40 preapproved development authorization, and streamlined permitting.
41 There should be a finite supply of these priority infill areas so as
42 not to dilute the value of the fiscal and regulatory benefits that will
43 accrue to these areas.
44
45 b. FDEP should undertake at least one team permitting/ecosystem
46 management pilot project in an infill urban area by 1997.
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c. The Commission should seek the immediate support and assistance of the South Florida Ecosystem Restoration Task Force to streamline federal regulatory requirements.

50. Take advantage of the opportunities provided by the EPA's Brownfields Initiative and FDEP's differential standards to make easier the safe commercial and industrial reuse of contaminated sites in infill and redevelopment areas.

Action Steps

a. FDEP, in consultation with the Risk-Based Priority Council, should prepare legislation for consideration by the 1997 Legislature to enact a Real Estate Reuse Act, which grants a covenant from the state that is binding on local regulatory agencies not to sue any party who voluntarily initiates and completes timely clean up, pursuant to state and local governmental guidelines or criteria, of a "brownfield site" as defined by the EPA. This program should promote commercial and industrial reuse by reducing unsafe exposure rather than concentrating on clean up activities that may not be cost-effective or necessary.

b. Regional agencies and local governments should identify brownfields within their jurisdiction and apply to EPA for funding of demonstration pilots.

51. Provide access to funding to support infill development and redevelopment efforts, such as matching grants for land reassembly, replatting, planning, permitting, and infrastructure upgrades.

Action Steps

a. The 1996 Legislature should authorize counties to enact, without a referendum, up to a 1 cent countywide sales tax for each of the next 10 years to capitalize funding pools to support infill development and redevelopment and otherwise assist in funding the implementation of the recommendations of the Commission.

b. DCA should examine current platting and replatting laws of Florida to determine if they provide adequate tools for local governments, the development community, and other interests to successfully undertake infill development and redevelopment projects and address the problems presented by antiquated platted lands. The DCA's examination should be completed in time for consideration of its recommendations by the 1997 Legislature. In addition, the Florida Legislature should amend part III of Ch. 163, FS, during the 1996 legislative session to allow the creation of community

1 redevelopment districts to facilitate replatting. The finding of
2 necessity pursuant to § 163.355, FS, should still be required.
3

- 4 c. The Florida Legislature should amend part III of Ch. 380, FS,
5 during the 1996 Legislative session to make land assembly and
6 readjustment projects in infill areas eligible to compete for funding
7 under the Florida Communities Trust program. Any funded project
8 should, in part, provide additional urban green space open for free
9 public use, such as linear parks, town greens, and other areas.
10

- 11 52. Undertake an "Eastward Ho!" initiative to encourage and support infill
12 development and redevelopment in a Southeast Florida Development and
13 Redevelopment Corridor.
14

15 Action Steps
16

- 17 a. The South Florida Regional Planning Council should take the lead
18 to implement the "Eastward Ho!" initiative. This targets the
19 Southeast Florida Development and Redevelopment Corridor for
20 special attention and benefits to stimulate growth and development
21 activity. DCA, in coordination with FDOT, metropolitan planning
22 organizations, the SFWMD, appropriate federal agencies, the
23 Treasure Coast Regional Planning Council, and local governments,
24 should support this effort.
25
- 26 b. The South Florida Regional Planning Council, working with
27 impacted local governments, the Governor's Commission for a
28 Sustainable South Florida, the FAU/FIU Joint Center for
29 Environmental and Urban Problems, the SFWMD, the Treasure
30 Coast Regional Planning Council, and the Florida Institute of
31 Government, should host a regional forum by early 1996 to
32 mobilize stakeholder agreement on a common plan to spur
33 redevelopment of the Southeast Florida Development and
34 Redevelopment Corridor. This regional north/south corridor should
35 encompass the area between and around the Florida East Coast and
36 CSX railroad tracks, stretching from the South Miami area in Dade
37 County to the middle of Palm Beach County, and should also be
38 linked to the region's major downtowns, airports, and seaports. The
39 plan should promote, encourage, and facilitate redevelopment, infill,
40 and enhancement around a central transportation corridor, focusing
41 specifically on incentives.
42
- 43 c. FDEP, the Corps, and the SFWMD should implement prioritized
44 permitting by the end of 1996 to insure action is taken on permits
45 for activities in the corridor promptly after submittal of a completed
46 application.
47

1 d. Local governments, FDOT, and the U.S. Department of
2 Transportation should support, both through funding and planning
3 programs, the efficient use and further development and
4 enhancement of the Tri-Rail system. This should include a focus
5 and priority on improving, upgrading, extending, and expanding
6 Tri-Rail and its feeder systems and making it easy to build medium
7 and high density projects within transit oriented development nodes
8 around stations. These actions are needed in order to realize
9 significant commercial growth and housing redevelopment near
10 stations along the Tri-Rail route in inner cities and downtown
11 areas, particularly in Dade, Broward, and Palm Beach Counties.
12 These actions should also apply to high speed rail as this system
13 begins to be developed.

14
15 e. Local governments, DCA, FDEP, FDOT, the SFWMD, the South
16 Florida and Treasure Coast Regional Planning Councils, and federal
17 agencies should assist in funding, starting in 1996, the development
18 of master plans and special overlay zones for the Southeast Florida
19 Development and Redevelopment Corridor. The master plan
20 should provide an overall development framework, including a plan
21 for necessary public services, facilities, and financing, while the
22 overlay zones will provide for well-designed mixed use
23 communities, prioritized permitting, and other meaningful
24 regulatory incentives. The Florida Legislature should provide
25 leadership in funding local governments to rewrite land
26 development regulations toward this end.

27
28 53. Government should serve as a leader and model in siting facilities to
29 promote infill development and redevelopment and incorporating
30 sustainable design and construction principles in public buildings.

31
32 Action Steps

33
34 a. The Governor should submit legislation for consideration by the
35 1996 Legislature to amend Ch. 255, FS, to require the Department
36 of Management Services to be consistent with the downtown
37 revitalization goal of the State Comprehensive Plan, Ch. 187, FS,
38 when siting facilities. The effect of this legislation would be to
39 allow (and require) the location of state facilities to be given
40 greater weight than their cost, within reason. Similar legislation
41 should also be pursued for the Board of Regents and all other state
42 agencies that acquire sites and build state facilities.

43
44 b. Local governments, through their comprehensive plans and the
45 clearinghouse review process provided through the Coastal Zone
46 Management Program, should encourage the siting and construction
47 of federal facilities, such as post offices, agency headquarters, and

1 other structures, in such a way as to promote infill development
2 and redevelopment.
3

- 4 c. Local governments should adopt public buildings policies as part
5 of their comprehensive plans to assure public buildings are sited in
6 urban cores and in areas where civic buildings can assist in
7 achieving a desired urban form.
8

9 **D-3. INVEST IN THE TRANSPORTATION SYSTEM AND MANAGE IT TO**
10 **SUPPORT SUSTAINABLE DEVELOPMENT AND CURTAIL URBAN**
11 **SPRAWL**

12
13 The transformation of South Florida's urban form to a more efficient and liveable
14 quality of life depends on the formation of a partnership among federal, state, and
15 local governments; regional agencies; and the private sector, particularly
16 developers and real estate lenders. Additionally, each entity must be fully
17 committed to invest in this transformation. In particular, investment in sustainable
18 communities must take into account the inevitable impact of the transportation
19 system on land use patterns.
20

21 Urban development patterns have a direct and substantial effect on public
22 transportation's ability to cost-effectively serve the region's travel needs. High
23 population densities are needed to support a good public transit system. At the
24 same time, a good public transit system is needed to sustain increased population
25 densities. This type of system interdependence creates an inherent efficiency
26 within sustainable communities. If urban sprawl is to be contained, decision
27 makers must find a way to better use the region's existing transportation
28 infrastructure and transportation options before investing in new highways and
29 roads serving fringe areas. A key option for accomplishing this end is the
30 establishment of regional transportation funding authorities to address multi-county
31 transportation needs. These authorities, which should be formed with the support
32 of their respective local governments, should create access to additional funding
33 sources that will better enable them to meet the region's intercounty needs.
34

35 FDOT is already taking innovative steps to promote the use of public
36 transportation. A prime example of efforts in this regard is its adoption of a
37 policy which limits the expansion of any highway within urbanized areas (i.e.,
38 populations of 200,000 or greater) to 10 lanes. The Department's progressive
39 planning philosophy, evident in its 2020 Florida Transportation Plan, promotes the
40 use of carpools and vanpools, expanded bus systems, bikeways, pedestrian corridor
41 overpasses, high speed rail systems, multi-use trails, and high occupancy vehicle
42 lanes. The Department also favors employer incentives that encourage ride
43 sharing and support facilities such as bike racks and office restrooms with
44 showers, as well as the use of intelligent vehicle and highway systems. More
45 choices can reduce the demand for more highway lanes and increase mobility for
46 those who do not wish to use or do not have access to automobiles.
47

1 Another important step for diminishing demand for additional roadway
2 construction is reducing the need for hurricane evacuation. Currently, evacuation
3 is the principal hurricane safety measure available to South Floridians. Increased
4 ability to take shelter at home, or close to it, would reduce the demand on
5 transportation agencies to build oversized roadways to meet potential hurricane
6 evacuation needs. The identification of new, safely constructed, and properly
7 staffed and equipped shelters should become a top policy and funding priority.
8 State, regional, and local governments should be encouraged to work in this
9 direction.

10
11 In conclusion, despite the best efforts of FDOT, metropolitan planning
12 organizations, and local governments, the Commission believes that South Florida
13 is facing a transportation crisis. The automobile is the only viable transportation
14 choice in much of the region. In southeast Florida, the most congested area, east-
15 west travel routes in Dade and Broward Counties are very overloaded and
16 meaningful alternatives to the single occupant vehicle do not exist. North-south
17 transportation corridors in the southeastern region are also jammed but at least the
18 Tri-Rail system offers an effective alternative to automobile use. The region's air
19 space is also projected to become overcrowded early in the next century. The
20 solutions, which involve local and high speed fixed rail, public transit, high-
21 occupancy vehicle lanes and more, are expensive but achievable. Dealing with
22 this crisis should be a top priority of federal, state, regional, and local
23 transportation planners and decision makers.

24
25 **Recommendations:**

- 26
27 54. Local governments, working with FDOT and DCA, developers, regional
28 planning councils, and metropolitan planning organizations, should increase
29 investment in public transportation within urban areas and design and
30 manage the transportation system to promote desired compact urban
31 growth patterns.

32
33 **Action Steps**

- 34
35 a. FDOT should establish high occupancy vehicle lanes on all major
36 highways, wherever appropriate, and encourage full enforcement of
37 the proper use of those lanes.
38
39 b. FDOT should maximize use of state and federal transportation
40 funds for public transportation and non-single occupancy vehicle
41 improvements within urban areas.
42
43 c. Metropolitan planning organizations should give greater emphasis
44 to public transportation in the prioritization and selection of
45 projects to be funded with federal transportation funds.
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- d. FDOT should continue to exceed the 15% minimum currently assigned to transit in Ch. 339, FS, and continue to strongly encourage metropolitan planning organizations to assign a significantly higher percentage to non-single occupant automobile improvements in its urban districts.
 - e. Local governments, with assistance from FDOT and metropolitan planning organizations, should establish varied level of service standards to assure that highway capacity constraints within urban areas do not encourage urban sprawl.
 - f. The DCA, working with FDOT and local governments, should develop alternatives to transportation concurrency requirements which promote the use of public transportation.
 - g. The FDOT, applicable federal agencies, local governments, and metropolitan planning organizations should work together to consider bicycle/pedestrian facilities at the planning and designing stage for appropriate proposed roadway improvements and new roadways including the dedication of increased funding for these purposes.
 - h. Local governments should design and implement transportation impact fees in lieu of roadway impact fees within designated infill development and redevelopment areas. In addition, the Departments of Transportation and Community Affairs and appropriate university centers should assist local governments to refine roadway impact fee structures to reflect variations in average trip lengths and mode splits in transit-served infill areas as compared to those in outlying suburban and exurban areas. This should result in lower fees being charged in transit-served areas.
 - i. In their Evaluation and Appraisal Reports and implementing amendments to their comprehensive plans and land development regulations, local governments should establish land use policies that reduce automobile trip generation and facilitate the use of public transportation and alternative transportation modes (e.g., bicycle and pedestrian traffic).
 - j. Where a viable transit system exists, local governments should integrate parking availability and pricing into transit system development policies and, where feasible, merge management of parking and transit services into a single organization.
55. State, regional, and local agencies should promote the use of pricing mechanisms that promote public transportation and the efficient provision and use of public facilities.

1 Action Step

- 2
3 a. The FDOT, metropolitan planning organizations, toll road
4 authorities, and other transportation entities should implement
5 congestion pricing strategies by 1997, such as variable tolls where
6 existing tolls are already being collected, to spread out the peak
7 period and encourage more efficient use of highway facilities.

- 8
9 56. The 1996 Legislature should authorize the creation of regional
10 transportation funding authorities that, once created, would have access to
11 new dedicated sources of capital and operating funds to support their
12 activities.

13
14 Action Step

- 15
16 a. Applicable local governments, with assistance from FDOT, should
17 prepare and submit legislation authorizing regional transportation
18 funding authorities. This legislation should provide for a new
19 dedicated source of funding for the authorities, which could come
20 from a regional gas tax, regional sales tax, regional tax increment
21 financing districts, or some other source or combination of funding
22 sources.

- 23
24 57. Aggressively attack and resolve the transportation crisis facing Southeast
25 Florida.

26
27 Action Steps

- 28
29 a. The FDOT, in conjunction with applicable federal agencies, local
30 governments, and metropolitan planning organizations, should
31 accelerate efforts to fund and build the Miami intermodal
32 transportation transfer center and the east-west MetroRail line
33 connecting Florida International University, Miami International
34 Airport, Downtown Miami, and South Miami Beach. The
35 possibility of extending transportation services to provide
36 recreational and ecotourism access to public lands and parks should
37 be explored.

- 38
39 b. The FDOT, in conjunction with the regional planning councils,
40 local governments, and metropolitan planning organizations, should
41 ensure that priority is given to the development and implementation
42 of intermodal transportation projects, on a region-wide basis, to
43 enable transit users to efficiently travel on a region-wide basis.

- 44
45 c. The FDOT, in conjunction with applicable federal agencies, local
46 governments, and metropolitan planning organizations, should
47 accelerate efforts to enhance the development and funding of the

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Tri-Rail system as well as the development of the state-owned Southeast Florida Rail Corridor and a high speed rail system connecting Miami with Orlando and Tampa. In addition, to avoid the problems associated with an earlier high speed rail development effort, FDOT should assure that, if any land development incentives are provided, they will not encourage development activities that conflict with the urban form recommendations of the Commission. Special attention also should be given to creating a station development strategy, which should be based on traditional neighborhood and pedestrian-oriented design principles.

d. The South Florida Regional Planning Council should ensure that the tri-county regional forum planned to kick off the "Eastward Ho!" initiative works to build public and governmental support for a regional transportation funding authority in southeast Florida. Consideration should also be given to committing a portion of the new regional transit authorities' funding to expanding service to the urbanized areas to the west.

58. State and regional agencies, local governments, and the private sector should promote alternatives to hurricane evacuation to reduce high clearance times. Aggressively increasing the number and quality of shelters in the region is essential if South Florida is to meet the Legislature's goal of eliminating the shelter deficit by 1998, which the Legislature adopted after Hurricane Andrew.

Action Steps

- a. County emergency management agencies, with the assistance of DCA, should examine and improve the current American Red Cross shelter system to create a system of reliable, safe, equipped, and adequately staffed shelters.
- b. County emergency management agencies, with the assistance of DCA, should complement the current American Red Cross shelter system to create a system of neighborhood hurricane safety centers for sheltering persons close to home. These centers should be located outside of category 1-3 surge zones and consist of public or other appropriate buildings that are safely elevated and built to withstand category 4 hurricane force winds. These centers need not be staffed or equipped, but rather just serve as refuges where people can be safe during the storm event.
- c. The Legislature should establish a new dedicated funding source to provide matching grants to supplement the cost of construction of new buildings and to renovate existing buildings to create these centers.

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- d. Spaces within new schools and government buildings should be designed and built to double as hurricane shelters. This should occur regardless of the availability of new or increased funding for this purpose but the provision of additional funding to help meet these additional costs is encouraged.

- e. The State of Florida should impose criteria for private insurance and the state-administered joint insurance pool that encourage retrofitting of existing buildings and construction of new buildings that could serve as neighborhood hurricane safety centers.

- f. Amend and enforce state and local building codes to, in part, assure that all new buildings are constructed to withstand at least a category 3 hurricane and that a "safe room" is included in every new home that will withstand at least a category 4 hurricane. This "safe room" could be an interior bedroom, bathroom, or some other room.

- g. Increase the efforts of public and private organizations to educate employees to create personal hurricane contingency plans, including adequate home protection plans, emergency supplies, and a safe evacuation and shelter plan if necessary.

D-4. INCREASE ATTENTION TO BETTER URBAN DESIGN

Once growth is focused in urban areas and development is occurring in a compact form, serious thought must also be given to the physical shape of that growth and development. New urban development, guided by innovative urban design and promotion of individual community identity, can help ensure sustainable communities. The Commission believes South Florida's growth should be based on principles of urban design that enhance public transit opportunities and facilitate alternative modes of transportation, reduce neighborhood crime, utilize innovative land development guidelines, and encourage the use of sustainable design and construction practices. Appropriate application of these principles can help create compact mixed-use development in close proximity to public transit, where children can walk safely to school, where economic development and sustainable construction are not mutually exclusive, and where community quality of life is improved and enhanced.

It has become widely recognized that the decentralization of people and activities coupled with low-density, sprawling development have created a dependence on the private automobile that will be difficult to change. Continued expansion of highway lanes to increase capacity, reduce congestion, and maintain acceptable levels of service make public transit a more difficult option to implement. Although the ability to get along without an automobile in South Florida is quickly disappearing, proper urban design can help reverse this trend, thereby

1 contributing to the effectiveness and efficiency of public transit and other
2 alternative modes of transportation. Good urban design includes:
3

- 4 • locating development in proximity to public transit to promote
5 access and mobility;
- 6 • planning for mixed-use development that incorporates open spaces
7 and greenways to facilitate the use of other modes of transportation
8 (e.g., walking, biking);
- 9 • developing interconnected street networks in which commercial
10 activity, such as shopping and working, are concentrated in town
11 centers; and
- 12 • using traditional neighborhood design principles, such as locating
13 all residences within a 5 minute walk of neighborhood centers and
14 placing schools and other community attractions within short
15 walking and biking distances.

16
17 Sound urban design should also be facilitated through innovative land development
18 guidelines. Many examples and studies exist nationwide and an effort to pull the
19 best of these guidelines together was recently completed under the auspices of
20 DCA, "Best Development Practices: Doing the Right Thing and Making Money
21 at the Same Time" (Ewing, 1995). In this study, soon to be published, the author
22 advocates good community development through the pursuit of public purposes
23 (e.g., affordable housing, energy efficiency, preservation of natural areas, etc.), but
24 within existing market parameters. The report's recommendations, which focus on
25 land use, transportation, environmental protection, and housing, make good
26 business sense and are directed towards developers as a guide to practices of
27 "good" yet profitable development. These recommendations, however, are also
28 applicable to government planners and public officials. While the practices
29 identified are too numerous to list here, the following provides a sampling of some
30 of the more useful suggestions:
31

- 32 • concentrate commercial development in compact centers or
33 districts;
- 34 • place higher density housing near commercial centers, public transit
35 lines, and parks;
- 36 • provide networks for pedestrians and bicyclists which are as good
37 as the network for motorists;
- 38 • channel development into areas that are already disturbed;
- 39 • achieve an average net residential density of 6 to 7 units per acre
40 (using good urban design without the appearance of crowding);
- 41 • use cost-effective site development and construction practices; and
- 42 • mix housing prices and types to the extent the market will bear
43 (Ewing, 1995).

44
45 Falling within the parameters of Best Development Practices is the use of
46 sustainable design and construction techniques and promoting sound urban design
47 to demonstrate defensible space. However, the issues of urban design and

1 defensible space warrant further discussion. The formal concept of urban design
2 deals with the pattern of growth, not necessarily the rate or amount of growth.
3 Some key elements in the evolution from sprawling growth patterns to more
4 compact, liveable, pedestrian-oriented places (i.e., good urban design) are:

- 5
- 6 • controlling fringe growth;
- 7 • supporting public transit;
- 8 • supporting "human" (pedestrian) transportation;
- 9 • relating infrastructure to urban design, as opposed to designing
10 around pre-designated infrastructure requirements;
- 11 • building attractive civic centers;
- 12 • encouraging public open space;
- 13 • decreasing distances through compact development; and
- 14 • creating a city form based on human activity, not the automobile
15 (Burton, et al., 1991).
- 16

17 In that vein, urban design can also be used to help reduce neighborhood crime--a
18 prominent issue which greatly detracts from quality of life. Neighborhood crime
19 is not unique to any community and has been an urban social problem, particularly
20 in poor neighborhoods and housing projects, for well over a century. However,
21 there has been an increasing recognition that physical design of apartment
22 complexes, residential development, and public housing projects can play a role
23 in crime reduction. Credited with the early development of this notion of
24 "defensible space," the architect Oscar Newman believed that most criminals select
25 locations that will offer the highest rewards with the lowest risk of getting caught.
26 Therefore, to deter crime, Newman concluded that spaces should be designed to
27 convey a sense that potential intruders would be observed, identified as intruders,
28 and have difficulty escaping (Shimberg Center, 1995). Some examples of
29 "defensible space" principles include:

- 30
- 31 • physical features such as windows and lighting of public spaces or
32 activities such as outdoor vendors that increase visibility;
- 33 • physical guidance of people between buildings by appropriate
34 placement of entrances, fences, and landscaping;
- 35 • outdoor features expressing ownership through the use of art,
36 landscaping, furniture or signage; and
- 37 • maintenance of space to ensure it is used for its intended purpose,
38 adding a feeling of ownership, and lessening obstructions to
39 visibility caused by overgrowth or inoperative lighting (Plaster,
40 1992).
- 41

42 In a recent essay written by Henry Cisneros, Secretary of the U.S. Department of
43 Housing and Urban Development (Shimberg Center, 1995), the following design
44 techniques were recommended for single-family homes, row houses, and duplexes:

- 45
- 46 • avoid setting the home too far back from the street to keep it
47 observable;

- 1 • provide fences or other barriers to prevent easy access;
- 2 • provide good outside lighting; and
- 3 • avoid visual barriers that create hiding places.

4
5 Suggestions for small apartment buildings include minimizing the number of
6 apartments served by each entrance and dividing and allocating outside spaces to
7 individual families, or at the least, to a limited number of families.
8

9 The sustainable construction and sound urban design issues discussed in this
10 section are being carried out in a prototype project being developed by the
11 Homestead Habitat for Humanity. The project, Jordan Commons, will provide 200
12 affordable housing units on a 20 acre site. The project's features include:
13

- 14 • landscaping designed to not only cool individual homes, but also
15 the community as a whole;
- 16 • hot water heaters that combine solar energy and natural gas;
- 17 • the use of high efficiency light bulbs in all homes;
- 18 • pedestrian-friendly streets;
- 19 • homes designed with porches facing the street to give each house
20 visual access to its immediate neighborhood;
- 21 • three small parks and a 10,000 square foot recreation center sited
22 to optimize their proximity to all homes; and
- 23 • services, such as day care, a community store, and recreational and
24 educational programs sited within a central community facility.
25

26 The neighborhood design of Jordan Commons attempts to foster community
27 cohesion using principles derived from older urban communities that appeal to the
28 affluent home-buyer of popular neo-traditional neighborhoods like Seaside,
29 Florida. Habitat for Humanity's goal is to create a viable, sustainable community.
30

31 Not only should government serve as a model in siting development to support
32 desired growth patterns as discussed earlier in this chapter, it should be a leader
33 in employing sustainable construction and design practices. The City of Austin,
34 Texas lives up to this responsibility. In 1994, the Austin City Council passed a
35 resolution calling for the development of Sustainable Building Guidelines that
36 would reflect an integrated approach to building, encompassing the entire design
37 and construction process. The city has demonstrated a desire and a commitment
38 to incorporate sustainable building practices in its municipal facilities. The value
39 expected in city projects includes not only appropriate levels of performance at the
40 best price, but, also: avoidance of future and indirect public costs from toxic by-
41 products; excessive energy or water consumption; and unnecessary waste in
42 manufacturing, transporting, using, and maintaining building systems and
43 components (Austin, 1994). The guideline goals focus on:
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- 45 • energy efficiency;
- 46 • electrical load management and peak demand reduction;
- 47 • water conservation;

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- construction demolition and waste reduction;
- operational waste reduction;
- efficient and environmentally sensitive use of raw materials and building materials;
- building longevity; and
- indoor air quality.

The Commission encourages government to look to other local initiatives to support its efforts in this area. For instance, the Florida House Foundation, Inc. defines sustainability as natural resources which support ongoing quality of life and culture. Their base of operation, the Florida House Learning Center in Sarasota, is a working illustration of principles of sustainable construction. The center demonstrates how to reduce consumptive patterns, use resources efficiently, and design for quality and higher densities while promoting economic vitality. Their economic development commission is currently involved in a "Campaign for SURE (Sustainable Urban Rural Enterprise)." The campaign, which is devoted to establishing an economic development program that nurtures the expansion of local businesses and industries that practice resource conservation, recycling, and energy management, is based on the following principles:

- Principle 1: Protect, preserve, and restore the natural environment.
- Principle 2: Establish true-cost pricing economics.
- Principle 3: Support local agriculture and local business products and services.
- Principle 4: Develop clustered, mixed-use, pedestrian oriented communities.
- Principle 5: Utilize advanced transportation, communication, and production systems.
- Principle 6: Maximize conservation and develop local renewable resources.
- Principle 7: Establish recycling programs and recycled materials industries.
- Principle 8: Support education for participatory governance.

While the focus of the guidelines and principles discussed above is on residential development and municipal buildings, they are applicable and easily transferable to state and federal facilities as well. The benefits of such efforts (e.g., reduced energy costs, lower disposal and health costs, cleaner air and water quality, preservation of the local environment) will help ensure a sustainable economic and environmental future for the South Florida region.

Recommendations:

- 59. Local governments should increase clustering of employment centers to enhance transit and pedestrian opportunities.

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Action Steps

- a. By June 1996, the DCA, the FDOT, and regional planning councils should have educational efforts underway to encourage local governments to designate subregional and local activity centers in their comprehensive plans, and direct commercial growth and enhance transit service to those centers.
 - b. In their Evaluation and Appraisal Reports and implementing amendments to their comprehensive plans and land development regulations, local governments should increase clustering of employment centers to enhance transit and pedestrian activity.
60. The DCA and regional planning councils should promote the use of urban design principles which reduce neighborhood crime, demonstrate defensible space, reduce vehicle trips, and encourage pedestrian activity and the use of public transit.

Action Steps

- a. Universities, architects, planners, and other entities should prepare and promote in 1996 educational materials and prototypes which assist local government planning departments, developers, and the public to use urban design principles which reduce neighborhood crime, demonstrate defensible space, reduce vehicle trips, and encourage the use of public transit.
 - b. The DCA, the FDOT, and metropolitan planning organizations should encourage and provide funding to local governments to amend their land development codes to promote neotraditional neighborhood and pedestrian friendly development. One option would be to promote the adoption of a traditional neighborhood development model code as an overlay zone in local government comprehensive plans.
 - c. The DCA should distribute informative publications, such as the book *Best Development Practices*, to local planners, decision makers, the public, and the development community to encourage the use of sound urban design in planning and development decisions.
61. Increase the use of sustainable design and construction practices.

Action Steps

- a. The DCA should increase uniformity in building codes across the region and support and enhance local government enforcement of

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building codes, with assistance from the building and insurance industries.

- b. The State University System should sponsor an educational center in southeast Florida that demonstrates sustainable design and construction practices. In addition, the State University System should continue to emphasize sustainability in the plans for and construction of the Florida Gulf Coast University and in new buildings being constructed on other campuses.
- c. Florida colleges and universities should devote a segment of their engineering and architecture curriculum to teaching the use and benefits of sustainable construction, urban forestry management, and design techniques.
- d. The DCA should adopt, in 1996, a statewide standardized building energy rating system to achieve statewide uniformity and increase market pressure on builders to build energy efficient buildings.
- e. The DCA should prepare and sponsor local government adoption and implementation of sustainable building guidelines to complement existing life safety oriented building codes. These sustainable building guidelines should encourage construction of buildings using traditional Florida styles that maximize energy efficiency and reduce peak electrical demands, minimize use of fossil fuels, assure hurricane safety, conserve potable water, reduce demolition wastes, promote efficient and environmentally sensitive use of raw materials, improve indoor air quality, encourage xeriscaping and integrated pest management, and incorporate porches and other features to promote street life, social interaction, and neighborhood identity.
- f. By 1997, the State Board of Education should amend the State Uniform Building Code for Public Educational Facilities Construction to incorporate sustainable design and construction principles.

62. -Assure that necessary infrastructure and services that have regional implications, including locally undesirable land uses, are considered and planned for in a regional context.

Action Step

- a. Regional planning councils should assure that their Strategic Regional Policy Plans appropriately consider, plan for, and properly site locally undesirable land uses of regional significance (e.g., land fills, solid and hazardous waste sites, prisons, etc.).

1 **D-5. ACQUIRE, PROTECT, AND MAINTAIN OPEN SPACE**
2

3 A sustainable urban form is not only dependent on transforming development
4 patterns within urban areas, but also on designating open space outside these areas
5 for non-urban uses. Designating lands in local government comprehensive plans
6 for such uses serves to preserve natural systems, maintain lands for continued
7 agricultural production, and buffer natural systems from urban areas while
8 inhibiting urban sprawl.
9

10 As natural systems are acquired, protected, or set aside, care should be given to
11 ensure appropriate public access to those lands, provided that access is consistent
12 with the purposes for which the lands are acquired and managed. While
13 transportation corridors are a logical vehicle for providing such access, concern
14 exists that they may impede hydrology, and that the access provided may be
15 inconsistent with the management objectives of the associated public lands.
16 However, a transportation model (such as a segment of U.S. 41 within the
17 Everglades and Big Cypress National Preserve) could be used to demonstrate how
18 to balance public access with these management goals. For instance, the model
19 could include: prohibiting commercial traffic to help ensure transportation safety,
20 providing physical access to the north side of the roadway for parking and
21 boardwalks, enhancing natural flow-ways to improve hydrologic capabilities, and
22 providing educational opportunities through natural and cultural systems
23 interpretation. The Big Cypress National Preserve is in the process of
24 implementing a General Management Plan that identifies U.S. 41 for improved
25 visitor opportunities. Concurrently, FDOT is in the planning stages for
26 replacement of 10 bridges and resurfacing along U.S. 41. Both of these actions
27 present an ideal opportunity for developing a transportation model that provides
28 for a healthier Everglades and an enhanced public experience.
29

30 The local government comprehensive plan Evaluation and Appraisal Report
31 process is an ideal opportunity for local governments to designate and set aside,
32 on their future land use maps, buffer areas for agricultural lands, as well as for
33 water recharge, transitional lands, open space, and other non-urban uses.
34 Designation of these areas between the ecological boundary line and the urban
35 development boundary will help preserve the values of the Everglades ecosystem
36 while helping to transform South Florida's urban form by creating a buffer which
37 restricts unbridled urban expansion.
38

39 The largest single opportunity for acquiring open space in the lower east coast
40 area in proximity to urban areas is the Northwest Dade County Lake Belt Plan
41 (1994) being investigated at the direction of the Florida Legislature. Up to 100
42 square miles in the proposed buffer zone between the urban areas and the Water
43 Conservation Areas could be dedicated to recreation, ecotourism, open space, and
44 water supply purposes. The Plan provides for a 6-mile buffer between urban areas
45 and the Water Conservation Areas, and comprises approximately 75% of the lands
46 now being considered for the East Coast Buffer.
47

1 Recommendations:

2
3 63. Assure that transportation corridors located in or adjacent to public lands
4 are located and designed in a manner which will not impede natural
5 hydrology, will not discharge contaminants into the natural areas, will
6 maintain travel/migratory corridors for wildlife, and will provide physical
7 and visual access consistent with the purpose(s) for which the public lands
8 were acquired and are managed, and provide opportunities for encouraging
9 ecotourism.

10
11 Action Steps

- 12
13 a. FDOT, as well as local governments, should ensure that new
14 transportation facilities or improvements to existing facilities
15 maximize public access consistent with the purpose(s) for which
16 the public lands were acquired and are managed.
17
18 b. State and local plans for transportation corridor improvements
19 should include provisions for appropriate public access, including
20 designating sufficient right of way for the development of public
21 access points and ensuring a public access connection between
22 waters or lands split by such corridors.
23
24 c. By December 1996, the SFWMD, working with land management
25 agencies and appropriate state and federal agencies within the
26 South Florida ecosystem, should develop access plans that identify
27 land and water areas where public access can be provided and
28 ecotourism fostered in coordination with plans for transportation
29 corridor improvements and consistent with the purpose(s) for which
30 the public lands were acquired and are managed. These access
31 plans should be coordinated with the Statewide Florida Greenways
32 Network as designated by the Florida Greenways Commission
33 and/or its successor.
34
35 d. Federal, state, regional, and local permitting agencies should
36 continue and enhance coordinated efforts to minimize hydrologic
37 impediments caused by the construction of new transportation
38 facilities or improvements to existing facilities.
39
40 e. The FDOT, in coordination with the Big Cypress National
41 Preserve, should initiate a study of U.S. 41 within the Everglades
42 and Big Cypress National Preserve to consider transportation
43 safety, enhance hydrologic capabilities, improve visual and physical
44 access, and provide opportunities to boost ecotourism. This study
45 should include a determination of the future needs and function of
46 the highway, consider the U.S. Army Corps of Engineers'
47 hydrologic study recommendations, incorporate FDOT's plans for

1 bridge replacement and resurfacing, and be consistent with the Big
2 Cypress National Preserve's General Management Plan.
3

4 f. The Commission endorses the designation of U.S. 41 as a State
5 Scenic Highway under the procedures of the currently developing
6 Florida Scenic Highways Program. U.S. 41 should concurrently be
7 nominated through the State Scenic Highways Program for
8 designation under the Federal Program for National Scenic Byways.
9 The Commission urges Collier, Dade, and Monroe Counties to
10 nominate U.S. 41 for such designation.
11

12 g. Roads should be designed to protect adjacent natural areas from
13 impacts resulting from hazardous material spills and discharges of
14 contaminated stormwater.
15

16 64. Coordinate efforts to establish buffers between urban areas and the
17 Everglades and water conservation areas with the Northwest Dade County
18 Lake Belt initiative.
19

20 Action Step

21
22 a. The Commission should, during 1996, focus on the Northwest
23 Dade County Lake Belt Plan and assist DCA, local governments,
24 the SFWMD, and the South Florida Regional Planning Council in
25 considering the plan and the implications and opportunities it
26 presents for establishing recreation and buffer areas along the lower
27 east coast.
28

1 **E. TOWARD HIGHER EMPLOYMENT AND GREATER BUSINESS**
 2 **OPPORTUNITIES**
 3

4 As South Florida prepares for the 21st century, significant quality of life
 5 challenges face its residents and public leaders. These challenges include
 6 increasing economic competition, growing social and geographic disparities, an
 7 environment impacted by the demands of rapid population growth, and the
 8 threatened destruction of one of the nation's most prized natural resources--the
 9 Everglades. Economic growth was once considered the cornerstone of prosperity.
 10 Today, people are genuinely concerned about the negative impacts it has on the
 11 region's communities and sensitive natural resources.

12
 13 Achieving the Commission's vision will involve expanding the availability and
 14 accessibility of education, training, and high wage employment. This must be
 15 done through holistic approaches to community development and natural resource
 16 protection. If the region is to enter the 21st century offering its residents the kind
 17 of quality lifestyle that historically attracted residents and visitors to South Florida,
 18 the Commission's vision must be accepted and institutionalized.

19
 20 Traditionally, the economy of South Florida has been dominated by construction,
 21 agriculture, tourism, and the service demands of a rapidly increasing resident base.
 22 Over time, the region's counties witnessed the growth of more service-oriented
 23 industries including banking, real estate, accounting, legal, and retail enterprises.
 24 Unfortunately, the region has also witnessed an overall decrease in its share of
 25 employment in manufacturing and goods-producing industries. In the past, these
 26 jobs provided significantly higher wages than those in service-oriented enterprises
 27 and raised the standard of living and earnings within communities.

28
 29 According to official state projections, South Florida will continue to experience
 30 substantial growth. See Table E-1 (*Tourism estimates under the year 2000
 31 column are projected through 1998. ** Income figures are expressed in millions).

32
 33 **TABLE E-1**
 34 **ECONOMIC GROWTH IN FLORIDA**
 35

	1970	1980	1990	2000
Population	6,865,700	9,840,400	13,009,200	15,589,200
Non-Farm Job	2,152,100	3,579,400	5,387,400	6,787,800
Real Personal Income**	\$ 75,737	\$ 135,499	\$ 212,838	\$ 289,986
Visitors	23,151,698	20,045,675	40,067,000	* 45,067,000

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 43 SOURCE: Bureau of Economic and Business Research, Florida Long Term Economic
 44 Impact (1995)
 45
 46

1 While projected growth rates for the 1990s are impressive, most are markedly
2 lower than those of the previous decade. In addition, they hide less than
3 impressive increases in the standard of living for South Floridians. With the
4 exception of Palm Beach County, the region's level of earned per capita income
5 has not increased appreciably as a percentage of the U.S. level in over 10 years.
6 In 1994, using total earnings and total employment, South Florida's average
7 earnings per job (\$22,845) significantly lagged behind the national average
8 (\$26,531) and the state as a whole (\$23,889) (BEBR, 1995).
9

10 In the period from 1982 to 1992, total employment in the region grew by 37.9%,
11 a significantly higher percentage than the national rate of 22.0% for the same
12 period. Much of this growth is attributed to employment in the region's service
13 sector, which grew by 71.7% compared to 52.4% for the U.S. and 78.7% for
14 Florida. At the same time, manufacturing employment in South Florida only
15 increased by 1.9% compared to 6.5% for Florida (FDLES, 1994).
16

17 Recently, growth in international trade and port activity has accelerated
18 significantly. The region has emerged as a leading hub for trade within the global
19 economy. Trade between South Florida and Latin America is substantial.
20 Emerging trade with Europe and the Far East provides a critical juncture for
21 global distribution of goods through South Florida ports (Loiry, 1995).
22

23 In the first half of 1994, merchandise passing through Florida seaports totaled
24 \$21.9 billion, an increase of 14.6% over the same period the previous year. South
25 Florida's airport facilities also experienced growth throughout the 1994 reporting
26 period, handling approximately \$29 billion in total trade. Merchandise trade
27 between the South Florida region and Latin American/Caribbean markets accounts
28 for much of this increase. Miami, in particular, has emerged as a leading city and
29 "gateway" for trade within this hemisphere and the greater global economy. The
30 Florida Department of Commerce has estimated that each additional \$1 billion of
31 foreign trade creates approximately 16,000 additional jobs for Floridians
32 (University of Massachusetts, 1994).
33

34 Florida's current trade experiences are meeting with mixed results. Agriculture,
35 an important base economic sector in South Florida, is experiencing economic
36 challenges. It has also been negatively impacted, especially the tomato industry,
37 by trade agreements with Mexico and other market factors. These agriculture-
38 related losses, however, have been offset by more favorable terms of trade for high
39 value Florida-origin exports to Mexico, at least through the end of 1994.
40 According to the University of Massachusetts' Institute for Social and Economic
41 Research, Florida-produced merchandise exported to Mexico last year totaled \$844
42 million, an increase of 11.8% over 1993. Sales of industrial machinery, computers,
43 and other electronic equipment accounted for 37% of the export total. Despite
44 recent political and economic instabilities, the Mexican market is expected to
45 recover through stringent fiscal guidelines recommended by the international
46 financial community and adopted by the Mexican government.
47
48

1 During the past decade, the region's international business community has become
2 the home of companies from Europe, Asia, Latin America, and the Caribbean.
3 Greater Miami has also become the printing and publishing hub for the Americas,
4 with a thriving industry in English and Spanish language publications.
5

6 Since the 1920s, tourism has been highly visible and constituted a major
7 component of the South Florida economy. Although the annual growth in visitors
8 began to decline in the 1990's, South Florida continues to attract millions each
9 year. In 1994, southeast Florida attracted 13.4 million out-of-state visitors, or 33%
10 of Florida's total 41 million visitors (Florida Consensus Estimating Conference,
11 1995). Employment growth in the travel industry is one of the region's great
12 success stories. Overall, the tourist growth rate and the number of tourism-related
13 jobs in South Florida have contributed significantly to the economic wellbeing of
14 the region's citizens.
15

16 The Commission recognizes the critical nature and importance of all industries in
17 the region. Health care, financial services, transportation, commercial marine
18 endeavors, construction, and other businesses and commercial enterprises make
19 significant contributions to the South Florida economy. At this juncture, 3
20 industries were chosen for in-depth discussion and review because of their
21 overriding impact on the region's economy (tourism and international trade) and
22 potential for sustainable land usage (agriculture). Tourism and trade substantially
23 impact the economy in terms of total jobs, gross and taxable sales, airport activity,
24 port tonnage, and collection of sales and usage taxes. Agriculture is a major
25 source of employment in rural communities. It also offers important land
26 stewardship opportunities, critical to the region's long-term sustainability.
27
28

29 **E-1. A FOUNDATION FOR ECONOMIC DEVELOPMENT**

30

31 South Florida has the potential to become recognized as a leading center for
32 commerce and trade within the southeastern United States. To accomplish this
33 goal and maintain such a standing well into the 21st century, the region must
34 establish an identity that recognizes its potential and the economic challenges
35 faced by its communities. A coordinated and planned approach to economic
36 development in the region will help focus the direction of its growth.
37

38 One key to economic growth is the availability of capital. The region needs to
39 develop capital pools and investment equity that is easily accessible since capital
40 is necessary to develop new ideas, enter new markets, diversify economic growth,
41 and create new jobs. South Florida is rich in assets held by institutions and
42 individuals but relatively poor in capital invested in commercial loans. Florida's
43 entire share of U.S. venture capital barely reached 2% in 1993 and has never
44 exceeded 5% (FDOC, 1994).
45

46 Building a prosperous future also means recognizing the interdependence of the
47 economy and the environment and the importance of balancing the needs of each.
48 Today, South Florida is at a major juncture. Activities that have traditionally

1 resulted in strengthening the economy must be changed to avoid harming the
2 ecosystem. To take charge of the future, new ways to support economic growth
3 without sacrificing natural resources must be found.
4

5 The need for South Florida to expand and retain area businesses is more pressing
6 than ever. The region's job base is being threatened by industry cutbacks, possible
7 military base closures, and the loss of manufacturing jobs to other regions, states,
8 and countries. Economic development strategists are well advised to look closely
9 at existing industries and reinforce their competitive advantages. The region is
10 likely to experience an increasing demand for "green" (environmentally sensitive)
11 products and businesses. Supporting local industries in their efforts to enter and
12 utilize this emerging market could help sustain the region for years to come.
13

14 To better support and retain existing industries in the region there is a need to
15 streamline and simplify government's regulatory processes. Long term permitting
16 and team permitting could help existing and new businesses to become more
17 competitive. Businesses that demonstrate land, water, and air stewardship should
18 be granted long term permits when they elect to pursue Best Management
19 Practices. Multi-agency team permitting, in combination with long-term
20 permitting, could provide a more holistic and efficient industry evaluation process
21 during which principles of ecosystem and Best Management Practices could be
22 addressed. Such coordination among permitting bodies would save government
23 agencies and industry investors time and money. Regulators should endeavor to
24 attain this combination as it offers both control and certainty.
25

26 Economic growth and stability within the region should be based on a foundation
27 that is compatible with the maintenance of a healthy environment. This
28 foundation should include policy changes, public and private sector partnerships,
29 business and industry leadership, education and training programs, social and
30 health services, widely accessible information, and citizen involvement.
31

32 Critical to this foundation are development strategies that reconcile community
33 polarization, degradation, and discord with an ecologically sound plan for the
34 future. Coordination and planning among economic development and tourism
35 entities are also essential. A cohesive vision of community life in South Florida
36 will help develop a future based on economic prosperity, social equity, and
37 respect for the natural world.
38
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40 COMMISSION OBJECTIVE 41

- 42 • **Increase high wage employment in South Florida and ensure that**
43 **state education and training programs support and foster it.**
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Recommendation:

64. State and local governments should focus regional economic development policies and strategies to attract and retain South Florida industries that meet the following standards:

- (a) complement and positively impact the environment;
- (b) optimize competitive advantages of the region;
- (c) reflect value-added growth;
- (d) emphasize interrelationships among industries;
- (e) diversify economic opportunities to substantially decrease economic disparity;
- (f) generate wealth from regional exports; and
- (g) provide value-added jobs with pay scales high enough to further the goal of achieving wage growth throughout the region, which exceeds the national growth rate from 1995 through 2005.

Action Steps

- a. The Governor should convene an annual Regional Economic Development Alliance to integrate the region's economic development initiatives and plan for the region's future growth. This alliance should include representatives from business and industry including agri-business, local government, civic and community organizations, regional planning councils, and water management districts. This regional alliance will help marshal regional resources, focus economic development efforts, and target industries to meet the above criteria.
- b. To ensure a clear economic vision and compatible policies, economic development planning should be institutionalized within South Florida local government comprehensive plans (LGCP). By enactment of the Legislature, local governments with approved economic elements should be granted special consideration. For example, consistency with an approved LGCP economic element could become a factor for the Secretary of Commerce to consider in determining awards in the Qualified Target Industry Tax Refund Program. Other state, regional, and local agencies should consider offering similar incentives for this level of development planning.
- c. Local governments should actively pursue incentives for expansion and retention of existing businesses, particularly those that would contribute to infill where this has become a critical development strategy.

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- d. State, local, and regional entities should ensure that reinvestment occurs in the local economies where there are slum and blight conditions, low income neighborhoods, and deteriorated commercial areas.
- e. Enterprise Florida (established by legislation in 1993 to guide the state's economic development efforts) and the Florida Department of Commerce should encourage public sector seed capital networks and local financial lending institutions to customize programs for South Florida and pioneer development of financing initiatives, particularly those that are directed toward infill and sustainable community development projects.
- f. Enterprise Florida and the Florida Department of Commerce should create and develop a state and/or regional finance corporation empowered to enter into agreements with cities and counties to increase available credit for new and expanding businesses.
- g. By 1997, the Legislature should adequately fund the various stages of the Enterprise Florida Cypress Equity Fund (II) for investment in Florida based venture capital funds. This legislation should also target capital funds with a particular interest in sustainable development projects within South Florida.
- h. The Enterprise Florida Investment Funds should implement fiscal mechanisms to create direct accessibility to venture capital for small and minority businesses.
- i. The FDEP, in coordination with the SFWMD and appropriate federal and local agencies, should investigate alternative permitting strategies which would reduce economic impacts to development and businesses while maintaining environmental protection and develop, where appropriate, a long-term (20-year) permitting process, subject to 5-year evaluations, for new development and/or existing businesses that demonstrate good land, water, and air stewardship, in accordance with appropriate permit conditions.
- j. The FDEP, in coordination with the SFWMD and local governments, should investigate whether certain activities lend themselves to the use of Best Management Practices as an alternative to agency permits.
- k. Federal, state, and where appropriate, local agencies should execute interagency agreements to create a team permitting process for all industries.

1 **E-2. CRITICAL INDUSTRIES IN THE REGION - INTERNATIONAL**
2 **TRADE**

3
4 All of the major economic sectors in South Florida--commercial, industrial, and
5 tourism--have established strong ties within the global economy. This
6 globalization of the region's economy is exemplified by an increasing diversity of
7 international trading partners. Traditionally, South Florida's trading partners have
8 been Central and South America, the Caribbean nations, and Mexico. Today,
9 Africa, Europe, and Canada are also substantial sources of trade (Soler, 1995).

10
11 Clearly, South Florida has taken its place among international centers of
12 commerce as the business capital for Latin America and beyond. Nearly 70
13 international banks have offices in Dade County alone. The strength of the
14 region's international trade lies in its geographic location, its transportation
15 facilities, the diversity of its culture, trading partners, products, and services (U.S.
16 Census, 1990).

17
18 An international business community had emerged in the region in the form of
19 more than 300 multinational companies by as early as 1960. More recently, South
20 Florida has established itself as a principal transshipment point for merchandise
21 produced throughout the United States, particularly for Latin American trade
22 partners (U.S. Census, 1990).

23
24 Economic growth in Florida has led to nearly 250,000 seaport related jobs and
25 \$600 million in government revenues statewide. South Florida is home to 4 major
26 ports: West Palm Beach, Everglades (at Ft. Lauderdale), Miami, and Key West.
27 In 1994, the first 3 facilities mentioned handled \$18.5 billion in imports and
28 exports. As trade facilitators, Florida's seaports are keystones in the multi-billion
29 dollar international trade industry that is now one of the state's largest. South
30 Florida ports are also responsible for large waves of vacationing public. Seaports
31 are an economic engine whose continued functioning depends on their ability to
32 grow in response to market and technological changes; as such, they have different
33 needs from other waterfront users (FDOC, 1994).

34
35 The region is also served by the fifth largest cargo airport in the world: Miami
36 International, which handled over \$13.6 billion in foreign trade last year. Tourism
37 and trade also depend on the ability of Florida's airports to attract goods and
38 passengers to the state. Airports are critically important to the region's economy.
39 Ninety seven percent of Dade County's overnight visitors arrive in South Florida
40 by air. In addition, the majority of fresh fruit, vegetable, and flower imports
41 arrive by air cargo.

42
43 Investments in the region's transportation infrastructure represent investment in
44 South Florida's future. In order to remain competitive and increase market share,
45 South Florida must improve the movement and intermodal transportation of cargo
46 and passengers. This requires long term planning focused on a cooperative
47 relationship among the region's seaports, airports, and transportation agencies. An
48 integrated, competitive intermodal transportation system is critical to the long-term

1 investment needs of the region. Clearly, this is an extremely costly endeavor.
2 Global competition demands large expenditures on infrastructure. Furthermore,
3 continued success as a center for international trade depends on the region's ability
4 to advocate its position on federal trade policies and firmly assert a leadership role
5 in the global marketplace.
6

7 The impact of the North American Free Trade Agreement (NAFTA) on the
8 competitiveness of domestic products is a critical issue for all of the region's
9 industries. Manufacturers, producers, processors, and shippers warn of unfair
10 advantages and a loss of their current competitive edge. They also express
11 concern for the future normalization of relations with Cuba, especially when that
12 country's products enter the same market arena. (FDOC, 1993)
13

14 It is important that South Florida begin to plan for the likely "opening" of Cuba.
15 That event will have significant effects on the region's economy. Geographic
16 proximity and strong cultural ties unavoidably link the two regions. The
17 normalization of relations with Cuba will probably generate greatly increased
18 economic activity between South Florida and that island nation. Initially, a
19 sizeable influx of Cubans into South Florida is likely. The Mariel Boatlift of 1980
20 can shed some light on the potential impact of this in-migration. Subsequently,
21 the opening of travel to Cuba for U.S. citizens will undoubtedly affect the region's
22 tourism. In conclusion, South Florida is in a favorable position to capture a
23 significant amount of future trade with Cuba.
24

25 The importance of international trade to a region is reflected by the number of
26 new jobs, business opportunities, and industry it attracts to the area. A value-
27 added dimension is therefore crucial to regional development. If the region
28 remains merely a point for transshipment of goods, then opportunities for
29 manufacturing, re-exporting, and other associated economic activities are minimal.
30 To prosper from international trade, South Florida must position itself to add value
31 to its imports and exports.
32

33 COMMISSION OBJECTIVE 34

- 35 • **Support and maintain South Florida as a center for international**
36 **tourism, trade, finance, and investment and increase the region's**
37 **share of goods and services produced for export.**
38

39 Recommendations: 40

- 41
42 65. FDOT should ensure that priority status is given to expansion of air and
43 seaport infrastructure development to adequately link these systems to
44 existing transportation facilities accommodating timely distribution of
45 goods and efficient movement of travelers.
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Action Step

- a. FDOT, key local governments, metropolitan planning organizations, airport and seaport authorities, and private sector interests should:
 - (1) develop an efficient connector between the port facilities and other transportation arteries. If successful, this intermodal system should connect the various transportation accommodations and completely modernize travel in this corridor;
 - (2) establish other quick, efficient connectors (perhaps high speed rail) between communities in South Florida and other important commercial and visitor centers in Florida;
 - (3) plan for the creation of Intermodal Commercial Centers within this overall transit system. These centers would be similar to commercial enterprises at Sawgrass Mills, Dadeland, and Downtown Miami; and
 - (4) inventory and identify airports, seaports, and other infrastructure for international trade and plan for their needs.

66. The Governor should convene an annual Regional Trading Summit with representation from Florida's trading partners. The Florida International Affairs Commission (convened by the Florida Legislature in 1992 to coordinate the state's international trade initiatives), the Florida Department of Commerce, and the Division of International Trade should coordinate this event in strong association with, and assistance from, local Tourism Development Councils, Convention Visitor Bureaus, and Economic Development Organizations.

Action Steps

- a. This international summit should be structured to strengthen the image of the entire region as a critical and competitive center for international trade.
- b. This summit will provide communication opportunities so existing trade efforts and information on established international groups are shared across the region.
- c. This summit should provide matching opportunities similar to those made available to businesses through trade missions. Space should be reserved for the export business community and international financiers to meet and begin negotiations with trading partners for future exporting business. Workshops on joint ventures, identification of trade representatives, and letters of credit should be made available to empower attendees interested in exporting.

1 Arrangements for future visits should be encouraged by individual
2 business owners.
3

- 4 d. To recognize the importance of international tourism to the region's
5 economy, this summit should have a comprehensive approach so
6 that international tourism interests also forge new partnerships
7 within the region. Opportunities and linkages between South
8 Florida tourism and travel business owners and those of various
9 invited countries should also be explored. An example of this is
10 the La Cumbre effort, previously established in Dade County.
11

- 12 67. The Governor should require the Florida International Affairs Commission,
13 the Florida Department of Commerce, the Governor's Office, the FDOT,
14 and the Department of Agriculture and Consumer Services to study and
15 report by December, 1996, on the impact of international occurrences (e.g.,
16 NAFTA and GATT trade agreements and "free Cuba") on the South
17 Florida economy.
18

19 Action Step

- 20
21 a. Based on the results of this research and these studies, the above
22 named groups should make recommendations to the Governor and
23 the Commission regarding the future competitiveness of the region's
24 economy.
25
26

27 **E-3. CRITICAL INDUSTRIES IN THE REGION - TOURISM**
28
29

30 The World Travel and Tourism Council (WTTC) reports that tourism became the
31 world's largest industry in 1992. Tourism accounted for 13% of the world's
32 consumer spending in 1993. The cover feature in a recent issue of WTTC's
33 Viewpoint Magazine was the importance of sustainable development for the
34 tourism industry. The article states that, "The extent to which travel and tourism
35 products depend on the natural and cultural environment for their perpetuation
36 highlights the fact that it is our duty to look after it. It is both morally right and
37 good business for the world's largest industry to lead in creating a greener globe.
38 Our survival depends on a healthy environment." (1995)
39

40 The U.S. Travel Data Center (aka Travel Industry Association, Inc.) (1994) reports
41 that nationally, travel and tourism generated \$416 billion in visitor expenditures
42 in 1994. It is the nation's leading service export, generating \$78 billion in
43 expenditures from international visitors in 1994 and creating a \$22 billion trade
44 surplus. The tourism industry, with 6.2 million direct jobs, is the nation's second
45 largest in terms of employment, behind health services. The industry generated
46 \$56 billion in tax revenue for federal, state, and local governments in 1994. The
47 travel industry ranks as one of the largest employers in South Florida.
48

1 Whether perceived or actual, historically, there is a notion that the service industry
2 provides low paying employment. According to the Travel Industry Association
3 of America (U.S. Travel Data Center), this notion was formed in the 1950s and
4 1960s when much of the nation's economy and employment centered around
5 manufacturing and production. Average hourly wages in the service sector have
6 increased 52.5% over the past 10 years. This is markedly higher than the 37.8%
7 increase in the hourly wage of all private employers. Contrary to popular
8 perceptions, high wage employment exists throughout the travel/tourism industry.
9 Executive and operations positions within the hospitality segment offer significant
10 salaries. The average hotel manager, for example, earns between \$37,000 and
11 \$83,000 per year (Cook, 1993).

12
13 In addition, small businesses dominate the travel-related industry. Thirty percent
14 of all franchise-owned businesses are with travel-related companies including
15 restaurants, auto rental firms, and hotel and motel chains. Approximately 20% of
16 all travel agents and 42% of food service and lodging managers are self-employed.
17 These figures are significantly higher than the 8.3% self-employment rate for all
18 occupations (Cook).

19
20 Around the world, South Florida is recognized for its naturally beautiful beaches,
21 year-round sunshine, unsurpassed attractions, and distinctive art-deco architecture.
22 Destination resorts, retailing markets, world class golf courses, cruise lines, water
23 sports, fishing, the Everglades, and other amenities attract over 16 million visitors
24 each year. The inherent beauty of South Florida's 2 National Parks attracted 2.2
25 million annual visitors prior to Hurricane Andrew. While recent visitor studies
26 show slight declines in the annual number of tourists coming to South Florida,
27 these reflect only temporary and external economic conditions (Florida Department
28 of Commerce).

29
30 Prosperity in tourism, however, is threatened by aggressive competition, image and
31 safety concerns, and the recent immigration crisis in South Florida. Because
32 tourism plays such a critical role in the region's economy, even modest decreases
33 in visitors and expenditures will be felt throughout the region. For every 1,000
34 international visitors lost, the state also loses \$1.1 million in tourism spending, 20
35 area jobs, and \$295,000 in local payrolls (Cook). While statistically there appears
36 to be growth in this industry, some distortion is evident in overall tourism growth
37 reports. More recently, crimes against international visitors have also dampened
38 demand. The damage inflicted to the Florida tourism industry by negative media
39 reports resulting from these tragic incidents is yet to be calculated. Most travel
40 bookings are completed in advance with large financial cancellation penalties. As
41 a result, occupancy rates for 1993-94 appear not to have been affected. Early
42 1994-95 data indicates declines in occupancy of up to 11% for some South Florida
43 destinations (U.S. DOC, Visitor Plan, 1995).

44
45 As an industry, tourism employs more than 700,000 people and generates over \$33
46 billion in taxable spending throughout the state. South Florida alone accounts for
47 nearly 35% of these jobs. As the premiere tourist destination in the United States
48 and one of the most popular in the world, the region must continually strive to

1 increase its market share. Escalating competitive pressures from other U.S. and
2 international destinations continually challenge the region's position among top
3 visitor vacation choices.
4

5 A relatively new area for the industry is the development of tourism in South
6 Florida's more rural communities. As background for the development of rural
7 tourism, it is important to recognize that new industries must be developed to
8 replace those that are receding and may no longer be competitive. Rural South
9 Floridians must be helped in their quest for new ways to make a living. It has
10 been found that non-metropolitan communities that depend on tourism, retirement,
11 and specialized government spending programs exhibit greater stability during
12 recessions than those that remained dependent on manufacturing (U.S. DOC, U.S.
13 TTA, 1993).
14

15 Tourism is a highly viable option for rural communities in South Florida. Its
16 growth and development depends on an area's cultural, historic, archeological,
17 ethnic, geographic, and natural milieu. South Florida's rural environments have
18 vast expanses of land and water and wide diversity in their forests, plains, lakes,
19 and grasslands that provide outstanding settings for leisure and recreation. In
20 addition to acting as a stimulus to rural economies, tourism has the capability to
21 preserve the environment in which it operates and provides an excellent
22 opportunity to identify and preserve historic and archeological resources (U.S.
23 DOC, U.S. TTA, 1993).
24

25 The national and international pleasure travel market is driven by the need to get
26 away for relaxation, adventure, sightseeing, shopping, visiting exotic and
27 entertaining attractions, and "avocational meetings." The business tourism market
28 is driven by conventions, planned meetings, commercial opportunities, and
29 industry conference needs. The ecotourism market is driven by interests in natural
30 areas and environmental assets. It is essential that South Florida remain in these
31 markets and continue future growth in all these areas (FDOC, 1994).
32

33 While the tourism industry in South Florida is very active in advertising its
34 attractions, accommodations, and other important trip information, it does very
35 little to promote its economic and social value to its citizens. Informing the public
36 about the value of the industry's contribution to the quality of life in South Florida
37 and its overall importance to job growth should be a priority. In order for the
38 media to play a key role in educating the public about the tourism industry, it
39 should be educated about visitor sensitivity and the social and economic effects
40 of positive and negative reporting.
41

42 COMMISSION OBJECTIVE 43

- 44 • **Increase the number of visitors to South Florida and the amount of**
45 **money they spend in the region. Promote the region's many**
46 **ecological, locational, and cultural advantages as a place to visit.**
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Recommendations:

68. The Governor should capitalize on the uniqueness of South Florida's sustainable initiative and the current ecotourism trend by instructing state agencies to promote it as the largest remedial environmental experiment in the world. The Executive Office of the Governor, FDEP, the U.S. Army Corps of Engineers, the SFWMD, the regional planning councils, and the Florida Department of Commerce, in conjunction with the Department of State, should help develop major media events connected to the environment and South Florida's restoration efforts in the Everglades, the Keys, and Biscayne and Everglades National Parks.

Action Steps

a. These media events are intended to leverage the region's natural assets as a foundation for value-added ecotourism, recreation, education, and economic development. The environment and the sustainable South Florida initiative should be used as a catalyst for long-term economic prosperity, particularly for rural communities. A good example is the fall Hoover Dike bike tour which has become a nationally recognized, highly publicized, and well attended ecotourism event.

b. This ecotourism and sustainable South Florida campaign should show that the environment has an exceptionally high economic pay-off through academic and industry involvement in the development of cutting edge remedial environmental technologies and techniques which can then be exported worldwide. Strategies should be developed to self-fund the management of lands involved in this initiative for the optimization of ecotourism and outdoor recreation through vendor and concessionaire licensing and other such means.

c. Students at all levels (K-12, technical schools, community colleges, and universities) should be integrated into this remedial environmental effort so they may become highly qualified in its technologies and recreational aspects and may pursue related careers locally or become employed by universities and industries exporting such expertise worldwide.

69. The Florida Department of Commerce, FDOT, local governments, tourism development councils, and convention and visitors bureaus should improve the visitor experience in South Florida, including enhanced transportation, personal safety, language, and ecotourism incentive programs.

1 Action Steps
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- 3 a. The Legislature should instruct the Department of Commerce and
4 localities to work with the Department of Education and local
5 school boards to promote multilingual fluency among visitor
6 industry employees and other service providers (e.g., retail,
7 restaurants). Affordable and accessible foreign language training
8 should be provided through schools and community colleges and
9 promoted to tourism-related businesses and companies.
10
- 11 b. The FDOT and localities should improve highway and directional
12 signage at airports, seaports, train stations, attractions, and retail
13 centers. Standard international symbols should be used on all
14 appropriate signage.
15
- 16 c. The Legislature should instruct the Department of Commerce and
17 localities to improve readability and multi-lingual instructions for
18 visitor maps and other printed information.
19
- 20 d. The Legislature should instruct the Department of Commerce and
21 other appropriate state and local agencies to encourage the
22 development of low-impact, ecotourism attractions and
23 accommodations through incentives.
24
- 25 e. The FDOT, local governments, key regional and local authorities,
26 and private sector interests should ensure that an efficient connector
27 between the region's airport and seaport facilities is planned and
28 developed.
29
- 30 f. The Legislature should encourage the establishment of interagency
31 visitor centers across transportation corridors in South Florida and
32 ensure that tourists are as aware of ecotourism experiences as other
33 more commercially promoted tourism attractions.
34

- 35 70. The Department of Commerce, the Florida Tourism Commission, and local
36 tourism groups should educate the public and the media on the economic
37 and quality of life impact of tourism, emphasizing the benefit to our
38 economy and environment from a strong tourism industry.
39

40 Action Steps
41

- 42 a. The Florida Department of Commerce and Florida Tourism
43 Commission should encourage hospitality toward tourists by
44 developing informative brochures for Florida residents describing
45 the economic benefit of a strong tourism industry. This effort
46 should also emphasize the critical environmental value of the
47 tourism industry.
48

- 1 b. The Department of Commerce and the Tourism Commission should
2 develop informative literature that helps instill a sense of pride in
3 South Floridians as hosts to the touring public.
- 4
- 5 c. During National Tourism Week, the Governor should hold a media
6 briefing on the economic impact of tourism and new tourism
7 initiatives.
- 8
- 9 d. Local tourism groups should encourage their school boards to
10 include a lesson on the economy of South Florida in their
11 curriculum to include tourism and other major economic sectors.
- 12
- 13

14 **E-4. CRITICAL INDUSTRIES IN THE REGION - AGRICULTURE**

15

16 Agriculture contributes billions of dollars to the state's economy. However, this
17 industry is facing economic as well as environmental challenges. Agricultural
18 acreage in Florida and across the nation has decreased as local, regional, and state
19 economies have grown and diversified. Between 1982 and 1992, the number of
20 acres designated as agricultural in South Florida have decreased from 12.8 million
21 acres to 10.7 million acres, a loss of 15.98% (U.S. DOC Census of Agriculture,
22 1984, 1994). In spite of this trend, this industry continues to demonstrate an
23 ability to adjust by shifting to international markets, specialty products, and
24 domestic niche marketing. Although climate and weather conditions impact
25 farming, agriculture is a sector of the economy that is less subject to recessions.
26 It also experiences fewer trend variations and is able to adapt to export
27 opportunities.

28

29 Agriculture remains an important source of jobs and income in South Florida. It
30 is also one of the region's overall leading industries which includes aquaculture,
31 citrus, sugar production, horticulture and turf grass, tropical fruits, ethnic
32 vegetables, milk production, poultry and eggs, and beef and other livestock.
33 Because of favorable weather conditions and abundant water supply, South Florida
34 has seen its agriculture industry flourish. More citrus is produced in this region
35 than in any other state. The region's counties produce nearly 70% of the nation's
36 winter and spring vegetables. South Florida is also home to sugar cane growers
37 and processors that supply a significant amount of North America's demand for
38 this commodity.

39

40 Although often forgotten or ignored, agricultural history includes major efforts at
41 natural resource stewardship. The first Best Management Practices (BMPs)
42 developed by the Soil Conservation Service of the United States Department of
43 Agriculture in the 1930s focused on techniques to deter damaging runoff. The
44 United States Department of Agriculture-Natural Resources Conservation Service
45 (USDA-NRCS) and the local Soil and Water Conservation Districts (SWCDs)
46 have been leaders in providing assistance to the agricultural community in South
47 Florida for 50 years. The USDA-NRCS and SWCDs have developed Best
48 Management Practices to address water quality/quantity, point and non-point

1 source pollution, agricultural runoff, crop management, and other issues. The
2 USDA-NRCS and SWCDs are the key agencies to assist agriculture in sustaining
3 farming, maintaining visible rural communities, and providing for a healthy natural
4 environment. Today, technology has significantly improved agriculture's BMPs,
5 substantially reducing the application of pesticides, fungicides, and fertilizers while
6 also conserving water. However, agricultural activities can lead to environmental
7 damage and reduction in soil productivity. BMPs encourage farmers to reduce the
8 adverse impacts of farming on the environment. By reducing reliance on
9 fertilizers, herbicides, and pesticides and adopting BMPs, farmers can help protect
10 valuable natural resources.

11
12 While the region's fresh products are critically important, their full economic
13 potential remains unrecognized and underutilized. BMPs can help add value to
14 the region's agricultural output, as consumer awareness and use of products that
15 are grown under environmentally sound conditions increase. Farmers' stewardship
16 expenses can be offset by marketing the value of crops produced under
17 environmentally sound growing practices. A uniform labeling of "green products"
18 could expand a niche market that is currently underutilized in the state.
19

20 Transforming development patterns within urban areas and designating open space
21 outside these areas for non-urban uses are tools for a sustainable community.
22 Designating lands in local government comprehensive plans for non-urban uses
23 preserves natural systems, continues land in agricultural production, buffers natural
24 systems from urban areas, and inhibits urban sprawl. Sprawl, and the associated
25 demands of urban dwellers, threaten the future viability of agricultural enterprises.
26 The loss or conversion of farmlands to urban development undermines the long
27 term existence of agriculture in South Florida. This is further complicated by the
28 lack of financial stability so characteristic in the agricultural industry, which
29 typically operates on narrow financial margins. Incentive programs that lead
30 developers and residents away from large tract purchasing practices can assist
31 farmers to stay in farm production even as the market value of their land increases
32 as a result of encroaching urbanization.
33

34 Voluntary incentive programs can also be effective in pollution prevention and
35 reduction associated with agriculture. For example, Florida has long been
36 concerned with leaking underground storage tanks because of their impact on
37 groundwater quality. When the state followed a regulatory approach to this
38 problem, approximately 500 storage tanks were subject to enforcement actions.
39 Since Florida shifted to a financial incentive approach (reimbursement programs)
40 to encourage compliance, owners of 20,000 tanks have volunteered to participate
41 in the program. Similarly, a voluntary compliance reporting program for
42 agriculture-related environmental contamination should be established. This would
43 improve the partnership between agricultural interests and environmental
44 regulators. The mechanism to accomplish this goal is available through the Farm-
45 A-Syst Program, which was developed for the state's farmers by the University of
46 Florida.
47
48

1
2 The needs of a sustainable farming economy, viable rural communities, and a
3 healthy natural environment must be balanced. For agriculture to be sustainable,
4 there must be a recognition that farming is part of a larger natural system, every
5 element of which is interconnected and interdependent. An ethic of stewardship
6 over agricultural lands and natural systems will result in rich soil, clean water,
7 clear air, diverse biological systems, and productive wildlife habitat.

8
9 Maintaining agricultural lands in agricultural production will only be possible if
10 farmers are able to make a profit living off the land. Economically viable farms
11 may support a network of economically diverse rural communities. These
12 communities, in turn, may provide the social, economic, physical, and cultural
13 environment needed to sustain agriculture (Minnesota, 1994). The Commission
14 recognizes that for the environment and the sustainability of natural systems, a
15 viable agricultural industry is preferable to other land-intensive economic
16 alternatives. The challenge facing the Commission is to develop policies which
17 reduce costs to the farmer, in terms of time and money; eliminate excessive
18 regulations and penalties; establish a consistent menu of management practices
19 from which each unique farming enterprise can choose; and ensure profitability
20 and fair market value.

21
22 In addition, agricultural operations are often subject to a variety of permits which
23 impose continuous high costs for the preparation of multiple, often times
24 nonsimultaneous, renewal applications. In many cases, these renewals do not
25 introduce any substantial changes from the original permit. Occasionally, when
26 permits become subject to renewal, agricultural operations are subject to pressure
27 from competing interests for other land uses. The current structure of regulatory
28 agencies impedes review of permit applications from an ecosystem management
29 perspective. Under the present system, opportunities for project implementation
30 which could yield a net environmental benefit are often missed. Furthermore,
31 unnecessary costs are incurred by the applicant. The development of a long-term
32 permitting process (i.e. 20 years) and the use of team permitting for an entire
33 agriculture operation could overcome these obstacles.

34
35 Although the permitting process is often routine and repetitive, it consumes much
36 of the manpower and funding of regulatory agencies. Creating comprehensive
37 BMPs to implement proper agricultural practices would reduce personnel and
38 financial costs. Rather than the current individual pre-review by agency staff, a
39 comprehensive program could be used to authorize small, routine, or repetitive
40 activities. Furthermore, activities meeting the pre-approved BMP criteria could
41 by-pass the routine permitting process. This would allow regulatory agencies to
42 focus more of their time on compliance rather than on issuance of individual
43 permits.

44
45 Finally, the Everglades Agricultural Area is among the most productive in the
46 world and the entire region is famous for its fresh products. For the region's
47 agricultural industry to continue to flourish, it must be environmentally and
48 economically sustainable. South Florida communities can continue to enjoy the

1 abundance, variety, and diversity of its agricultural sector by limiting
2 environmental impacts and creating additional economic returns.
3

4 **COMMISSION OBJECTIVES**
5

- 6 • **Sustain South Florida's agricultural industry and support rural and**
7 **farming economies.**
8
9 • **Acquire, protect, maintain, and provide open space outside of**
10 **designated urban development boundaries for agriculture.**
11

12
13 **Recommendations:**
14

- 15 71. The Florida Department of Agriculture and Consumer Services and the
16 Florida Department of Commerce should work to expand food production
17 and processing in South Florida to encourage value-added output, continue
18 to research new and efficient agricultural technologies, and continue to
19 strive for maximum quality and safe food supply.
20

21 **Action Step**
22

- 23 a. The Department of Agriculture and Consumer Services and the
24 Department of Commerce should prepare legislation recognizing
25 the importance of the region's agricultural industry and the need to
26 capitalize on this industry's economic value by creating incentives
27 that encourage new technology, new food processing and
28 production, and new related businesses within the agricultural
29 production areas.
30

- 31 72. The Florida Department of Agriculture and Consumer Services, the Florida
32 Department of Commerce, and FDEP, in conjunction with the USDA-
33 NRCS and SWCDs, should develop incentives targeting farming operations
34 that demonstrate environmentally sound land stewardship practices. These
35 incentives should enable agricultural concerns to compete effectively by
36 sending more environmentally acceptable products to markets within
37 Florida and around the world.
38

39 **Action Step**
40

- 41 a. By December 1996, the Legislature should instruct the Department
42 of Agriculture and Consumer Services, in conjunction with the
43 Natural Resources Conservation Service and the Institute of Food
44 and Agricultural Services at the University of Florida, to assist the
45 agriculture community in adding value to their products by
46 establishing a uniform green labeling program. This program

1 should be designed to identify all products (fruits, vegetables, eggs,
2 etc.) produced under environmentally sound practices. A "uniform
3 green labeling program" will help mitigate the added cost of
4 growing this kind of product.
5

- 6 73. Provide funding and other incentives to retain sustainable agricultural lands
7 in agricultural production, to the extent such agricultural activities do not
8 cause the Everglades ecosystem to function in an unsustainable fashion.
9

10 Action Steps

- 11
- 12 a. The FDEP, in coordination with the SFWMD and appropriate
13 federal agencies, should develop a long-term (20-year) permitting
14 process, subject to 5-year evaluations, for new farm development
15 and/or existing facilities which demonstrate good land stewardship.
16
- 17 b. Federal, state, regional, and local agencies should identify activities
18 requiring permits and execute an interagency agreement to create
19 a team permitting process to expedite and improve agricultural
20 permitting.
21
- 22 c. The FDEP, in coordination with the SFWMD and the Natural
23 Resources Conservation Service, should encourage the use of
24 BMPs based on sound environmental and sustainability principles
25 as a means of authorizing small, routine, or repetitive activities
26 which do not require individual pre-review by agency staff.
27
- 28 d. The DCA, in conjunction with the Departments of Environmental
29 Protection and Agriculture and Consumer Services, should develop
30 a 1996 Legislative proposal for a state financial assistance program
31 to support a purchase, transfer, and/or lease of development rights
32 program for agricultural lands based on voluntary participation.
33
- 34 e. The DCA, USDA-NRCS, and local SWCDs should encourage local
35 governments to establish transfer of development rights and
36 purchase of development rights programs for agricultural lands.
37 Because this technique is not generally understood or widely used,
38 the DCA should provide technical assistance workshops for local
39 governments and land owners on the benefits of this strategy for
40 preserving agricultural lands.
41
- 42 f. The Legislature should encourage the use of less than fee simple
43 acquisition techniques for preserving agricultural lands. This
44 technique is especially worthwhile for lands adjacent to existing
45 public lands, Conservation and Recreation Lands (CARL) projects,
46 and where agricultural lands can safely provide a buffer between
47 environmentally sensitive areas and potential development sites.
48

1 74. The Florida Legislature and the SFWMD should continue to fund the
2 Institute of Food and Agricultural Sciences (IFAS) at the University of
3 Florida to encourage research and development directed at achieving
4 sustainable agricultural systems and greater value added marketing
5 opportunities. This research should:

- 6
7 (a) describe the impact of agriculture and encourage Best
8 Management Practices that minimize adverse environmental
9 impacts; and
10 (b) adequately communicate to the public and the agriculture
11 industry the availability of these IFAS research programs.
12

13 Action Steps

- 14
15 a. The University of Florida - (IFAS) should devise a plan for
16 research that would help farmers evolve to sustainable agricultural
17 systems. The plan should identify specific long-term approaches
18 that would have positive basinwide effects. IFAS should then
19 disseminate its findings through its extension offices and other
20 appropriate avenues.
21
22 b. IFAS should submit a funding request for this purpose to the 1996
23 Legislature.
24
25 c. IFAS should seek to capitalize on the interconnections,
26 interdependencies, and symbiotic relationships of agricultural and
27 natural systems. The IFAS funding should promote projects that
28 seek to maintain or improve farm and rural community income
29 while producing a safe food supply, improving water quality, and
30 controlling soil depletion.
31

32 75. State and federal regulations with regard to farmworker housing should be
33 reviewed with an eye to streamlining the construction approval process and
34 implementing incentives to allow these facilities to be constructed in an
35 expedient manner.
36

37 Action Steps

- 38
39 a. The Commission recommends that the state's Congressional
40 delegation be requested to introduce legislation allowing for
41 accelerated depreciation of facilities constructed specifically for use
42 by migrant agricultural labor as a way to bring private enterprises
43 to the table in place of previous public efforts that have failed.
44
45 b. The DCA, in conjunction with the Departments of Commerce,
46 Health and Rehabilitative Services, and Agriculture and Consumer
47 Services, the Southwest and Central Florida Regional Planning
48 Councils, the Affordable Housing Study Commission, the

1
2
3

agricultural industry, local governments, and applicable nonprofit housing organizations, should, during 1996, examine the housing problems impacting farmworkers within the region.

1 **F. IMPROVE QUALITY OF LIFE**

2
3 In addition to meeting the future needs of the region in terms of water
4 management, environmental protection, better urban form, and economic
5 prosperity, other key societal areas must improve to achieve a lasting and
6 sustainable South Florida. These areas include education, housing, health care,
7 safety, and recreational opportunities.

8
9 **COMMISSION OBJECTIVES**

- 10
- 11 • **Create an integrated and lifelong education system, compatible with**
 - 12 **the principles of Blueprint 2000, that addresses business, research**
 - 13 **and development, and global market needs.**
 - 14
 - 15 • **Invest in the school system and physically site schools to promote**
 - 16 **sustainable development patterns.**
 - 17
 - 18 • **Meet South Florida's housing needs.**
 - 19
 - 20 • **Create open, accessible health delivery systems at the state and**
 - 21 **national levels.**
 - 22
 - 23 • **Create safe communities in South Florida.**
 - 24
 - 25 • **Create an array of cultural and recreational choices that are**
 - 26 **affordable and accessible to all.**
- 27
28
29

30 **F-1. IMPROVED AND ACCESSIBLE EDUCATION**

31
32 Employment opportunities and high wage jobs are of primary importance to the
33 well being of the region's residents. Economic stability and growth are critical
34 components of a community's quality of life. Before a community can become
35 sustainable, the standard of living must reflect the ability to earn a reasonably high
36 wage with access to opportunities for economic improvement. The opportunity
37 for opening these critical doors to the future lies with education, training, and
38 retraining initiatives (e.g., Florida Department of Labor's Workforce 2000)
39 (Hudson Institute, 1990).

40
41 Education and training are critical for employment and earning power and have
42 become the primary means for Floridians to add value to their quality of life.
43 Skill requirements, even for traditionally low-paying occupations, have risen
44 substantially. Opportunities for individuals without strong skills or education are
45 increasingly limited.

1 As more technological advances are introduced into the economy, workers need
2 to adapt to maintain their earning power. As the region's business and industrial
3 structure continues to change, so does its occupational mix. Advanced production
4 techniques and value-added processes result in the need to continually educate and
5 retrain the region's workforce.

6
7 Each year Florida's universities educate more than 200,000 students, grant nearly
8 40,000 degrees, conduct more than \$750 million in research sponsored by private
9 enterprise and government, and raise millions of dollars in private donations.
10 Florida's community college and university system fuels economic growth. While
11 these figures are impressive, public and private universities combined rank only
12 45th in the nation in baccalaureate degrees granted.

13
14 South Florida students' test scores remain below the national average. The
15 region's dropout rate for 1994 was approximately 9%, nearly 3.5% more than the
16 state as a whole (Jameson, 1994). Functional illiteracy among adults in the region
17 is approximately 25% with nearly half of these individuals residing in the region's
18 rural counties. The U.S. Department of Labor reports that functionally illiterate
19 persons earn 48% less than individuals with a high school diploma.
20 Undereducated individuals are also more likely to resort to crime, welfare, and
21 other public support systems.

22
23 Over the past 25 years the education budget, including public schools, community
24 colleges, and universities, received over 60% of state taxes. In 1989, education's
25 share dropped to 57% and in the 1995-1996 state budget, it further declined to
26 49%. Social services and corrections combined now claim 42% of general
27 revenue appropriations. These declines in education have occurred despite the
28 region's rapid population growth, including significant immigration increases.

29
30 South Florida is characterized by a diversity of people and cultures. Members of
31 diverse ethnic, racial, and cultural groups struggle to become stakeholders in the
32 region's economy, to own and control productive resources, and to continue their
33 cultural legacies for future generations. For some, assimilation into the
34 mainstream economy has already occurred. For others, self-sufficiency and
35 economic prosperity remain elusive. More resources must be invested in public
36 education to achieve sustainability within local communities and to successfully
37 arm South Florida citizens to compete in the local and global economy. Practical
38 vocational training and retraining are also critical for residents to better respond
39 to shifting industry needs. Furthermore, efforts to upgrade the public education
40 system should address the ethnic, racial, and cultural diversity of the region.

41
42 The siting of schools is also important to community quality of life. Schools are
43 typically sited in response to local government land use plans and projected
44 development patterns. Unfortunately, given the region's sprawling suburban
45 development patterns, many schools in South Florida are being sited in locations
46 that reinforce sprawl rather than weaken it because of the growth patterns being
47 permitted by local governments, especially by counties in their unincorporated
48 areas. It should be noted that Dade County Public Schools have a commendable

1 policy of not building schools within one mile of Dade County's urban
2 development boundary to reduce the inducement effect new schools built on the
3 urban fringe pose for residential development. These and even more aggressive
4 efforts should be continued in Dade County and undertaken by other school
5 districts throughout the region to avoid reinforcing suburban sprawl. Presently
6 there is an enormous unmet need for additional schools, particularly in urban areas
7 within Dade, Broward, and Palm Beach counties. Before building more facilities
8 on the urban fringe, school construction and renovation should be prioritized to
9 first meet the needs of students within existing urban areas. This policy could be
10 a significant stimulus for infill development and redevelopment.
11

12 In addition, vigorous efforts are needed to overcome the serious education-related
13 funding shortfall facing the region. While funding levels are completely
14 inadequate, other innovations regarding school siting that bode well for better
15 urban form are fortunately on the horizon. For instance, many local governments
16 in the region are considering a closer link between decisions concerning the
17 availability of adequate public school capacity and land use decisions. Examples
18 of such efforts include establishing a form of school concurrency and adopting
19 public education elements. Other innovative school siting techniques are being
20 designed to promote compact, yet desirable urban neighborhoods. These include
21 modifying the state's uniform building code to allow for schools that are more
22 compatible with inner city land constraints and building primary centers (separate
23 educational facilities for only kindergarten and first grade students) to relieve
24 elementary school overcrowding. Some primary centers serving kindergarten and
25 first grade classes are being proposed in Dade and Broward counties and will be
26 developed within existing office or commercial buildings, often in partnership with
27 developers.
28

29 Recommendations:

- 30
- 31 76. The Governor and Legislature should reverse the trend in education
32 funding during the 1996 Legislative Session by increasing the resources
33 and revenue dedicated to the entire education and training continuum.
34 This increased funding initiative should be based on accountability
35 measures and reports prepared by individual school boards and the
36 Department of Education indicating improved scholastic standing across
37 the K-12 education continuum.
38

39 Action Steps

- 40
- 41 a. The Legislature should provide increased funding and funding
42 authority, both in PECO funds and local millage assessment
43 authority, to county school boards to give them the funds necessary
44 to build the facilities needed to meet Florida's current and expected
45 student growth.
46
- 47 b. The Commission believes that the Blue Print 2000 Initiative should
48 be embraced and sufficient revenue raised to implement these

1 educational strategies and standards. To accomplish this end, the
2 Governor and Legislature should cooperate to revise Florida's tax
3 structure so that it is capable of providing the revenues needed to
4 meet Florida's current and future infrastructure needs. During the
5 1996 Legislative session, the Governor and Legislature should give
6 serious consideration to Florida's taxing system including tax equity
7 and reform measures for education. Further, all education
8 appropriations should be required to identify federal matching funds
9 and maximize their use.

- 10
11 c. Accountability measures and future benchmarks showing improved
12 scholastic abilities in the K-12 education continuum should be
13 essential criteria to qualifying school districts for increases in
14 education funding.

- 15
16
17 77. Cities, counties, and school boards, with assistance from DCA and the
18 Department of Education, should work together to coordinate school siting
19 and land use decisions to assure that such decisions help curtail urban
20 sprawl and give first priority to school needs in urban core areas.

21
22 Action Steps

- 23
24 a. Counties, cities, and school boards should work together to fully
25 implement the provisions of CS/HB 1797 as enacted by the 1995
26 Legislature. In so doing, they should improve their
27 communication, cooperation, and better integrate land use planning
28 and public school siting.
- 29
30 b. County school boards should give priority to improving schools
31 within urban areas to attract additional housing and make urban
32 neighborhoods more desirable.
- 33
34 c. School boards, local governments, and developers should reduce
35 school size by building more neighborhood schools and primary
36 centers.
- 37
38 d. Expand multi-use of school facilities, as community centers, "age-
39 less" recreational facilities, and school bus/transit links, where
40 properly funded and feasible.

- 41
42 78. The Department of Education and local school boards should establish
43 strong partnerships with business and industry leaders and increase the
44 number of internships, mentoring programs, and other community and
45 corporate support as a means of diminishing economic and social
46 disparities.

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Action Steps

- a. Local school boards should form resource and fund raising groups that include public leaders, local educators, and parents. The sole purpose for these groups will be to generate additional school resources through in-kind or cash contributions and adopt-a-school programs.
- b. Local school boards should continue to experiment with schools of choice, and other innovative, competitive school programs including magnet schools and school in the workplace concepts throughout the region. These and all other education programs should guard against the creation of further disparities among schools across the region.
- c. The Department of Education, Private Industry Councils, the Department of Labor, and local school boards should expand the availability of career information and training opportunities to all students in disciplines that are tied to the region's workforce needs.
- d. The Department of Education should provide training for public school teachers on technical programs, international trade careers, regional business, and industry labor and workforce needs so they may better respond to student inquiries for career guidance and workforce opportunities.
- e. South Florida schools from K-12 and all advanced college and university level programs should broaden foreign language training to meet the growing international needs of the region.

79. Enterprise Florida, the Florida Department of Commerce, The Department of Labor and Employment Security, and the Florida Department of Education should jointly prepare legislation and increase the availability of retraining opportunities for South Florida workers currently employed in declining or low wage industries.

Action Step

- a. Enterprise Florida, the Florida Department of Commerce, the Department of Labor and Employment Security, and the Florida Department of Education should submit legislation for consideration by the 1996 Legislature that funds performance-based training programs at a level that allows retraining throughout an individual's career. This performance-based training initiative should be integrated with other workforce training, including the private industry councils and area vocational programs, and focused on high wage employment opportunities. Funding for performance-

1 based training should be tied to workforce placement accountability
2 measures.

- 3
4 80. The Board of Regents, the Legislature, and community college governing
5 boards should ensure that enrollment opportunities are significantly
6 expanded at all South Florida community colleges and universities.

7
8 Action Steps

- 9
10 a. The Department of Education, the Board of Regents, and Florida's
11 Community College Network should increase the percentage of
12 South Florida's high school students admitted to the community
13 college and university system by embracing the Blueprint 2000
14 strategies designed to support a full education continuum.
15
16 b. The Department of Education and Florida's Community College
17 Network should provide open door policies through remedial
18 programs for students who would otherwise not meet entrance
19 standards for community colleges.
20
21 81. In tenure and promotion procedures for university professors, the Board of
22 Regents should give added consideration to university staff and professors
23 who have become more involved within their individual communities so
24 that university expertise and research will have a more immediate and
25 practical local application.

26
27 Action Step

- 28
29 a. Community outreach programs should be implemented in 1996 in
30 each South Florida community where a Florida university is
31 located.

32
33
34 **F-2. MEET SOUTH FLORIDA'S HOUSING NEEDS**

35
36 The major housing issue facing South Florida is the current and projected
37 inadequate supply of affordable housing. While cost overburden can affect all
38 income groups, it more seriously affects households with below-median incomes.
39 In the period between 1980 and 1994, the number of households in the 16 counties
40 comprising South Florida grew from 1.8 million to 2.64 million. This represents
41 a rate of increase of 46.6% over a 14-year period. By 2010, the number is
42 projected to reach 3.5 million, an average annual increase of 53,750 households
43 (Wolff Economic Research, 1994a).

44
45 The 1990 U.S. Census of the Population and Housing reports that the 1989 annual
46 median household income for the 16 county region was \$27,370, just slightly
47 below the statewide median income of \$27,483 (BEBR, 1994). Extrapolating from
48 statewide figures, 22% of households were categorized as very low income in

1 1989, meaning their incomes were below 50% of the median household income.
2 Of this group, 66% paid more than 30% of their incomes for housing.
3

4 Renters experience overburdening costs even more frequently than do
5 homeowners. Almost 60% of all households earning below 80% of median
6 income (households categorized as low income) are renters. Based on 1990
7 proportions of the income groups in the population, approximately 1.65 million
8 households will be categorized as low income by the year 2010 in South Florida.
9 Almost half (782,893) of these households will be categorized as very low income
10 (below 50% of median income). If housing trends continue, South Florida will
11 have a housing affordability problem of considerable severity. The following
12 paragraphs highlight some estimates concerning household growth, housing unit
13 production, and the unmet need for affordable rental and ownership housing to
14 illustrate the extent of this potential problem.
15

16 **Housing Supply.** -- The housing inventory in the 16 counties comprising the South
17 Florida region grew from 2.14 million units in 1980 to 3.18 million in 1994, an
18 increase of 48.5%. It is forecasted that a total of 4.19 million housing units will
19 exist in the year 2010 (Wolff Economic Research, 1994a). Of these units,
20 however, an insufficient number is projected to be available or affordable to very
21 low, low, and moderate income households (households with incomes below 50%,
22 80%, and 95% of median income respectively).
23

24 **Need for Affordable Rental Housing.** -- According to a 1994 market study of the
25 need for affordable rental housing in Florida conducted for the Florida Housing
26 Finance Agency, the shortage of rental housing affordable to households in the
27 region with low incomes in 1989 (below 80% of the median income) was 131,822
28 units, and vacancy rates were a minuscule 2.2%. Trends in population growth for
29 this income category demonstrate a need for an additional 109,733 rental units in
30 the region by the year 2010. Although the authors believe that their forecast
31 understates need, their figures still reflect an annual increase in market need of at
32 least 6,858 units. The study also indicates that 65.3% of this need is found in the
33 region's 3 most populated counties of Dade, Broward, and Palm Beach (Wolff
34 Economic Research, 1994a).
35

36 **Need for Affordable Ownership Housing.** -- A second 1994 market study surveyed
37 the shortage of ownership housing in Florida. The vacancy rate for housing
38 affordable to moderate income households (below 95% of median income) was
39 only 3%. In 1994, the unmet demand for low and moderate income ownership
40 housing in the region was estimated to be 119,513 units. This shortage in the
41 region is expected to grow by an average annual increase of 18,066 units,
42 generating a total unmet demand of 408,568 units by the year 2010 (Wolff
43 Economic Research, 1994b).
44

45 **Housing Populations With Special Needs.** -- Increasingly, communities in Florida
46 are realizing the importance of developing integrated plans for the housing, care,
47 and mobility of people with special needs, such as the elderly, the very poor, the
48 homeless, the physically and mentally disabled, and migrant and seasonal

1 farmworkers. The State has a commitment to ensure that decent and affordable
2 housing is available to all residents, including special needs populations. Local
3 governments, in partnership with the private sector (including private nonprofit
4 agencies), must identify needs for affordable housing and related services among
5 these populations. Furthermore, they must develop and implement strategies to
6 meet those needs. The Affordable Housing Study Commission, in its 1994 Annual
7 Report to the Governor and Legislature, cites Florida's growing population of
8 elderly and homeless as 2 issues that demand the state's immediate attention
9 (AHSC, 1994).

10
11 **Addressing Affordable Housing Needs Through Land Development Regulations**
12 **and Policies.** -- At the state and regional level, plans provide local governments
13 with policy guidance for addressing affordable housing needs, and programs
14 provide financial and technical assistance in meeting local needs. Also, the state
15 will undertake an affordable housing needs assessment for each local government
16 to assist county and municipal governments in addressing housing needs in their
17 planning efforts. Hopefully, the availability of these assessments will assist local
18 governments in planning for and providing affordable housing to meet the
19 demands of the future.

20
21 **Addressing Affordable Housing Needs Through Regulatory Reform.** -- Florida
22 vests authority to issue development orders and building permits in county and
23 municipal governments. This means that local governments must perform most of
24 the work to reduce regulatory barriers that preclude or discourage the production
25 of affordable housing. Reducing regulatory barriers, however, is also of concern
26 to other levels of state government. State and regional regulatory agencies should
27 routinely review their regulatory procedures and adjust or eliminate them as
28 appropriate.

29
30 Public and private sector housing professionals have long recognized the
31 relationship between land development regulations and the affordability of
32 housing. While land development regulations clearly perform a valid role,
33 unnecessary additional costs are sometimes attached to development as a means
34 to discourage construction of lower cost housing. If the housing needs of very
35 low income Floridians are to be met in all jurisdictions, there must be a proper
36 balance between aesthetic and community character issues on one hand and
37 affordability on the other. Research in this area points to 3 basic ways in which
38 local land use regulations may impact housing costs.

- 39
40 1. **Restrictions on Housing Supply by Density, Use, or Type.** This is
41 the most pervasive way in which regulations can negatively affect
42 the supply of affordable housing. These measures contribute to
43 housing costs by limiting the number or type of housing units that
44 may be built on a given unit of land. The ways in which
45 regulations limit development rights include, among others:

- 46
47 • requiring large lot size, large side yards, or setbacks;
48 • requiring minimum house sizes;

- restrictions on housing type (e.g., little or no multi-family);
- prohibitions/restriction on manufactured housing;
- prohibition of accessory units; and
- prohibition of single room occupancy units.

2. **Design, Review, and Construction Costs.** This category is the most straightforward way in which regulations add to housing costs. Under this category, costs are added to a housing unit by standards that must be met in the design, review, or construction of a housing unit. Examples include:

- building code standards;
- environmental regulation (e.g., wetland protection, endangered and threatened species protection, etc.);
- labor costs;
- subdivision regulations--subdivision "gold-plating;"
- historic preservation; and
- impact study costs.

3. **Procedural Delay.** Administration is the third major way in which regulations can add to the cost of housing, typically by adding time to the overall development review process. The longer the delays, the greater the costs that may be incurred by the developer in bank interest and other charges.

The consequences of these 3 factors--which are, in large part, under the control of local governments--on land use patterns and affordable housing are evident in a variety of ways. One of these is their influence on relative location and balance of housing units with job opportunities. This is strongly linked, in many jurisdictions, with the geographic segregation of residences along socioeconomic lines. Land use and land development regulations often work to make the construction of moderately priced homes in certain locales difficult at best, principally by restricting housing by density, use, or type. The restriction of supply through land use controls can, in the face of strong demand, cause the market to react with increased land costs and higher housing prices.

These kinds of land use patterns have other negative effects, including higher transportation costs in terms of time and money for workers facing long commutes, greater energy consumption due to longer commutes resulting in increased air pollution, isolation of inner city residents and others without automobiles from new employment opportunities, increases in traffic congestion, urban or downtown deterioration through suburban job creation, and artificial inflation of the value of housing located near employment centers. In addition, the necessity for long commutes contributes to society-wide problems, such as increased levels of unemployment among the poor, minorities, single-parent families, or other lower income special needs groups.

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Recommendations:

82. Local governments, nonprofit and for-profit organizations, and the Florida Housing Finance Agency should increase the number of housing units made available to very low and low income households in South Florida through public and private efforts, giving emphasis to providing units affordable to households with very low incomes.

Action Steps

- a. In their Evaluation and Appraisal Reports and implementing amendments to their comprehensive plans and land development regulations, counties and cities should consider the cost advantage of reuse of suitable structures for affordable housing and the rehabilitation of existing substandard housing in their local government comprehensive plans and redevelopment plans.
- b. The Department of Health and Rehabilitative Services, DCA, and local governments should address the housing requirements and accessibility concerns of special needs populations through programs that integrate housing and care-related needs in support of independent living.
- c. The Department of Health and Rehabilitative Services, DCA, the agricultural community, and local governments should accommodate the needs of migrant farmworkers and other farmworkers when developing affordable housing programs and plans.
- d. The Department of Health and Rehabilitative Services should provide opportunities for all very low and low income households to break the cycle of poverty by participating in family self-sufficiency programs.
- e. The Legislature, appropriate state agencies, local governments, the public, and the private sector should continue to support, both programmatically and financially, nonprofit community and housing organizations such as the Local Initiatives Support Corporation and Community Development Corporations.

83. By 1997, state and regional agencies and local governments should reduce or eliminate land use planning and regulatory requirements that add to the cost of housing when this can be accomplished without compromising the protection of the environment or public health, safety, and welfare.

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Action Steps

- a. State and regional agencies should review existing and proposed regulations to assess their impact on affordable housing by the end of 1996 and eliminate or modify any unnecessary regulations.
- b. Local governments participating in the State Housing Initiatives Partnership program should continually monitor the impact of land development regulations and policies on the cost of housing and adopt and implement meaningful regulatory reform measures in their comprehensive plans and land development codes.

84. Encourage production of affordable housing through state, regional, and local land use planning efforts.

Action Step

- a. In their Evaluation and Appraisal Reports and implementing amendments to their comprehensive plans and land development regulations, counties and cities should:
 - (1) Identify adequate areas for very low, low, and moderate income housing in their local comprehensive plans and implementing land development regulations. To reduce costs, zoning for these areas should not require large lot sizes, large side yards or setbacks, minimum house sizes, or include any unnecessary restrictions on housing type;
 - (2) Integrate affordable housing with multi-use projects by providing for a mix of densities and a mix of housing types, including single room occupancy facilities, accessory apartments, and assisted living facilities and working to achieve mixed income neighborhoods and communities; and
 - (3) Predesignate appropriate infill sites for higher density residential development and direct affordable housing activity to those areas, thereby avoiding local project-specific zoning, expediting permitting, increasing predictability, and promoting urban infill.

F-3. COMMUNITY HEALTH CARE AND THE REGION'S ELDERS

Health care access, costs, and quality are critical issues that many South Floridians face each day. Without basic health care access, attempts to solve other community problems are complicated and undermined. For a family of 4, 100% of the 1994 poverty level equates to an annual income of \$14,800. If such a family purchased health care insurance, it would require 32% of the household's income.

1 South Florida has one of the nation's largest uninsured populations. A full 2.7
2 million of those under the age of 65 are uninsured and one-third of this group are
3 children. Characteristics of the region's business community contribute to this
4 uninsured rate. Large firms are more likely to offer health insurance benefits than
5 small firms. However, more than 90% of the region's businesses employ fewer
6 than 20 people, and these smaller firms are less likely to be able to afford to offer
7 health benefits to their employees (U.S. DOC, Business Patterns, 1993).

8
9 Health care statistics also include the staggering "Health Care Monster" described
10 by Fishkind (1995), which has seen medicaid expenditures rise by 75% between
11 1990 and 1993. Florida's large elderly population gives rise to giant flows of
12 medicare payments to Florida's health care providers. In 1993, \$11.7 billion in
13 medicare payments were made in Florida. Since medicare does not approve 100%
14 of the costs, these get shifted to public coffers. This is problematic in Florida
15 where 19.7% of the population lacks health insurance. Health care is one of
16 Florida's fastest growing budget components. It has been predicted that in 1995
17 alone, the medicaid costs borne by the state will rise approximately \$150 million,
18 consuming 25% of the state's revenues (Scott, 1995). Scott also finds it sadly
19 perverse that, while the nation as a whole enjoyed its best overall economic
20 performance in 1994, the Florida legislative budget process in Tallahassee was
21 dominated by massive funding cuts. If such cuts are required during good times,
22 what will happen to the state during periods of recession? In addition, the region's
23 elder population requiring Medicaid nursing home expenditures is steadily
24 increasing.

25
26 South Florida will also continue to have a larger proportion of minorities and
27 immigrants whose overall health status is documented as poorer and who have a
28 higher incidence of communicable diseases. Clearly, the region's unique
29 population characteristics create special health care needs that require creative
30 solutions and money saving approaches. Private insurance reforms based on risk
31 adjustments with "portable" benefits, market based health care purchasing
32 alliances, and managed care systems are a few of the innovative programs already
33 taking hold in the region. Rural health care needs also differ from those in the
34 urban sector. Frequently, health care networks, cooperative arrangements, and
35 financial agreements are required for providers to continue to offer services in
36 rural areas.

37
38 Finally, adequately addressing the region's health care needs, particularly as baby
39 boomers enter their 50's and 60's, will be essential to help sustain healthy South
40 Florida communities. The Commission also clearly recognizes that health care
41 issues are a national concern requiring strategies that are beyond its purview.

42
43 Recommendation:

44
45 85. The Commission supports all statewide, regional, and local efforts to
46 provide a continuum of health care services across all Florida communities
47 emphasizing prevention for families most at risk. The programs under the
48 Agency for Health Care Administration should continue to introduce and

1 expand competitive systems and other market incentives into the cost
2 effective delivery of health care services in South Florida and throughout
3 our state.

4
5 **Action Steps**

- 6
7 a. These programs should increase the availability and accessibility of
8 alcohol abuse, drug abuse, and mental health services for area
9 residents and increase the availability of early identification,
10 intervention, and evaluation services for the region's children at risk
11 of developmental delay.
12
13 b. Health care service providers and insurers should replicate the
14 example of cost effective health care coverage developed by the
15 Florida Chamber and independent local chambers for small
16 business wherever possible.
17
18 c. As a means of reducing the serious financial Medicaid impacts of
19 South Florida's aging population, specialized housing programs
20 should be supported by the Legislature and designed to keep elders
21 at home or in independent living arrangements.
22
23 d. The Agency for Health Care Administration should continue to
24 investigate the application of medicaid waivers for the development
25 of elder housing communities.
26
27

28 **F-4. SAFETY**

29
30 Florida has the fourth largest prison population in the nation. More people per
31 capita are incarcerated in Florida than in all but 10 other states. The average
32 length of a prison term in Florida is more than 31 months (FDLES, 1994).
33

34 Issues and concerns regarding crime rates, the criminal justice system, juvenile
35 crime, sentencing processes, and methods of incarceration remain numerous and
36 extremely complex. While it is important to ensure the safety and welfare of the
37 public, many criminal justice and safety issues remain beyond the reach of this
38 Commission. Clearly, the future belongs to South Florida's children. Crime
39 prevention through education, timely juvenile offender information, and
40 community programs focused on reintegration are particularly critical if we are to
41 build safe and sustainable communities. Furthermore, without an adequate level
42 of public safety, private enterprise will not find South Florida a viable place to do
43 business.
44

45 The crime rate is a symptom of how healthy our communities are. It also
46 indicates how safe citizens can be in their homes and on the streets and what
47 amount of a community's resources must be spent on the impacts of criminal
48 behavior. While the overall crime rate in the region is down, juvenile arrests are

1 increasing. For the most part, these arrests are for violent crimes including
2 murder, aggravated assaults, and forcible rape.
3

4 Crimes committed by juveniles aged 10-17 have increased by 7.5% annually since
5 1984. Unless these trends are curbed, the number of reported delinquency cases
6 will grow from 127,275 cases per year in 1991, to over 180,000 in 1996. More
7 distressing however, is the seriousness of the crimes with which these children are
8 charged. Between 1982 and 1992, felony drug cases grew more than 540%;
9 murder and manslaughter rose by 151%, concealed firearms incidence was up
10 286%, and auto theft jumped 305% (FDOJJ, 1994).
11

12 Area juveniles are not only committing more crimes, they are also more often
13 victims of crime. In most cases children victimize children. In large measure,
14 substance abuse is considered, by most criminal justice practitioners, to be the
15 most significant factor contributing to juvenile crime in area communities. In all,
16 juvenile crime tells us the future direction which our communities are taking.
17

18 When crime becomes prevalent in a community or region, it has an overriding
19 negative effect on all aspects of life in terms of wasted resources and community
20 spirit. Health care costs are directly affected. Communities are caught in a
21 vicious cycle: neighborhoods are perceived as too dangerous and abandoned;
22 educational opportunities diminish; job options disappear; residents, especially the
23 young, lose faith in the future; and criminal activity increases. Unless this cycle
24 is broken, the number of youthful offenders and delinquency cases will only grow.
25

26 Statistics indicate that high school graduates commit fewer crimes than dropouts.
27 Primary prevention programs are the up-front gatekeepers of the juvenile justice
28 system. These efforts emphasize strategies that invest in children's futures in order
29 to save community resources. Community-based collaborative efforts involve
30 constructive processes that promote personal and social growth. These strategies
31 aim to inhibit and reduce physical, mental, emotional, and social impairment. This
32 promotes the health of the community as well as the individual (FDOJJ, 1995).
33

34 Recommendations:

35
36 86. The Governor, the Department of Corrections, the Juvenile Justice
37 Department, local school boards, and local offender programs should do
38 all that is necessary to ensure that the focus for criminal justice is firmly
39 established in a two-fold approach involving:
40

- 41 (a) secure detention with basic education and counselling for serious
42 crimes and repeat offenders; and
- 43 (b) prevention, diversion, and intervention programs. Greater
44 commitment and funding for education, training, and access to
45 employment opportunities as a means of preventing and eliminating
46 criminal behavior in youthful offenders is essential.
47
48

1 Action Steps

2
3 a. The Governor should also concentrate on the need for secure
4 placement and rehabilitation within these settings for more serious
5 crimes and repeat juvenile offenders including,

- 6
7 (1) wilderness and boot camps; and
8 (2) regional youth detention centers.
9

10 b. The Governor should also concentrate efforts for juvenile offenders
11 on innovative delinquency prevention programs on a statewide
12 basis including:

- 13
14 (1) alternatives to jail and secure detention;
15 (2) deinstitutionalization for status offenders;
16 (3) delinquency prevention and diversion;
17 (4) alternative learning programs; and
18 (5) drop-out retrieval services.
19

20 87. The Governor and the Juvenile Justice Department should implement
21 information systems that streamline current duplicative and costly criminal
22 justice information gathering systems and data banks to provide better
23 offender management and recidivism information at the local level.
24

25 Action Step

26
27 a. By June 1996, the Juvenile Justice Department should review and
28 make recommendations to the Governor regarding streamlining the
29 systems information archives.
30

31 88. The Juvenile Justice Department and local juvenile offender programs
32 should use cutting edge technologies and other recent innovations to reduce
33 the need for siting incarceration facilities.
34

35 Action Step

36
37 a. By December 1996, technical assistance training should be made
38 available to communities so they may understand how to
39 implement technological changes within their juvenile offender
40 programs.
41

42 89. The Commission strongly endorses local law enforcement efforts and
43 challenges these entities to ensure region-wide neighborhood and
44 community safety. Community based programs fund preventative and
45 outreach strategies such as "community policing," equestrian and bike
46 patrols, AmeriCorps, Citizens on Patrol, and parks and recreation programs
47 should be institutionalized and adequately funded as a means of helping
48 law enforcement agencies achieve this goal.

1 Action Steps

2
3 a. By December 1996, additional local funding should be secured so
4 every South Florida community has activated at least 2 of the
5 above mentioned community-based programs.

6
7 b. Local governments should continually explore other and newer
8 initiatives to ensure that all South Florida neighborhoods offer a
9 safe place to live.

10
11 90. The Governor, the Department of Corrections, and the Juvenile Justice
12 Department should focus on programs that reintegrate offenders with
13 families and communities.

14
15 Action Step

16
17 a. By July 1996, the above named agencies should increase programs
18 that provide support systems for offenders (mentoring) so that
19 linkages to education can continue and inculcate a work ethic and
20 civil service.

21
22
23 **F-5. TOWARD INCREASED ENVIRONMENTAL EDUCATION;**
24 **CULTURAL, AESTHETIC, AND RECREATIONAL OPPORTUNITIES;**
25 **AND SAFE COMMUNITIES**

26
27 Cultural, recreational, and environmental activities bring significant economic and
28 quality of life benefits to any community. For instance, recent studies indicate that
29 school children who have been exposed to the arts and cultural events are more
30 likely to score well on standardized tests and are less likely to enter the criminal
31 justice system (FDOJJ, 1995). Florida has recognized those benefits in a number
32 of ways. For example, the state's arts budget is the third largest in the nation.
33 With almost \$21 million in state funds and over half a million dollars in federal
34 grants, the Department of State administers resources to support cultural activity
35 and renovations across Florida. In addition, almost half a billion dollars are spent
36 by not-for-profit organizations and universities on Florida's cultural industry.
37 Moreover, the Florida Legislature has established one of the most comprehensive
38 environmental education delivery systems in the nation through its 1989
39 amendment of the Florida Environmental Education Act (1970) and corollary
40 legislation.

41
42 Cultural activities in South Florida and elsewhere appear to significantly influence
43 tourism interest and growth within a given community. Studies show that tourists
44 who participate in arts, cultural, and recreational programs have a larger economic
45 impact than tourists who do not. In 1993, total statewide cultural spending by
46 tourists amounted to \$3.3 billion. When the ripple effect is considered, cultural
47 activities throughout the state created an additional \$1.1 billion in gross state
48 product. A recent Palm Beach County study found that the economic impact of

1 tourism in the county would be diminished from \$767 million to \$200 million if
2 all cultural and arts events for which tickets were sold were eliminated.
3

4 Cultural amenities and recreational facilities are ever-increasing components in
5 corporate relocations. Unfortunately, in the eyes of many executives, South
6 Florida's reputation for "sun and fun" is often countered by a lingering perception
7 of the region being a cultural wasteland. The arts and cultural amenities have
8 historically been viewed as educational enhancements. However, recent studies
9 indicate that people also view artistic and cultural events, including local festivals,
10 as a way to improve their quality of life.
11

12 Clearly, South Florida's climate offers a wide variety of recreational opportunities
13 including: a number of water sports; land and environmentally based activities,
14 such as hiking and biking; and a range of professional and community based
15 sporting events. As the spring training home to many major league baseball
16 teams, the region has clearly recognized the value of the leisure, recreational, and
17 sports entertainment industry to its local economies. The availability of
18 participatory sport activities in a community also reduces the incidence of crime.
19 Furthermore, it enhances the quality of life for area residents where these are
20 offered as wholesome, low, or no-cost recreational activities.
21

22 South Florida's public lands beckon to the outdoor adventurer. Preservation 2000
23 has helped acquire parks, beaches, forests, and river front areas providing public
24 access to the region's flora and fauna. Endangered black bears, red-cockaded
25 woodpeckers, crocodiles, and Key deer thrive in South Florida parks and
26 preserves. Thousand of acres under SFWMD ownership are open for public use.
27 Efforts to protect and preserve existing facilities are hampered by dwindling public
28 funds. Public volunteerism is an essential element for continued enjoyment of
29 these facilities.
30

31 Because of the region's phenomenal growth, more recreational and cultural
32 facilities and services will be needed throughout the remainder of the century.
33 The public sector alone cannot satisfy the growing demand. As opportunities for
34 providing facilities and services become increasingly more limited, due to a lack
35 of adequate funding, the private sector must be invited to take a more active
36 sponsorship role. An example of public-private partnerships is the Florida
37 Legislature's Northwest Dade County Lake Belt Plan (1994). The concept is for
38 present private ownership to be replaced with future public ownership of the
39 coordinated Lake system that will result from the Plan. The idea is to create an
40 area that will serve water supply, recreation, ecotourism, aesthetic, and open space
41 needs. The Lake Belt Plan can easily accommodate an educational component in
42 cooperation with the school system.
43

44 Additionally, the complex and eclectic character of the region's ethnic and social
45 background should be considered when planning South Florida's cultural and
46 recreational future. Cultural and recreational consortiums should be encouraged
47 to meet funding challenges, better represent the existing ethnic and social milieu,
48 and support often over-burdened and under-funded public entities. Cooperation

1 and coordination among public and private concerns is the key to increasing the
2 quantity and the quality of cultural and recreational events in South Florida.
3 Consortia efforts can also help bring free programs to schools and festivals,
4 exhibits, and services to disadvantaged neighborhoods.
5

6 Recommendations:
7

- 8 91. Local neighborhood associations and chambers of commerce should take
9 "ownership" of recreational resources and establish partnerships with
10 private and public entities to expand recreational opportunities in their
11 individual communities.
12

13 Action Step
14

- 15 a. The creation of "business committee" type groups should be
16 encouraged for each community park and neighborhood recreation
17 facility to provide sponsorship, volunteer management, and support
18 for after school programs.
19

- 20 92. Local parks and recreation programs, school boards and area school
21 principals, civic groups, and industry sponsors should form an alliance and
22 recognize opportunities for "shared and extended use" of public facilities
23 for recreational purposes. This partnership should infuse existing local
24 government recreation programs with volunteers, sponsorships, and
25 funding.
26

27 Action Steps
28

- 29 a. Community residents and parents of school age children must begin
30 to see their schools and playgrounds as a place that is open to them
31 beyond school hours. Through school improvement teams, parent
32 organizations can develop programs of school sponsorship and
33 support specifically to make recreational facilities more available.
34
35 b. Expanded use of school facilities should include child care services
36 with parents assuming some of the costs of after school supervision
37 and maintenance. Other fee-for-service programs should also be
38 implemented.
39
40 c. Coordination between local governments and school boards should
41 be encouraged for joint-use of public facilities, particularly in the
42 area of recreational services.
43

- 44 93. The Department of State, local chambers of commerce, tourism
45 development councils, and civic groups should encourage cultural pride
46 and expression in the form of annual ethnic festivals and support these,
47 where feasible, with public resources.
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Action Step

a. Encourage the creation of voluntary cultural councils within each community to help supplement public funding and resources and foster community involvement county-wide, such as the South Florida Cultural Consortium in Palm Beach County.

94. The Department of Education and the Department of State should ensure that area students are taught environmental, cultural, and art awareness within the public school system or through other state and locally sponsored events.

Action Steps

a. By December 1996, the Department of Education should ensure that environmental awareness, pollution prevention, and land stewardship is a part of all science classes within the public school curriculum.

b. The Department of State should provide the Department of Education and South Florida School Districts with Florida State Archives materials suitable for replication and use within the public school setting.

95. The Department of Education should include environmental education as a required component of the K-12 curriculum.

Action Steps

a. The Department of Education should develop an environmental education curriculum and incorporate this into every school district's education program.

b. The Department of Education should implement an environmental in-service training program for all K-12 teachers emphasizing the role of the environment and its connection to the economy.

1
2 **G. REGIONAL GOVERNANCE: INTERGOVERNMENTAL**
3 **COORDINATION AND PARTNERSHIPS**
4

5 Governance and planning in South Florida involve a myriad of federal, state,
6 regional, and local agencies. This includes 16 county governments, 122
7 municipalities, 2 tribal governments, numerous special districts, 6 metropolitan
8 planning organizations, 5 regional planning councils (South Florida, Southwest
9 Florida, Treasure Coast, Central Florida, and East Central Florida), the SFWMD,
10 5 major state environmental planning and regulatory agencies, and 11 federal
11 agency managers. In the past, as well as today, this has led to agencies or
12 governments working at cross purposes with one another. As an example, there
13 are currently approximately 200 plans addressing the storage, treatment,
14 distribution, conservation, and use of water in South Florida.
15

16 In too many instances, overlapping jurisdictions and the lack of consistent time
17 frames complicate planning in the region. For example, the Restudy addresses the
18 period through the year 2050, the SFWMD's water supply plans cover planning
19 through the year 2010, and the scores of municipal water planning agencies have
20 their own planning framework. Mechanisms ensuring consistency among such
21 multiple plans are lacking. The sheer number of plans being developed suggests
22 that more resources are being expended in studying the issues and developing
23 plans than on actually addressing and correcting problems. This lack of
24 coordination is a waste of public effort and funds.
25

26 Achieving a sustainable South Florida, therefore, requires a coordinated regional
27 approach to planning. Management of the region must transcend political
28 boundaries and narrow agency jurisdictions. A framework must be created to
29 ensure that plans are coordinated, implemented, and provide long-term protection
30 of public investments and natural values. Given the unique needs of the South
31 Florida ecosystem, billions of dollars will be necessary to restore it. Furthermore,
32 funding must be coordinated with special legislative authority to provide oversight
33 of the long-term implementation of restoration efforts. Therefore, it is essential
34 that federal, tribal, state, regional, and local governments efficiently carry out their
35 commitment to restoration. The ultimate success of this effort will hinge on the
36 ability of these governments to work together with an unprecedented level of
37 partnership.
38

39 The broad and difficult problem of restoration, sustainability, and systematic
40 management of the region's resources must be met by public and private entities
41 that are presently structurally inhibited from acting towards those ends.
42 Significant advancements have been made by these entities in the incorporation
43 of principles of sustainability in their work; however, there is also growing
44 difficulty in extending that work beyond jurisdictional limits. The utilization of
45 principles of sustainability does not involve typical problems of public controls on
46 private conduct. Rather, it involves a coordination problem of great magnitude
47 and historic importance. Such projects are successfully executed by teams, not
48 committees. They are not achieved by coordination but by unification.

1 Unfortunately, a system of governance which could provide this unification does
2 not currently exist in the region.
3

4 Given the need for a coordinated regional approach to planning and management,
5 coordination of local government land use planning with regional water resource
6 issues is of special importance. Projected large increases in water demand, based
7 on past land use approvals, have induced the SFWMD to designate much of the
8 region as a Critical Water Supply Problem Area. This designation demonstrates
9 the urgent need to ensure that regional water supply sources remain sustainable
10 while continuing to provide enough water for human consumption. Success will
11 depend on the coordination of water supply requirements with pending and future
12 land use decisions in a fundamentally new way. Cost-effective water supply
13 delivery must also be maximized. Significant savings can be realized through
14 economies of scale by the creation of at least countywide or larger regional
15 authorities. For example, water delivered in Dade County is approximately 30%
16 less expensive than in counties with numerous small, inefficient, and costly
17 systems. A more regionalized approach would generate greater coordination in
18 planning, demand management, and capital facilities improvements.
19

20 Another opportunity for coordination among plans is the regional planning
21 councils' development of Strategic Regional Policy Plans. These plans are part of
22 the state/regional policy framework that helps guide local governments in the
23 development of their comprehensive plans and in the implementation of land
24 development regulations. These plans are required to address affordable housing,
25 economic development, emergency preparedness, natural resources of regional
26 significance, and regional transportation issues. However, unlike the new
27 intergovernmental coordination elements for local governments, recently mandated
28 by the Florida Legislature in 1994, these regional plans are not required to address
29 interregional coordination on issues that may transcend their individual
30 jurisdictional boundaries, such as Everglades ecosystem restoration. Strategic
31 Regional Policy Plans must become a component of regional growth management
32 planning. Furthermore, the 5 regional planning councils must work together to
33 ensure coordination in working toward the goals of ecosystem restoration.
34

35 Some intergovernmental efforts are currently underway to coordinate South Florida
36 ecosystem restoration efforts. At the federal level, the South Florida Ecosystem
37 Restoration Task Force and its associated Working Group have brought together
38 the major federal agencies involved in Everglades restoration. More recently,
39 membership in these groups has been expanded to include State of Florida and
40 tribal representatives. In addition to federal, state, and local efforts, the Governor's
41 Commission for a Sustainable South Florida provides a coordinating planning
42 framework for South Florida, critical to achieving a sustainable future. To
43 achieve this goal, and facilitate a unified regional governance characterized by
44 partnerships and intergovernmental coordination, the Commission proposes the
45 creation of the Everglades Charter and Everglades Partnership.
46

47 The Everglades Charter, a state and federal task force established by memorandum
48 of agreement, is proposed to include representatives from the SFWMD; FDEP;

1 DCA; FDOT; the Department of Commerce; the Florida Game and Fresh Water
2 Fish Commission; the U.S. Departments of Agriculture, Defense, the Interior, and
3 Transportation; the U.S. Environmental Protection Agency; the Seminole Tribe and
4 Miccosukee Tribe of Indians; regional planning councils; counties; municipalities;
5 and other governmental agencies. Eventually supplanting the present South
6 Florida Ecosystem Restoration Task Force, the Everglades Charter would fulfill
7 a similar role by:

- 8
- 9 • providing the necessary partnership to develop "team" designs for
10 successful restoration;
- 11 • establishing an action program for execution of the design proposed
12 by the Charter;
- 13 • providing oversight to state and federal programs affecting
14 Everglades restoration; and
- 15 • organizing and encouraging the participation of public and private
16 actors in plans and programs to achieve a sustainable South
17 Florida.
- 18

19 The Everglades Partnership is conceived as a consortium of public and private
20 institutions and individuals dedicated to working cooperatively to restore and
21 maintain the Everglades ecosystem. It would be organized as an independent, not-
22 for-profit corporation under the Laws of Florida and would seek designation under
23 Section 501(c)3 of the Internal Revenue Code. Its partners, including public and
24 private universities; state, federal, regional, local, and tribal representatives;
25 environmental groups; and economic stakeholders would provide technical support
26 and services to the Charter and the Commission. Furthermore, they would assist
27 in implementing appropriate recommendations for Everglades restoration. The
28 Partnership would act as a program sponsor, advocate, and facilitator. It would
29 promote cooperation in research, management, information sharing, and policy
30 making among all parties involved. It would also sponsor and be involved in
31 cooperative projects.

32

33 The Commission, working in coordination with the Charter, should continue to act
34 as a liaison among a variety of stakeholders, including all entities involved with
35 planning and regulation in South Florida. Additionally, the Commission can play
36 an important role in shaping South Florida's future by forging a stakeholder's
37 vision and guiding critical resource management issues, such as: the Restudy,
38 regional water supply plans, Strategic Regional Policy Plans, and local government
39 Intergovernmental Coordination Elements. The Commission's role would not be
40 limited to an advisory capacity. By promoting its recommendations and
41 monitoring related implementation efforts, it can enhance coordination of efforts
42 and evaluate the impact of ongoing activities related to the Everglades ecosystem.
43 The Commission can also be instrumental in assessing changing urban
44 environments and overall regional economic performance.

45

46 The Everglades Charter, the Commission, and the Everglades Partnership
47 collectively have the potential to facilitate a regional focus, systematic
48 management, and a sustainable future for South Florida's resources. Therefore,

1 it is equally crucial that the Commission's recommendations regarding these 3
2 entities be implemented as a collective package, and not as 3 separate
3 recommendations. It is broadly accepted that economic and social needs can and
4 should be met concurrently with the needs of regional environmental restoration.
5 South Florida should adopt a new pattern of governance that views economic and
6 social needs and natural system restoration as being regionally interconnected.
7 The Commission believes it is time to act. Instruments must be created now to
8 face this monumental task.

10 COMMISSION OBJECTIVES

- 12 • **Create multi-jurisdictional partnerships to regionally address the**
13 **systematic management and sustainable use of South Florida's**
14 **resources.**
- 15 • **Develop an Intergovernmental Coordination Element in the Strategic**
16 **Regional Policy Plans of the 5 regional planning councils**
17 **encompassing the South Florida ecosystem to ensure coordination in**
18 **working toward the goals of ecosystem restoration.**
- 19 • **Achieve a governance structure in the region to appropriately balance**
20 **and match authority and fiscal capacity and assure effective**
21 **intergovernmental coordination.**

23 Recommendations:

- 24
- 25
- 26 96. The Governor should continue the Governor's Commission for a
27 Sustainable South Florida, or a similar broad-based advisory board, to
28 facilitate coordination, build consensus, provide a forum for conflict
29 resolution in the development and implementation of plans, and take any
30 other action necessary to implement or ensure South Florida's long-term
31 sustainability.

32 Action Steps

- 33
- 34
- 35 a. By December 1, 1996, the Commission should review its efforts to
36 date, in carrying out its charges and responsibilities pursuant to
37 Executive Order 94-54. Based on that review, the Commission
38 should report to the Governor's Office on the feasibility of
39 continuing Commission activities pursuant to the Executive Order,
40 and make recommendations regarding its existing composition,
41 staffing, and funding structure.
- 42
- 43 b. The Governor's Office should immediately take the necessary steps
44 to expand the membership of the Commission to include a
45 representative of the Florida Department of Agriculture and
46 Consumer Services and the Southwest Florida Regional Planning

1 Council. The Governor's Office, in cooperation with federal
2 entities, should explore state and federal remedies to allow federal
3 participants on the Commission to be full voting members.
4

- 5 97. Create an Everglades Charter, representing federal, state, and local
6 governments to advance integration of state and federal programs for the
7 region.
8

9 Action Steps
10

- 11 a. The Governor, working with the South Florida Ecosystem
12 Restoration Task Force, should prepare a legislative proposal for
13 the 1996 Legislature creating the Everglades Charter, incorporating
14 the full range of federal executive authority for the development of
15 a state and federal task force including the participation of tribes,
16 municipalities, and other units of government, dedicated to working
17 cooperatively to restore and maintain the South Florida ecosystem.
18
19 b. Members of the Everglades Charter should enter into a
20 Memorandum of Agreement to forge their alliance.
21
22 c. The Everglades Charter's first task should be to develop and report
23 on ways to further integrate resource management across agency
24 and jurisdictional lines.
25

- 26 98. Create an Everglades Partnership, made up of public and private
27 institutions and individuals to continuously promote cooperation in
28 research, management, information sharing, and policy among all parties
29 involved in restoration and management activities and to serve as an
30 implementing institution for broad-based studies and analyses needed to
31 further the work of the Everglades Charter and the Governor's Commission
32 for a Sustainable South Florida.
33

34 Action Steps
35

- 36 a. By December 1995, the South Florida Ecosystem Restoration Task
37 Force, working closely with the Center for Environmental Studies,
38 should develop and submit a proposed partnership agreement,
39 including funding support, for review and consideration by the
40 Governor's Commission, the Federal Task Force, and other
41 interested parties. The proposed partnership should be made up of
42 public and private institutions and individuals who wish to
43 continuously promote cooperation in research and information
44 sharing among all parties involved in restoration and management
45 activities in the South Florida ecosystem.
46
47 b. Once established, the Everglades Partnership should work closely
48 with the Governor's Commission for a Sustainable South Florida

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and the Task Force to identify those needs which the Partnership could assist in implementing.

- c. The Everglades Partnership should establish a science forum and integration program to provide ways to debate scientific issues and research and promote economies in research by encouraging communication, cooperation, and integration among researchers.
- d. The Everglades Partnership should establish an information system initiative to assure that an adequate collection of information regarding various aspects of the Everglades and South Florida ecosystem restoration are available and easily accessible.
- e. The Everglades Partnership should provide other mechanisms, which researchers and institutions may employ to work together to achieve results faster, better, and more economically, and determine how unmet cooperation needs can be better served by specific institutions or by the Everglades Partnership.

99. The 5 regional planning councils encompassing the South Florida ecosystem should develop an intergovernmental coordination section in each of their respective Strategic Regional Policy Plans to ensure mutual coordination in working toward the goal of South Florida ecosystem restoration.

Action Steps

- a. DCA, in accordance with its fiscal year 95/96 contracts with the 5 regional planning councils, should ensure that the regional planning councils, working in conjunction with one another, revise the intergovernmental coordination sections of their Strategic Regional Policy Plans to address the recommendations of the Commission and the principles of ecosystem management being developed by FDEP by September 1, 1996.
- b. The regional planning councils should coordinate with the SFWMD; FDEP; DCA; FDOT; the Florida Department of Commerce; the Florida Game and Fresh Water Fish Commission; the U.S. Departments of Agriculture, Defense, the Interior, and Transportation; the U.S. Environmental Protection Agency; the Seminole Tribe and the Miccosukee Tribe of Indians; other regional planning councils; counties; municipalities; and other governmental agencies in developing the intergovernmental coordination sections of their Strategic Regional Policy Plans. These agencies should

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share information with the regional planning councils by March 1, 1996, regarding activities that should be addressed in the councils' respective intergovernmental coordination strategies.

c. Subsequent to the establishment of the Everglades Charter Organization, regional planning councils should coordinate with the Charter for assistance and input when further amending their respective Strategic Regional Policy Plans.

d. DCA and the Executive Office of the Governor should review the revised intergovernmental coordination sections of Strategic Regional Policy Plans and advise the Commission, no later than October 1, 1996, of the effectiveness of the revised sections.

e. In the event that DCA or the Executive Office of the Governor advises the Commission that more stringent requirements should be imposed on regional planning councils, the Commission should provide the Governor, with recommended language revising the Florida Regional Planning Council Act, making development of a formal Intergovernmental Coordination Element a requirement of Strategic Regional Policy Plans.

100. Water supply problems in South Florida should be addressed from a countywide and/or multi-county perspective through the creation of water supply utilities. For larger urban counties, such as Broward, Dade, Palm Beach, and Lee, countywide water supply utilities are recommended.

Action Steps

a. The 1996 Legislature should require the creation of a countywide water supply entity in each of the urban counties in the region within the next 5 years. Flexibility should be given to each urban county to develop its intergovernmental cooperative approach to establishing an entity having full powers to manage water supply within the county that meets this overall goal.

b. In non-urban counties in the region, the 1996 Legislature should encourage the creation of intergovernmental water supply utilities pursuant to procedures described in § 373.1962, FS.

c. The SFWMD should partially fund the organization and initial planning for countywide water supply utilities and intergovernmental water supply utilities.

1 d. Consistent with restoration objectives, the SFWMD and regional
2 water utilities should augment water supplies by incorporating
3 water control districts and broader management practices into their
4 regional water supply plans. Through the alteration of operational
5 schedules and improvements to conveyance systems, opportunities
6 exist for improving storage capacity, maximizing aquifer recharge,
7 improving wetland conditions, and reducing the threat of saltwater
8 intrusion.

9
10 101. Assure that entities with subregional boundaries collaborate to prepare
11 plans that together meet the needs of the region (e.g., metropolitan
12 planning organizations, FDOT districts, the SFWMD, regional planning
13 councils, and local governments).

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15 Action Steps

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17 a. While the adjustment of regional planning councils, FDOT district
18 boundaries, and metropolitan planning organization boundaries
19 would be one viable approach for assuring plans are prepared that
20 address the needs of the entire region effectively, the Commission
21 believes these entities should be able to accomplish this end by
22 giving stronger emphasis to coordination and collaborative
23 planning. If this does not occur, the Commission recommends to
24 the Governor that boundary adjustments be made pursuant to the
25 provisions of §§ 186.506(4), 20.23, and 339.175(1), FS.

26
27 b. Assure the appointment of the regional planning councils and water
28 management districts to the Growth Management Data Network
29 Coordinating Council.

30
31 102. The Water Management District Review Commission should preserve the
32 existing geographic boundaries of the SFWMD, because these comprise the
33 hydrological boundaries of the Everglades ecosystem.

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35 Action Step

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37 a. The Commission should immediately communicate to the Water
38 Management District Review Commission its belief that the
39 SFWMD should be preserved with its existing geographic
40 boundaries.

41
42 103. The Commission recognizes and supports the following interagency
43 approach designed to ensure the sustainability of the Florida Keys: state
44 agencies shall coordinate with one another and Monroe County to ensure

1 the protection of the Florida Keys consistent with § 380.05(22), FS. This
2 statutory provision requires that state agencies with rulemaking authority
3 review existing programs and permitting criteria for consistency with the
4 purpose of the Area of Critical State Concern (ACSC) designation and the
5 Principles for Guiding Development. State agencies have already
6 submitted "initial" reports to the Governor and Cabinet that provided
7 recommendations as required by § 380.05(22), FS.
8

9 Action Steps:

- 10
- 11 a. The Monroe County 2010 Comprehensive Plan outlines specific
12 permitting standards and interagency coordination needs as
13 necessary to implement the ACSC Principles for Guiding
14 Development. Upon final acceptance of the Plan by the State, state
15 agencies, through appropriate existing or new committees, should
16 revise the reports previously submitted to the Governor and Cabinet
17 to specifically outline all changes to state programs and permitting
18 requirements necessary, if any, to ensure full implementation of the
19 Plan. The revised reports need to include specific time frames for
20 implementing each of the respective provisions of the Plan as
21 applicable to each agency. A similar process should be pursued
22 with federal agencies to ensure a comprehensive interagency
23 approach. In particular, emphasis should be placed on the
24 improvement of water quality and the protection of marine
25 resources and endangered/threatened species habitat.
26
- 27 b. The 2010 Plan also emphasizes the need to determine the full cost
28 of implementing the Plan and to identify viable funding sources.
29 The Plan directs Monroe County and DCA to jointly conduct a cost
30 evaluation and to identify funding sources including the need for
31 legislative appropriations and federal assistance. Therefore, state
32 agencies should coordinate with DCA and Monroe County to fully
33 evaluate the cost of the Plan, including the identification of the
34 additional funding needs at the state level necessary to implement
35 the Plan. DCA shall submit a "funding needs" report to the
36 legislature immediately following final approval of the Plan. By
37 the end of the first year under the effective Plan, a funding Plan
38 should be adopted by the Legislature to ensure proper
39 implementation of the 2010 Plan.
40
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1 **H. IMPROVE SCIENTIFIC UNDERSTANDING AND INFORMATION**
2 **COORDINATION**

3
4 Good information is critical to the management of the South Florida ecosystem.
5 The information must be scientifically valid (i.e. based on good research,
6 answering the right questions), comprehensively focused for decision makers, and
7 understandable by the general public. The challenge in providing such
8 information for ecosystem management is the synthesis of information across a
9 variety of governmental programs, environmental projects, issue areas (e.g., land,
10 water, and air), and political boundaries while making this information accessible
11 to more than just a few interested technicians (DEP, 1994).

12
13 One key to succeeding in ecosystem management is ensuring the use of valid
14 scientific spatial (i.e. location-based) data. Valid spatial data is critical for
15 developing ecosystem management strategies and evaluating management results.
16 The availability of spatial data must also be coupled with the training of policy
17 makers, ecosystem managers, and stakeholders so that they can understand and
18 effectively use the information in the management process. This requires that the
19 spatial data be synthesized and packaged for easy access and use that is tailored
20 for addressing specific ecosystem management objectives, usually in a Geographic
21 Information System (GIS). This tool is especially applicable to the South Florida
22 ecosystem, which because of its large scale and scope, necessitates the use of
23 spatial information at both the federal and state levels (Interagency Spatial
24 Information Workshop, 1995).

25
26 Over the past several years, there has been increased coordination and cooperation
27 among federal, state, and regional scientific research and management agencies.
28 The South Florida Ecosystem Restoration Task Force was created in 1993 to
29 provide coordination among the federal agencies involved in the South Florida
30 ecosystem. The Task Force is supported by an interagency working group of 11
31 federal agency managers in South Florida. The Task Force now includes state and
32 regional agency representatives. This represents an attempt to bring about a
33 federal, state, regional, and tribal partnership engaged in the development and
34 implementation of ecosystem management.

35
36 A major task for this new partnership is a comprehensive initiative to inventory,
37 evaluate, and develop the scientific knowledge, predictive tools, and monitoring
38 programs needed to support South Florida restoration efforts (South Florida
39 Ecosystem Restoration Initiative, 1995). To assist in this effort, the Governor's
40 Commission for a Sustainable South Florida appointed a Science Research
41 Advisory Committee comprised of federal, state, regional, and local scientists to
42 coordinate research priorities of state and federal agencies in South Florida. The
43 proposed Everglades Partnership (see Section "G" on Regional Governance) is
44 envisioned to incorporate the Science Research Advisory Committee and form the
45 structure for technical and scientific support to both the Commission and the
46 proposed Everglades Charter (see Section "G" on Regional Governance).

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COMMISSION OBJECTIVES

- **Develop a coordinated, communicating, and comprehensive geographic information system (GIS) that will provide for a common data pool and provide the tools necessary to implement ecosystem management in the South Florida ecosystem.**
- **Establish and coordinate science and research priorities for the South Florida ecosystem.**

Recommendations:

104. FDEP, USDA-NRCS, local SWCDs, and the SFWMD, in coordination with the South Florida Ecosystem Restoration Working Group, the state universities (Florida Center for Environmental Studies), the regional planning councils, other agencies and local governments, should develop an interim assessment of data and information syntheses, analyses, and product needs for the South Florida ecosystem. A decision-based process for identifying priority information needs that are fully linked to implementation of ecosystem management objectives should be developed and employed.

Action Steps

- a. By October 1995, the FDEP, the USDA-NRCS, and the SFWMD will enlist the appropriate agencies and develop a structured, multi-agency process to determine data, information, and product needs for ecosystem management of South Florida.
 - b. By March 1996, the FDEP, the USDA-NRCS, and the SFWMD, with the appropriate agencies, will complete a structured, multi-agency process that determines data, information, and product needs for ecosystem management of South Florida.
105. FDEP, the USDA-NRCS, and the SFWMD, in coordination with the South Florida Ecosystem Restoration Working Group, the state universities (Florida Center for Environmental Studies), the regional planning councils, other agencies, and local governments, should develop and implement a strategy for the interim building of a computer GIS network with applications that provide information needed by ecosystem managers. The Seminole Tribe and the Miccosukee Tribe of Indians are invited to share information they have related to their Reservations where they deem appropriate.

1 Action Steps

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3 a. By March 1996, the FDEP, the USDA-NRCS, and the SFWMD,
4 working with appropriate state and local agencies and
5 representatives of the South Florida Ecosystem Restoration
6 Working Group, should complete a pilot GIS network and
7 application development for a defined need identified by the
8 Commission. The likely pilot is the information base and
9 application needed for alternatives and scenarios for natural systems
10 and buffers.

11
12 b. By August 1996, the FDEP, the USDA-NRCS, and the SFWMD
13 should have facilitated the development of a consortium of agencies
14 collectively implementing a networked GIS and a process for long-
15 term development of applications that significantly enhance the
16 ability to manage the South Florida ecosystem.

17
18 106. The Commission should assist with follow-up to the efforts of the
19 Interagency Spatial Information Workshop and the South Florida
20 Ecosystem Restoration Working Group for the South Florida ecosystem by
21 requesting all agencies, academic institutions, and non-profit organizations
22 to provide data and information necessary to complete the inventory of
23 data relevant to sustaining South Florida.

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25 Action Steps

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27 a. By September 1995, the Commission, in conjunction with FDEP,
28 the SFWMD, USDA-NRCS, local SWCDs, and the South Florida
29 Ecosystem Restoration Working Group, will issue requests to the
30 heads of agencies and other interests represented by the
31 Commission to assist in compiling information on projects and
32 programs that are collecting spatial data in South Florida.

33
34 b. By April 1996, FDEP, the SFWMD, USDA-NRCS, local SWCDs,
35 and the South Florida Ecosystem Restoration Working Group
36 should develop an integrated approach and needed technical
37 specifications on how to interlink and make readily available,
38 through the Internet, the database and GIS information from
39 projects and programs that are collecting spatial data in South
40 Florida.

41
42 107. The Science Research Advisory Committee should develop a Modelling
43 Action Plan relating to the enhancement, linkage, and development of
44 models for the South Florida ecosystem.

1 Action Step
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- 3 a. By July 1, 1996, the Science Research Advisory Committee should
4 complete a South Florida Ecosystem Modelling Coordination
5 Action Plan addressing the enhancement, linkage, and development
6 of existing large effort models such as the Natural Systems Model,
7 the South Florida Water Management Model, and other comparable
8 state and federal modelling efforts. Specific priorities for model
9 enhancement and development should be advanced through a
10 strategic process to ensure that the proper modelling questions are
11 being asked, that the constraints of the model(s) are adequately
12 identified, and that ecosystem management objectives will be met
13 by the modelling efforts.
14

- 15 108. The Science Research Advisory Committee should develop a Monitoring
16 Action Plan relating to ecological and ecosystem monitoring needs for the
17 South Florida ecosystem.
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19 Action Steps
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- 21 a. By January 1, 1996, the Science Research Advisory Committee
22 should complete an interim South Florida Ecosystem Monitoring
23 Coordination Action Plan addressing an inventory of existing and
24 ongoing ecological and ecosystem monitoring programs and
25 projects within the South Florida ecosystem.
26
27 b. By July 1, 1996, the Science Research Advisory Committee should
28 complete a South Florida Ecosystem Monitoring Coordination
29 Action Plan addressing an inventory of existing and ongoing
30 monitoring programs and projects, new ecological and ecosystem
31 monitoring demands, and the need to increase the priority for
32 ecological monitoring within a framework of species, communities,
33 and ecosystems. This Action Plan should include a proposed
34 monitoring framework to meet both local and ecosystem level
35 informational needs to be provided in a manner that is compatible
36 with providing the information to ongoing modelling efforts.
37 Monitoring of sheet and ground water flow to estuarine and marine
38 regions (e.g., Florida Bay) should be included in the Action Plan
39 as a priority research and monitoring effort.
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- 41 109. The Science Research Advisory Committee, coordinating with the South
42 Florida Ecosystem Restoration Working Group, should develop a Special
43 Studies Action Plan relating to special research needs for the South Florida
44 ecosystem.
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Action Step

a. By July 1, 1996, the Science Research Advisory Committee, coordinating with the South Florida Ecosystem Restoration Working Group, should complete a South Florida Ecosystem Special Research Needs Action Plan addressing:

- (1) The development of ecological indicators, including species/community/ecosystem parameters, that can be monitored to provide status and trends for measuring the results of management objectives and that can be utilized for refining modelling efforts; and
- (2) A strategic process to link special studies to a framework of management objectives for evaluating priorities in the context of the South Florida ecosystem.

110. Upon the creation of the proposed Everglades Partnership, recommendations 104 through 109 would be carried out in association with the newly formed Partnership.

Action Step

a. After the creation of the Everglades Partnership, it should assist in the ongoing work in recommendations 104 to 109.

GLOSSARY

Adaptive Management: A structured, iterative approach that recognizes that the information used in making decisions is imperfect and that, as decisions are made, a process is in place to gain better information and adjust the implemented action accordingly.

Aquifer: A geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield useful quantities of ground water to wells, springs, or surface water.

Aquifer Storage and Recovery (ASR): The injection of freshwater into a confined saline aquifer during times when supply exceeds demand (wet season), and recovering it during times when there is a supply deficit (dry season).

Aquifer System: A series of geologic formations which consist of two or more aquifers divided by lower permeability units.

Backpumping: The practice of pumping water that is leaving an area back into a surface water reservoir.

Best Management Practices (BMPs): Agriculture and other industry management activities designed to achieve an important goal, such as reducing farm runoff or optimizing water use.

Brackish: Water with a chloride level greater than 250mg/l and less 19,000 mg/l.

Concurrency: The local government comprehensive plan requirement of § 163.3180, FS, to ensure that public facilities and services needed to support a development will be available at the time of the development's demand for such facilities and services.

Cone of Influence: The area around a producing well which will be affected by its operation.

Consumptive Use: Utilization of water which reduces the supply from which it is withdrawn or diverted.

Control Structures: A man-made structure designed to regulate the level and/or flow of water in a canal (e.g., weirs, dams).

Cost Effective: The minimum cost within defined limits of performance and/or quality standards; for example, a cost effective public water supply would provide water which meets U.S. EPA drinking water standards and public preferences for taste, color, and hardness; and is within a range of acceptable water pressure and some defined service reliability criterion.

Critical Water Supply Problem/Water Resource Caution Area: A geographic area where water resources are critical, or are anticipated to become critical over the next 20 years.

Demand Management: Reducing the demand for water through activities that alter water use practices, improve efficiency in water use, reduce losses of water, reduce waste of water, alter land management practices, and/or alter land uses.

Desalinization: A process which treats saline water to remove chlorides and dissolved solids.

Development: Usually urban development, but can encompass any form of human-induced changes to the natural landscape.

Drawdown: When a well is pumped, water is removed from the aquifer surrounding the well, and the water table or piezometric surface is lowered. The drawdown at a given point is the distance the water level is dropped.

Ecosystem: A community of organisms, including humans, interacting with one another and the environment in which they live.

Ecosystem Management: An integrated, flexible approach to management of biological and physical environments--conducted through the use of tools such as planning, land acquisition, environmental education, regulation, and pollution prevention--designed to maintain, protect, and improve the natural, managed, and human communities.

Effluent: Water that is not reused after flowing out of any wastewater treatment facility or other works used for treating, stabilizing, or holding wastes.

Equity: Equal opportunity or access to the use of a resource and benefits to be derived from the use of a resource. Often used mistakenly to refer to protecting the vested interest of groups with relative greater economic, social, and political influence. Sometimes confused with the concept of fairness, which refers to the proportional distribution of benefits and costs of resource use.

Evaluation and Appraisal Reports (EARs): A local government's self assessment of the success or failure of its local government comprehensive plan, pursuant to § 163.3191, FS.

Evaporation: The process by which water is changed from liquid to vapor.

Evapotranspiration: The loss of water to the atmosphere by evaporation from land and water surfaces and transpiration from plants.

Everglades: South Florida's huge, interior freshwater marsh variously dotted with "islands" of trees.

Everglades Agricultural Area: The area of histosols (muck) predominantly to the southeast of Lake Okeechobee which is used for agricultural production.

Everglades System: A number of interrelated environments found in South Florida which include freshwater marshes; wetland tree islands (broad-leaf types); cypress heads, domes, and dwarf cypress forests; tropical hardwood hammocks; pinelands; mangrove swamps and mangrove islands; coastal saline flats, prairies, and forests; tidal creeks and bays; shallow coastal marine waters; pond apple swamp (around the south and southeast shore of Lake Okeechobee); and cypress swamps (a narrow band along the eastern edge of Palm Beach and Broward counties). * the latter two categories no longer exist.

Exclusionary Zoning: Zoning practices that close housing and land markets to families with low and moderate incomes, including: zoning vacant residential land for large minimum lot size, thus reducing the supply of developable lots and increasing their cost; zoning for exclusively single-family residences, thus zoning out people who cannot afford their own homes; zoning for excessively large minimum house size; imposing unduly expensive subdivision regulations which shift the burden of public improvements to the new homeowners.

Existing: Currently constructed, vested, or permitted development and/or its associated human or resource demands as of 1995.

Externalities: A secondary or unexpected consequence, often measured in an economic sense in terms of impacts.

Floodplain: Land area subject to inundation by flood waters from a river, watercourse, lake, or coastal waters. Floodplains are delineated according to their estimated frequency of flooding.

Full Cost Accounting: An economic tool which takes into account the externalities involved in the production, use, and disposal of goods and services over time. Externalities are given prices to reflect their costs, including energy sources used, the environmental damage caused by the production, and the costs of disposal or recycling when the product is no longer usable. Natural or renewable resources, traditionally viewed as "free goods," are redefined as assets, having substantial value to an enterprise and being appropriately allocated in the calculation of profit and loss.

Ground Water: Water beneath the surface of the ground, whether or not flowing through known and definite channels.

Growth: Expansion or increase in scale, magnitude, or physical dimensions.

Human System: Any part of the natural system which has been modified structurally for human economic or residential uses.

Hydraulics: The study of the physical behavior of water in terms of its flow paths, velocities, and stages. Surface water hydraulics are basically controlled by relatively few parameters, some of which have so far only been estimated by empirical methods. These are: slope, surface roughness, depth of flow, channel shape and size, and sediment load. Each of these parameters is interrelated, so that the effect of slope is generally measured while holding the other parameters constant, and so forth.

Hydrology: The study of the spatial and temporal changes in water volumes and discharge rates, and in its broadest interpretation includes the physical and dynamic properties of water, water quality, and many aspects of climatology and geology. Hydrologic parameters of importance to floodplain management are more limited, including: flood peak flows; flood volumes; time of concentration and travel; rate of rise; water velocities; sedimentation and degradation of flood channels and floodplains; flood elevation; the effect of geomorphology on floods; the hydraulics of flood channels, floodplains, and man-made structures; and water quality as it is impacted by floods.

Hydroperiod: The frequency and duration of inundation or saturation of an ecosystem. In the context of characterizing wetlands, the term hydroperiod describes that length of time during the year in which the substrate is either saturated or covered with water.

Industrial Revenue Bond: A source of financing that private lenders do not normally cover. In Florida, a \$75 million pool is available for financing certain manufacturing projects. Bonds are approved by a local government with the principal and interest paid solely by the beneficiary company. Bond proceeds can be used for site acquisition, architectural and engineering expenses, building construction costs, and equipment purchase.

Infiltration: The movement of water through the soil surface into the soil under the forces of gravity and capillarity action, or the volume of water that passes into the soil profile over a unit area.

Irrigation: The application of water by artificial means. The goals of irrigation include, but are not limited to, supplying evapotranspiration needs, field preparation, freeze protection, crop cooling, and leaching of salts.

Land Assembly: The consolidation of fragmented land holdings.

Land Readjustment: The replating of an area of land with multiple owners.

Long Hydroperiod: A long hydroperiod (relative to the Everglades) is a hydroperiod in excess of 10 months (often with continuous flooding for a few years).

Levee: An embankment to prevent flooding, or a continuous dike or ridge for confining the irrigation areas of land to be flooded.

Marginal Cost: The cost associated solely with each additional unit of production or consumption.

Minimum Flows and Levels: The limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area (§ 373.042(1), FS).

Mitigation: Usually consists of restoration, enhancement, creation, preservation, or a combination thereof.

Mitigation Bank: A project undertaken to provide for the withdrawal of mitigation credits to offset adverse impacts.

Mitigation Credit: A unit of measure which represents the increase in ecological value resulting from restoration, enhancement, preservation, or creation activities.

Natural System: A self-sustaining living system that supports an interdependent network of aquatic, wetland-dependent, and upland living resources.

Overlay Zones: A planning technique which is employed to describe uses that may be allowable within a given district, provided that approval is received to "overlay" a special category on top of the underlying zoning category. A local government can then impose a new set of regulations on a special area within an existing district. This allows local government to provide additional protection, above and beyond the provisions of the underlying zoning district, to such areas as historic districts, wetlands, or special land features.

Permeability: The ability of a rock or sediment to transmit fluid.

Potable Water: Water that is suitable for drinking, culinary, or domestic purposes. The maximum chloride concentration is 250 mg/l.

Potentiometric Head: The level to which water will rise in a well, piercing a confined aquifer.

Potentiometric Surface: An imaginary surface in a confined aquifer which coincides with the hydrostatic pressure level of the water in the aquifer.

Process Water: Water used for nonpotable industrial uses, e.g., mixing cement.

Reasonable-Beneficial Use: The use of water in such quantity as is necessary for economic and efficient utilization for a purpose and in a manner which is both reasonable and consistent with the public interest.

Raw Water: Water that has not received any man-made treatment.

Reclaimed Water: Water that has received at least secondary treatment and is reused after flowing out of a wastewater treatment facility.

Recreational Water Use: Water used in association with landscaping of public parks, golf course facilities, public ball fields or football fields.

Reservation of Water: That water which may be reserved from use (by the FDEP or the SFWMD) in such locations and quantities, and for such seasons of the year, as may be required for the protection of fish and wildlife or the public health and safety (§ 373.223(3), FS).

Reservoir: A manmade or natural lake where water is stored.

Resilience: The ability of a natural system to recover from or adapt to the stresses being placed upon it.

Restoration: To recover the natural system's vitality and biological and hydrologic integrity in such a way that the stated levels of health and ecological function are maintained over time.

Reuse: The deliberate application of reclaimed water, in compliance with FDEP and Water Management District rules, for a beneficial purpose.

Reverse Osmosis (RO): The process of pressurizing a saline solution to force it through a semi-permeable membrane and separate water from solutes.

Saline Water: Water with a chloride concentration greater than 250 mg/l. The term saline water includes brackish water and seawater.

Seawater: Water which has a chloride concentration equal to or greater than 19,000 mg/l.

Short Hydroperiod: Relative to the Everglades, a hydroperiod of about 7 or fewer months. Large annual variations are typical of individual locations because of year-to-year differences in rainfall.

Slough: A channel in which water moves sluggishly, or a place of deep muck, mud, or mire. Sloughs are wetland habitats that serve as channels for water draining off surrounding uplands and/or wetlands. Sloughs can vary widely in size, but are normally long and narrow and positioned lower in the landscape. Depending upon the adjacent habitats, sloughs can exhibit temporary to almost permanent water regimes. Due to this large range of hydroperiods, plant species can vary widely from spike rushes and various aquatic species in the wetter areas to beak rushes, low panicums, and yellow-eyed grass in the less frequently flooded communities.

Stage: The elevation of the surface of a surface water body.

Stormwater: Surface water resulting from rainfall that does not percolate into the ground or evaporate.

Subsidence: Lowering of the soil level caused by the shrinkage of organic layers. This shrinkage is due to desiccation, consolidation, and biological oxidation.

Surface Water: Water upon the surface of the earth, whether contained naturally or artificially. Water from natural springs is classified as surface water when it exits from the spring onto the earth's surface.

Surface Water Management: The development and implementation of a combination of structural and nonstructural measures intended to reconcile the water conveyance and storage function of depressions, lakes, swales, channels, floodplains, and coastal waters with the space and related needs of a designated area.

Surficial Aquifer: A heterogeneous unit comprised of all hydraulically connected saturated sediments from the water table down to the relatively impermeable sediments of the underlying confining unit. It is an unconfined aquifer system, recharged by rainfall and by leakage from surface water bodies.

Sustainability: The state of having met the needs of the present without endangering the ability of future generations to be able to meet their own needs.

Sustainable Agriculture: An integrated system of plant and animal production practices, having site specific application that will, over the long term, satisfy human food and fiber needs, enhance environmental quality and the natural resource base upon which the agricultural economy depends, making the most efficient use of non-renewable resources and on-farm resources, and integrate where appropriate natural biological cycles and controls, sustain the economic viability of farm operations and enhance the quality of life for farmers and society as a whole.

Sustainable Community: A community which uses its resources to meet current needs while ensuring that adequate resources are available for future generations. Such a community seeks improved public health and better quality of life for all its residents by limiting waste, preventing pollution, maximizing conservation and promoting efficiency, and developing local resources to enhance the local economy.

Sustainable Economic Development: A qualitative change (improvement or degradation) of a physically non-growing economic system in a state of dynamic equilibrium maintained by its environment.

Transmissivity: The rate at which water is transmitted through an aquifer under a particular hydraulic gradient. It is a function of the permeability and thickness of an aquifer and is used to judge an aquifer's production potential.

Urban Development: The human landscape characterized by cities, towns, suburbs, and outlying areas which are typically commercial, residential, and industrial in nature. They are typically non-agricultural or non-rural in nature.

Urban Development Boundary: A planning technique used to delineate the physical extent that urban development will be allowed in a particular jurisdiction.

Urban Forestry: The coordinated management of planting and maintaining trees in public spaces in urban centers that maximizes social, economic, and ecological benefits.

Urban Service Area: The geographic extent or area to which urban utilities or services are provided or planned to be provided over a specific time frame.

Value-added: The monetary worth contributed by labor to raw materials through the production process. Any process that adds value to products and final goods.

Water Budget: A description and quantification of the quality and movement of water in the hydrologic cycle within a specified geographic area. The product is often portrayed as a "balance sheet" of water in and water out in a dynamic system.

Water Conservation Areas (WCAs): That part of the original Everglades ecosystem that is now diked and hydrologically controlled by people for flood control and water supply purposes. These are located in the western portions of Dade, Broward, and Palm Beach Counties, and comprise a total of 1,337 square miles.

Water Control Structure: A barrier that acts to hold water at a planned level.

Water Table: That surface of a body of unconfined ground water at which the pressure is equal to the atmosphere; defined by the level at which water within an unconfined aquifer stands in a well that penetrates the aquifer far enough to hold standing water.

Water Use: Any utilization of water which reduces the supply from which it is withdrawn or diverted.

Wastewater: The combination of liquid and water-carried pollutants from residences, commercial buildings, industrial plants, and institutions together with any ground water, surface runoff or leachate that may be present.

Wetlands: Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and under normal circumstances do or would support, a prevalence of vegetative or aquatic life that require saturated or seasonally saturated soil conditions for growth and reproduction. These include swamps, marshes, bayheads, cypress ponds, sloughs, wet prairies, wet meadows, river overflows, mudflats, and natural ponds.

Xeriscape: The use of landscaping techniques to conserve water and reduce maintenance. Techniques include the use of drought tolerant plants, landscape layout, irrigation system design, and irrigation system management.

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