



Palm Beach County Agricultural Reserve Master Plan Phase II Final Report

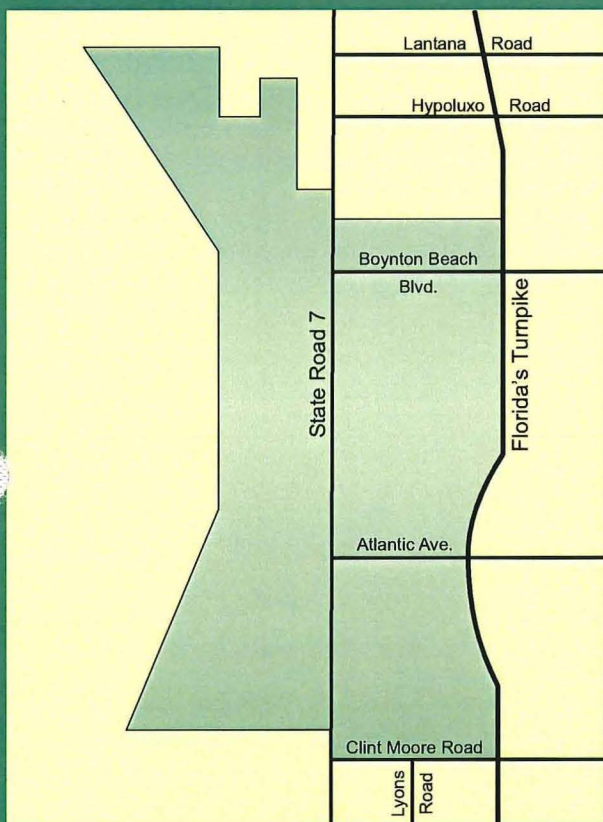
A Cooperative Agreement Between



Palm Beach County
Planning, Zoning, and Building
Department
Planning Division



South Florida Water
Management District



CH2MHILL
and
Dover, Kohl & Partners

November 1999

Executive Summary

In July 1998, the Palm Beach County Board of County Commissioners (BCC) directed CH2M HILL and Dover, Kohl, and Partners (the Consultants) to develop a Master Plan for the Agricultural Reserve (Ag Reserve) area in south-central Palm Beach County (County), a planning effort cooperatively funded by the BCC and the South Florida Water Management District (SFWMD). Developing this plan involved coordinating input from community members, interested and affected agencies, property owners, and the BCC. During the course of the project, the following BCC purpose statement guided the Consultants and all other participants in the planning process:

To preserve and enhance agricultural activity and environmental and water resources in the Ag Reserve, and produce a master development plan compatible with these goals.

Phase II of the Master Plan, which is the subject of this report, represents the final step of a six-step process that identified many of the activities necessary to implement the optimal land use alternative and develop a coherent, recognizable plan.

Phase I: A Summary

The Phase I portion of the Master Plan focused on identifying and employing decision facilitation methods to develop a defensible, consensus-based Master Plan, and relied on feedback from property owners, concerned citizens, environmentalists, government staff, agency members, and the Consultants. This feedback helped the BCC select the Bond Alternative, one of three land use alternatives born of the Phase I planning process. This alternative works toward instituting a balance between existing and future potential agricultural uses, water resource projects, and other environmental amenities with current and future development, part of which will be accomplished through the purchase of land with \$150 million in bond monies.

Phase I also sought to synthesize the various participants' feedback, studies, and research conducted by the Consultants, and BCC directives, by creating objectives that reflected this feedback, and outlined guidelines for preserving the agricultural, environmental, and water management features of the Ag Reserve. These objectives, listed below, guided the development of the Master Plan:

- Enhance Potential for Agriculture, including Equestrian Uses
- Enhance Environmental Resource Value
- Enhance Water Management Capability
- Enhance Accessible Open Space
- Create a Functional, Self-Sustaining Form of Development
- Minimize Cost/Impacts to Countywide Taxpayers

Phase II: The Master Plan

A graphic representation of the principles underpinning the Master Plan framework served to structure the Master Plan components (Exhibit ES-1). The framework started with the

same basic assumptions used for the *Phase I Bond Alternative Plan*:

1. Future development should be concentrated rather than scattered throughout the Ag Reserve in order to lower infrastructure costs.
2. Open space more easily accommodates a variety of public, agricultural, and equestrian uses when it consists of one large, contiguous area, rather than fragmented development.
3. Environmental and water management goals are more efficiently and thoroughly addressed when the lands best suited to remain as open space are first defined.
4. The 60/40 and 80/20 development options should remain, though some modifications are necessary to physically improve the shape of future development.
5. Future development should be concentrated east of SR 7/US441, to accommodate the environmental nature of the Loxahatchee National Wildlife Refuge.

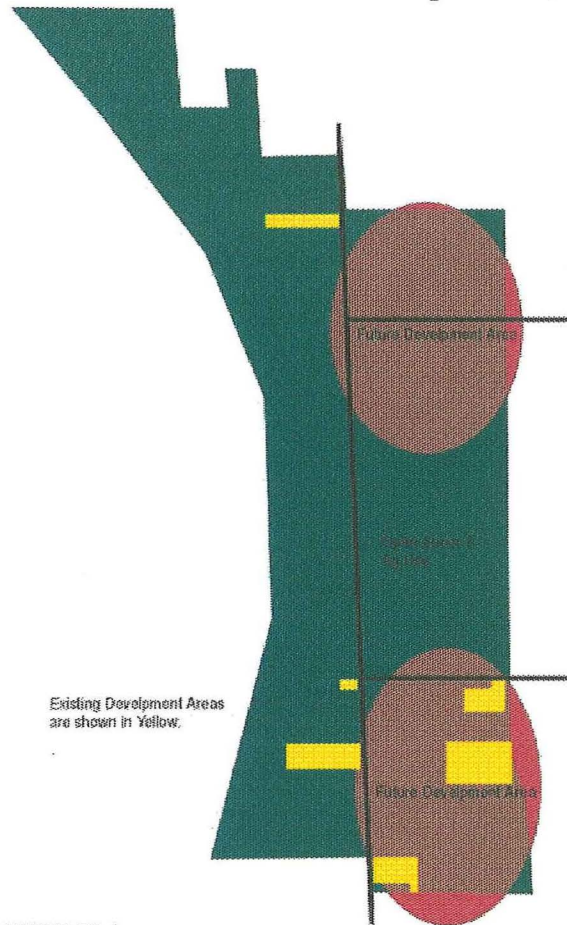


EXHIBIT ES-1
Framework Diagram

Alternative the BCC selected in January 1999 as its preferred choice for further study in Phase II. The Master Plan first seeks to preserve open space in order to preserve and enhance both agriculture and environmental and water resource values, a goal that is best met by designating all of the Ag Reserve as open space. However, rising development pressures mandate some consideration of targeting appropriate locations for future development, the most logical location for which is the southeastern corner of the Ag Reserve. This area contains the highest land values, as documented in the *Ag Reserve Bond Issue Report* (Planning, Zoning and Building Department, January 1998), with which the County Cooperative Extension Service acknowledges farming can not compete.

Not all of the potential future development rights existing under the current regulations can be accommodated south of Atlantic Avenue. Therefore, the area north of Boynton Beach Boulevard and east of SR 7/US441 became the next logical place for additional future development because this area has development potential under existing regulations.








The Master Plan graphic depicted in Exhibit ES-2 is based on the *Phase I Bond*

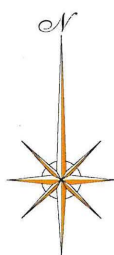
Master Plan Graphic


This map is conceptual:

It is meant to guide future efforts, showing possible build-out and land conservation scenarios within the Palm Beach County Agricultural Reserve. The boundaries between developed areas and green areas are not intended to be hard and set. They may be configured differently as the plan is refined and when development actually occurs. Areas colored green may contain agricultural uses other than those illustrated including but not limited to: equestrian facilities, nurseries, row crop farms, cattle ranching, raising farm animals, fruit groves/orchards, wildlife preserves, recreational facilities, and golf courses.

Legend:

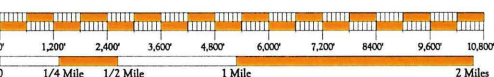
-  Land with existing development approvals
-  Proposed land for future development
-  Mixed-use town centers
-  Typically properties developed at one unit per 5 acres
-  Land for agriculture and open space
-  Canals and lakes
-  Roads





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town planning

November 26, 1999





After establishing the organizing framework, the Consultants created the detailed Master Plan as a sketch of one version of the future Ag Reserve (Exhibit ES-2). During the Phase I process, the Master Plan was drawn to illustrate potential development sites. Since no substantially new information regarding land purchases or development intentions was available during the Phase II Master Plan development process, the development areas illustrated in Exhibit ES-2 do not differ from those shown on the *Bond Alternative* of Phase I graphic.

This graphic addresses the amount of land current development rights allow for development and shows one version of how the Bond-purchased lands could change the face of the Ag Reserve by focusing on the two existing types of land: open land and developed land. In the Master Plan graphic, the open or undeveloped land appears in greens and blues to illustrate agricultural uses, equestrian uses, natural preserves, wetlands, water systems, and recreational facilities. Developed land, drawn in red and peach, suggests the quantity and general location of residential developments and some non-residential uses.

Conceptual in nature, Exhibit ES-2 represents one possible future vision for the Ag Reserve. Upon implementing the Master Plan, many elements, such as the developed and open areas designations, and minor roads and canals, for example, may differ from the locations shown in Exhibit ES-2. The Consultants chose these locations for the illustration purposes only, and do not suggest the configuration of these elements should remain exactly as depicted.

Preserving Agriculture and Open Space

At the direction of the BCC, the Consultants were charged with identifying land within the Ag Reserve that should be considered for purchase with the March 1999 bond monies. Purchasing the land would be a mechanism for preserving and enhancing both agriculture and open space. The BCC emphasized that land suitable for purchase west of US441/SR 7 should be considered first, and then land east of US441/SR 7. To determine which land was suitable for purchase, the Consultants conducted a suitability analysis.

Because the majority of the evaluated area is still relatively undeveloped, the Consultants developed a series of criteria to narrow the selection of properties suitable for purchase. For instance, criteria excluded certain properties from consideration because of their status or land use, which included:

- Existing and committed residential developments
- Institutional uses (churches, post offices, cemetery, etc.)
- Isolated private properties less than 20 acres
- Publicly-owned property
- SFWMD Water Preserve Areas (WPAs)
- Agriculture (Conservation) Preservation Easements
- Other areas not being considered for acquisition at this time

Excluding the above properties left approximately 5,700 acres for County purchase, of which approximately 1,700 acres lie west of US441/SR 7, and approximately 4,000 lie east of these roads.

Since the BCC's primary objective in directing the Master Plan involves preserving agriculture within the Ag Reserve, it was important to focus on the following criteria in evaluating properties deemed desirable for agriculture use:

- Existing infrastructure for water supply and drainage
- Suitable soils for growing crops

These criteria helped the Consultants determine the majority of properties recommended for purchase, with the exception of a small area in the northwestern portion of the Ag Reserve that appears to contain a large diversity of soil types, of which some are not suitable for agriculture. Moreover, much of this area is currently excavated and would not be suitable for retention in agriculture.

Environmental Features

Environmental features currently existing or proposed in the Ag Reserve include the three County-identified Environmentally Sensitive Lands (ESLs) and a proposed state park. The County is considering purchasing the ESLs, but these purchases are being addressed separately by the BCC-appointed Conservation Land Acquisition Selection Committee (CLASC).

Given the increased interest in a state park, the Master Plan delineates a future state park adjacent to the Arthur R. Marshall Loxahatchee National Wildlife Refuge, just west of SR 7/US441, near the intersection of Atlantic Avenue. This site contains a sufficient amount of high ground suitable to accommodate state park facilities, while offering opportunities to address the regionally significant resources required to justify state operation of a park. Its location at the end of Atlantic Avenue provides convenient regional access from the Florida Turnpike. The Master Plan graphic designates 300 acres for the future state park.

Water Resource Features

SFWMD has been investigating the Ag Reserve as a potential WPA location for many years. As part of its investigation, SFWMD identified the need for an approximately 1,660-acre aboveground reservoir, with a total storage capacity of approximately 20,000 acre-feet (870 million cubic feet) of water located in the western portion of the Ag Reserve. This reservoir would include adjacent Aquifer Storage and Recovery (ASR) wells with a capacity of 75 million gallons per day, and associated pre- and post-water quality treatment facilities. These facilities would supplement central and southern Palm Beach County water supplies by capturing and storing excess water currently discharged to the Lake Worth Lagoon. These supplemental deliveries will reduce demands on Lake Okeechobee and the Loxahatchee National Wildlife Refuge. In addition, SFWMD would design a portion of the WPAs to achieve water quality improvements in downstream receiving waters, depending upon pollutant conditions in the watershed.

The size and configuration of the reservoir and surrounding features may change according to WPA Feasibility Study results, which are expected to be available no earlier than April, 2000. On Exhibit ES-2, the reservoir is shown at approximately 1,660 acres, as suggested by SFWMD. The final location of the SFWMD reservoir could change depending on actual land purchases, land availability, possible land trades with Loxahatchee National Wildlife Refuge, and the WPA Feasibility Study.

Exhibit ES-2 also shows many canals and lakes interconnected throughout the Ag Reserve, which represent a potential future water system that is not intended to be constructed exactly as shown. Though this graphic does not show the true current configuration of the Lake Worth Drainage District (LWDD) system within the Ag Reserve, it does depict some of the larger drainage canals (e.g., Boynton, L-30, L-38 and E-2E). This proposed water system, if feasible, would connect to the SFWMD WPA reservoir and other related water resources features, though the actual ability to construct such a system will require further study.

Development Features

The following features of the Master Plan describe the five potential land development opportunities proposed for the Ag Reserve and depicted on the Master Plan graphic.

Land With Existing Development Approvals. These areas are land parcels that are either developed or have existing land development approvals.

Proposed Land for Future Development. These areas indicate how much land could be developed in the future. Future development appears in the southern and northern areas because of escalating land prices at the southern end and existing regulations that permit development at the northern end of the Ag Reserve. Modified 60/40 and 80/20 development options recommended in this Master Plan will promote better vehicular, pedestrian, and equestrian connections.

Typical Properties Developed at One Dwelling Unit per Five Acres. Like most counties in the United States, the County zoned its rural areas with a maximum density of one unit per 5 acres. This strategy reduces traffic and retains some trees, provided the owner does not clear the whole site, but does not preserve or enhance agricultural uses and open space, nor does it increase the environmental value of the land.

Mixed-Use Center. Mixed-Use Centers combine neighborhood-serving shops, offices, civic institutions, and housing to facilitate community growth, reduce traffic, and maintain open space. To meet the objective of creating a sustainable form of development, the Mixed-Use Center is recommended for the northern and southern portions of the Ag Reserve, areas expected to experience some future growth.

Economic Centers. The Master Plan graphic identifies two Economic Centers where the Florida Turnpike intersects with both Boynton Beach Boulevard and Atlantic Avenue. Like the Mixed-Use Centers, these centers are intended to be employment hubs for the Ag Reserve and the region. Situating these centers near the Florida Turnpike reduces the impact of traffic caused by regional employees and patrons, yet offers greater job variety for Ag Reserve residents than is likely to be found elsewhere in the Ag Reserve. The central location of these centers also serves farmers in need of a second job to supplement their income.

Other Plan Components and Service Provider Requirements

To fully understand the potential needs of the various service providers within the Ag Reserve, the Consultants estimated the maximum number of residential units based on existing regulations and the appropriate square footage of retail, office park, and industrial park uses, noting that land acquisition and future development approvals will likely reduce this estimated square footage. This maximum development scenario, which is neither the

vision expressed by the BCC nor reflected in the Master Plan, assumed this potential build-out:

- No more than 14,000 new residential units
- No more than 500,000 square feet in retail
- No more than 600,000 square feet in offices
- No more than 330,000 square feet in industrial park

Based on the details of this plan, County service providers indicated how the Master Plan impacted their capacity to serve the Ag Reserve, and anticipated their future needs. Exhibit ES-3 summarizes the various service provider requirements in the Ag Reserve based on the maximum potential development criteria listed above.

EXHIBIT ES-3
Service Provider Requirements

Service Provider	Requirements
Fire Rescue	Two new facilities near the southern and northern Mixed-Use Centers.
Libraries	Currently planned facilities should be sufficient to meet the needs.
Mass Transit	Additional study will be required to determine if expanding mass transit in the Ag Reserve is feasible.
Parks and Recreation	At least one 50-acre district park and one community park of at least 15 acres; plus a new regional park if the State park does not move forward.
Roadways	Both Atlantic Avenue and Boynton Beach Boulevard have two travel lanes in both directions (for a total of four lanes) west of Florida's Turnpike, and Lyons Road has two lanes in both directions from Boynton Beach Boulevard north to Lantana Road. South of Boynton, Lyons Road can be one lane in each direction (for a total of two lanes). Additional turn lanes might be needed at important street intersections.
Water Utilities	Existing water and wastewater treatment facilities are sufficiently sized to meet these additional requirements; collection and distribution will be handled with the County's existing developer agreements.
Sheriff	One new district facility and 35 additional officers.
Lake Worth Drainage District (LWDD)	Before their existing system of canals and lakes are altered to reflect the Master Plan graphic concept, additional feasibility analysis, including modeling, will need to be conducted by LWDD and SFWMD.

Summary of Recommended Action Plan

Many of the Master Plan action recommendations summarized in Exhibit ES-4 and detailed in Section 5 of this report meet multiple BCC directed objectives; however, they have been organized according to the objective they appear to meet the most. The recommendations range from being general in nature to specific language changes to the County's *Comprehensive Plan and Unified Land Development Code (ULDC)*. These recommendations incorporate recommendations found in the National Audubon Society Report (January 1998) and the Center for Economic Competitiveness, SRI International (January 1998), with the exception of those that target federal and state legislation and are, therefore, beyond the County's direct control. Thus, the recommendations summarized in Exhibit ES-4 consist of those that meet the Ag Reserve Master Plan objectives and are within the County's control.

EXHIBIT ES-4**Action Plan Recommendations**

Recommendations	Additional Detail Found in Section 5
Enhance Potential for Preserving Agriculture	
Develop a lease-back program to continue farming on County-purchased land.	Page 5-1
Encourage development of rural-style restaurants and farm markets.	Page 5-2
Convert packing houses into farmers markets or multi-use agricultural facilities.	Page 5-2
Encourage organic farming.	Page 5-2
Encourage and promote the development of niche or specialty crops.	Page 5-2
Work with Florida Atlantic University (FAU) to develop an Agricultural Education Center.	Page 5-2
Promote equestrian uses.	Page 5-2
Enhance Environmental Resource Value	
Purchase Environmentally Sensitive Lands (ESLs) in the Ag Reserve.	Page 5-3
Encourage the state's development of a park near the Loxahatchee National Wildlife Refuge.	Page 5-3
Enhance Water Management Capability	
Encourage SFWMD's development of the Water Preserve Areas (WPAs).	Page 5-4
Foster an integrated water management system.	Page 5-4
Extend Turnpike Aquifer Protection Overlay (TAPO).	Page 5-5
Enhance Open Space	
Purchase land within the Ag Reserve as outlined in the suitability analysis. Discard the Purchase Agricultural Conservation Easements (PACE) program.	Page 5-5
Develop an open-space management plan for land purchased by the County.	Page 5-5
Maintain existing density provision for open space for 60/40 and 80/20 development options.	Page 5-7
Enhance views to open space by limiting billboards, tall landscaped berms, and buffer walls.	Page 5-7
Allow golf courses, with some restrictions	Page 5-7
Create Sustainable Development	
Changes to Comprehensive Plan	
Limit the preserved open space portion of the 60/40 and 80/20 development options to agricultural or equestrian uses or buffers to these uses.	Page 5-8
Include objectives of this Master Plan in the Comprehensive Plan objectives.	Page 5-8
Make changes to 60/40 development option.	Page 5-9
Limit the amount of non-residential areas within the entire Ag Reserve to 500,000 square feet retail, 600,000 square feet office, and 330,000 square feet industrial.	Page 5-9
Develop design guidelines to maintain the rural character of the Ag Reserve.	Page 5-9

EXHIBIT ES-4**Action Plan Recommendations**

Recommendations	Additional Detail Found in Section 5
Include Ag Reserve with Traditional Market Place Development (AgR-TMDs with PDDs)	Page 5-10
Create and describe two new Mixed-use Centers located at the intersections of Lyons Road and both Atlantic and Boynton Beach Boulevards.	Page 5-11
Create and describe two new Economic Centers located at the intersections of the Florida Turnpike and both Atlantic and Boynton Beach Boulevards.	Page 5-11
Include commercial and office uses in the Mixed-use Centers with the maximum one dwelling unit per acre.	Page 5-12
Allow a limited number of industrial, office, or retail uses within the Economic Centers.	Page 5-10
Allow within residentially developed areas uses such as a corner store, a daycare center, a community center, a small restaurant, or a place of worship.	Page 5-10
Changes to Unified Land Development Code	
Regarding Planned Development Districts	
Make the ULDC consistent with changes listed in the Comprehensive Plan.	Page 5-13
Add a new planned development district called an AgR-TMD.	Page 5-13
Keep the AGR-PUD designation, but do not permit any new development under this category.	Page 5-13
Land Uses - Include uses for neighborhood-serving and specialty retail, office, commercial entertainment, industrial (in economic centers only), civic, agricultural, residential, and temporary uses.	Page 5-13
The New AgR-TMD Designation – Develop purpose and intent, application submission requirements, and general site design parameters (density and thresholds, range of housing, 60/40 and 80/20, street layout and design, and parking).	Page 5-17
Landscaping and Buffering for AgR-TMD in Mixed Use Centers – Develop requirements for compatibility buffer, perimeter landscape areas, right-of way buffer, and landscape buffer between compatible uses.	Page 5-18
Regarding the Location for the Community Commercial Service Overlay – Set location for a new CCSO at the corner of Atlantic Avenue and SR 7/US441.	Page 5-19
Minimize Costs	
Maintain existing landowner development rights in accordance with the Burt-Harris Act.	Page 5-19
Investigate the potential for developing a separate Community Development District (CDD) for the Ag Reserve.	Page 5-19

The action plan recommendations, if implemented, will allow the County to meet the objectives of this Master Plan, which in turn will satisfy the BCC-directed purpose statement:

To preserve and enhance agricultural activity and environmental and water resources in the Ag Reserve, and produce a master development plan compatible with these goals.

Developing the Master Plan relied on input from the BCC, Ag Reserve residents and property owners, and concerned citizens, and required synthesizing enormous and varied feedback inspired by this planning process. Shaping this feedback into a plan that embodied the County's purpose statement, remained within the confines of the Bond referendum, and met the objectives derived during the planning process proved a complex task. The Master Plan detailed in this report represents both the BCC and the County residents vision of the future of the Ag Reserve.

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Acronyms

AFT	American Farmland Trust
ARCC	Agricultural Reserve Citizens' Committee
BCC	Board of County Commissioners
CCD	Community Development District
CCRT	Countywide Community Revitalization Team
CCSO	Community Commercial Service Overlay
CLASC	Conservation Land Acquisition Selection Committee
DERM	Department of Environmental Resource Management
DU	dwelling unit
EDC	Economic Development Center
EPA	Environmental Protection Agency
ERM	Environmental Resource Department
ESLs	Environmentally Sensitive Lands
EWG	Extended Working Group
FAR	floor-area ratio
FAU	Florida Atlantic University
FDACS	Florida Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
LUAB	Land Use Advisory Board
LWDD	Lake Worth Drainage District
MPO	Metropolitan Planning Organization
NAFTA	North American Free Trade Agreement
PACE	Purchase of Agricultural Conservation Easements
PBCWUD	Palm Beach County Water Utility Department
PDD	Planned Development District
PRD	Planned Residential Development
PUD	Planned Unit Development
SFWMD	South Florida Water Management District
SR	state road

TAPO	Turnpike Aquifer Protection Overlay
TDR	Transfer of Development Rights
TMD	Traditional Marketplace Development
UF	University of Florida
ULDC	Unified Land Development Code
USACOE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
WG	Working Group
WPAs	Water Preserve Areas

SECTION 1

Introduction

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Introduction

In July 1998, the Palm Beach County Board of County Commissioners (BCC) directed CH2M HILL and Dover, Kohl, and Partners (referred to in this report as the Consultants) to proceed with the development of a Master Plan for the Agricultural Reserve (Ag Reserve) area in south-central Palm Beach County (County). The purpose of this plan, as directed by the BCC, is:

To preserve and enhance agricultural activity and environmental and water resources in the Ag Reserve, and produce a master development plan compatible with these goals.

The master planning effort is a cooperatively funded agreement between the County and the South Florida Water Management District (SFWMD).

Phase II of the Master Plan, which is the subject of this report, represents the final step of a six-step process that identifies many of the activities necessary to implement the optimal alternative, and develops a coherent, recognizable plan for the County to use as a guide in future development actions. This step develops insight into implementing the proposed plan by:

- Depicting the proposed Bond Alternative Master Plan graphically as modified by the BCC, and describing its key features and how they meet the overall plan objectives
- Identifying recommendations for preserving agriculture in the Ag Reserve that can be implemented by the County, including those made by the National Audubon Society (January 1998)
- Selecting areas within the Ag Reserve recommended for purchase and preservation
- Recommending changes to the Comprehensive Plan provisions for land uses, and recommending changes for land uses within the Ag Reserve
- Developing guidelines for modifying the County's Unified Land Development Code (ULDC)

The approach used for developing the Master Plan focused on decision facilitation methods to develop a defensible, consensus-based Master Plan for the Ag Reserve, and is divided into two parts: Part 1-Technical Approach, and Part 2-Process Approach. The first part defines the elements of the scope of work, and the second part describes how the scope was accomplished.

1.1 Methodology

1.1.1 Technical Approach

The technical approach was divided into two phases: Phase I—Conceptual Design Alternatives, and Phase II—Detailed Master Planning, which is covered in the remainder of this report. Phase I was designed to allow input from the general public in developing goals and objectives for the Ag Reserve. This process eventually identified three conceptual land use alternatives:

- **Status Quo** – This alternative assumed no changes to existing plans. The currently allowable land use is one dwelling unit (DU) per 5 acres, which can be increased to 1 DU per acre under the 60/40 clustered development option east of State Road (SR) 7/US 441. Both east and west of SR 7/US 441, development is also allowed at 1 DU per 5 acres, but can only be increased to 1 DU per acre under the 80/20 clustered development option.
- **No Bond** – This alternative involved a plan to balance existing agricultural use, planned water resource projects, and other environmental amenities with current and future development. It assumed that no public dollars were available from any source to facilitate land purchases within the Ag Reserve, and other processes and possibly land use configurations would be necessary to make the plan feasible.
- **Bond** – This alternative resembles the No Bond alternative; however, it assumed that \$100 million in public money would be available through a bond issue for land purchase.

Phase I involved a four-prong approach:

- Developing a public involvement and community outreach program
- Enlisting public values and confirming objectives
- Creating a graphic depiction of three conceptual alternatives through a “Design Charrette” process
- Evaluating the alternatives and comparing them with the objectives

A critical element of this project approach was the public involvement and community outreach efforts, which were designed to keep the public informed and to incorporate their input into the process at key junctions, which in turn incorporated the second prong of the project approach—enlisting public values. The Ag Forum, two public workshops, and a public opinion survey solicited input on the issues and concerns regarding the Ag Reserve. These concerns were then translated into a set of values addressing the Ag Reserve issues and features the public considered important.

The information garnered from these public forums was compared with the purpose of the project, as established by the BCC, and was used to develop a set of objectives. These objectives were then weighted to illustrate their relative importance, and criteria were developed to measure the alternatives against each objective.

The third prong of the project approach was intended to actually “put pen to paper” and develop the public’s perspective on how the Ag Reserve should look in 20 years. A process

called a Design Charrette allowed the public (in small groups of 10 or less) a “hands-on” opportunity to craft their vision of how the Ag Reserve should be developed. The Consultants examined the rough drawings created by the public for common themes, and then translated these drawings onto a final series of graphic representations of the Master Plan.

Finally, the fourth prong of the project approach weighted objectives and criteria previously developed to evaluate how well each of the three land-use alternatives met the objectives and overall goal or purpose of the project as established by the BCC.

1.1.2 Process Approach

The Consultants satisfied the scope of work requirements through a six-step process that combined principles from strategic planning, decision analysis, risk management, conflict mediation, and public involvement. The six-step process, illustrated in Exhibit 1, incorporated the organizational and/or analytical processes described below. This report represents the sixth step – Develop Implementation Plan. The other five steps are briefly summarized below.

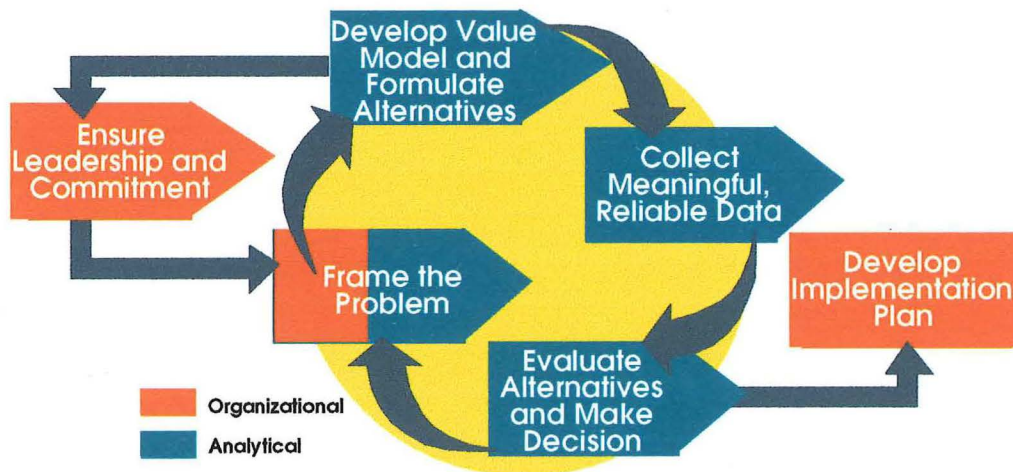


EXHIBIT 1
Six-Step Decision Process

1.2.1.1 Step 1 - Establishing Leadership and Commitment

The first step provided organizational focus and assigned individual leadership roles and responsibilities. The primary objectives were to establish a definitive decision-making process, create an effective organizational structure designed to address problems, and develop project momentum.

To establish the appropriate leadership and commitment, developing the Master Plan engaged five groups involved in decision-making at all levels. Their involvement was critical to the success of the project, in part because each group understood and embraced its role and commitment to the project. These five principal groups included:

- Board of County Commissioners
- The Public
- Land Use Advisory Board

- The Working Group
- The Extended Working Group

Exhibit 2 illustrates the relationships of the above groups and their respective roles in the project.

Board of County Commissioners

The BCC illustrated its leadership and commitment by establishing the overall purpose of this master planning effort and authorizing the County Planning Division to proceed with Phase I of the project. It continued its leadership role when it decided on the land use alternative developed in Phase I of the project and initiated this final Master Plan document and directed modifications to the alternatives.

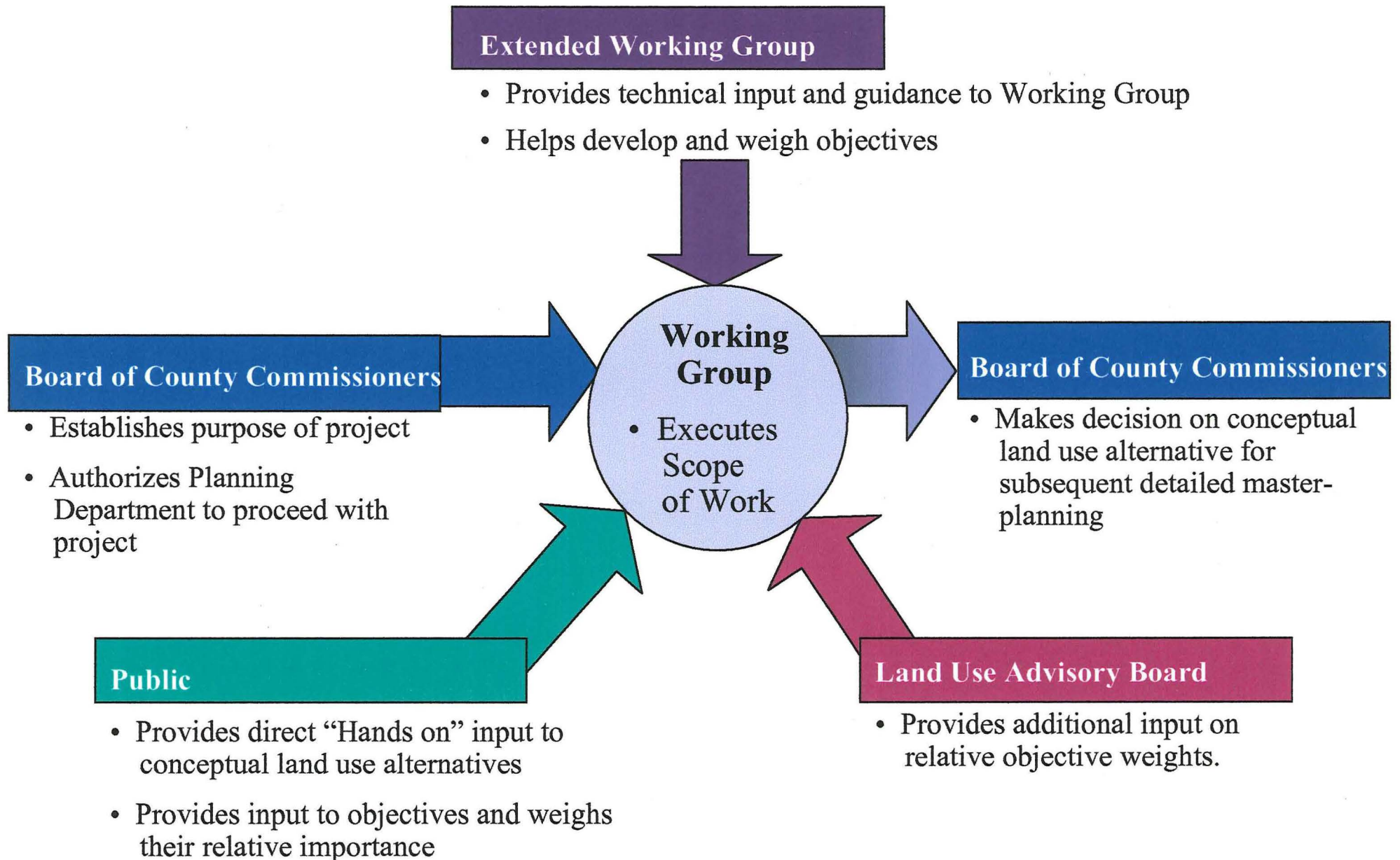
The Public

Throughout the first phase of project, the public had opportunities to work directly with the County staff and the Consultants in order to establish their leadership and commitment to the project. There were four specific opportunities for the public to become involved in the development of the Ag Reserve Master Plan:

- **Agricultural Forum** – held on August 28th, 1998, at the Clayton Hutcheson Agricultural Center and designed to solicit input specifically from the landowners and farmers in the Ag Reserve regarding their concerns about the Ag Reserve.
- **Public Workshop No. 1** – held on September 19th, 1998, also at the Clayton Hutcheson Agricultural Center, and designed to obtain input from a broader group, specifically the public at-large, regarding their Ag Reserve concerns.
- **Public Workshop No. 2 – Design Charrette** – held on October 16th and 17th, 1998, again at the Clayton Hutcheson Agricultural Center, and designed to educate the public on the Design Charrette process and allow them “hands-on” input into the development of the conceptual land use alternatives. The public present at the Charrette also provided input concerning the relative weights of the project objectives and criteria.
- **Public Opinion Survey** – completed via telephone October 28th through the 31st, 1998, and designed to solicit additional input from an even broader cross-section of the County on the various issues and concerns regarding the Ag Reserve. The results of the survey helped to bolster the argument that preserving agriculture and enhancing the environment and water resources in the Ag Reserve is important to the County at large.

Land Use Advisory Board

The Land Use Advisory Board (LUAB) supplied additional input to the project, which helped establish its leadership and commitment to the project. The LUAB consists of a diverse group of individuals charged by the County to facilitate decisions on future land use in the County. Its specific involvement in Phase I involved contributing to discussions on the relative weighting of the project objectives and criteria, which proved valuable when compared to the weighting provided by both the Extended Working Group (see below) and the public present at the Design Charrette.

**Exhibit 2**

Relationships of the Groups Involved in the Ag Reserve Masterplanning

Working Group and Extended Working Group

To facilitate the technical development of the Master Plan for the Ag Reserve, the project team was divided into two primary working groups. The core Working Group (WG) was made up representatives from:

- County Planning Division
- County Cooperative Extension Service
- County Zoning Division
- SFWMD Planning Department
- The Consultants

A second tier of professionals, with specialized technical skills, made up the second group termed the Extended Working Group (EWG). The EWG included representatives from:

- Palm Beach County Departments and Divisions
 - Fire Rescue
 - Department of Public Affairs
 - Environmental Resources Management
 - Water Utility Department
 - Attorney's Office
 - Parks and Recreation Department
 - Engineering Department
 - Library Department
 - Financial Management and Budget
- Palm Beach County School District
- Palm Beach County Sheriff Office
- SFWMD Government and Public Affairs Department
- Lake Worth Drainage District
- Metropolitan Planning Organization
- Florida Department of Environmental Protection (FDEP), Division of Parks
- Treasure Coast Regional Planning Council
- Florida Department of Community Affairs
- Loxahatchee National Wildlife Refuge

1.2.1.2 Step 2 - Framing the Problem

After the leadership roles and commitments were established, the decision-making process was framed to define and explicitly articulate the key needs and issues. The objective of this step was to clearly identify program goals, external influences, resources, and the constraints that impact the project's success. This step helped to produce a clear, precise vision of what the County wanted to achieve, as illustrated in the BCC purpose statement:

To preserve and enhance agricultural activity and environmental and water resources in the Ag Reserve, and produce a master development plan compatible with these goals.

Throughout the project, this statement was used to guide the master planning effort.

1.2.1.3 Step 3 - Developing Value Model and Formulating Alternatives

The third step involved identifying the critical project success factors. This step employed a systematic process to determine objectives and values, which in turn, helped identify detailed data needs. The first part of this step developed a value model and formulated objectives, criteria, and performance measures.

The purpose of developing objectives, criteria, and performance measures was to provide a framework for evaluating development alternatives that clearly reflect the purpose, values, and objectives of the project. After the objectives and criteria were developed, the next step consisted of weighting the objectives and criteria in a manner that reflected their relative importance. In addition, performance measures were developed to provide a quantitative or qualitative method of scoring alternatives against each objective and criterion.

This third step also included developing the alternatives for evaluation against the objectives and criteria. As described earlier, three conceptual land use alternatives were developed – *Status Quo*, *No Bond*, and *Bond*.

1.2.1.4 Step 4 - Collecting Meaningful and Reliable Data

This step involved collecting specific, project-focused data to reduce or manage uncertainty in a way acceptable to the public, stakeholders, and decision makers. This process helped the WG and EWG concentrate on developing useful, reliable data, and in many cases, avoid expending energy on irrelevant or extraneous data gathering. Most of the data collected was used to develop the background on the Ag Reserve, the criteria and performance measures, and the three conceptual land use alternatives.

1.2.1.5 Step 5 - Evaluating Alternatives and Making Decisions

Once sufficient data were available, the fifth step evaluated the three conceptual land-use alternatives and allowed the various groups involved in the project to make decisions about optimal alternatives. An optimal alternative was determined by incorporating known data and assessments, and comparing these to the goals and objectives. In addition to evaluating alternatives, the WG and EWG used this step as a checkpoint to reassess these alternatives and justify the selected alternative for presentation to the BCC.

After a presentation and recommendation made to the BCC on January 8, 1999, by the County Planning Division and the Consultants, the BCC discussed its issues and concerns relative to both the *No Bond* and *Bond* alternatives. Following discussions, the BCC directed the Consultants to proceed with developing the *Bond* alternative, which is depicted in Exhibit 3. In addition, the BCC directed that no work take place on Phase II pending the outcome of a \$150 million bond referendum scheduled for March 1999.

1.2.1.6 Step 6 – Developing Implementation Plan

After the Bond Referendum passed in March 1999 by an almost two-thirds majority, the Consultants began working with the County on revising the *Bond* alternative to develop the Master Plan, with the following revisions directed by the BCC:

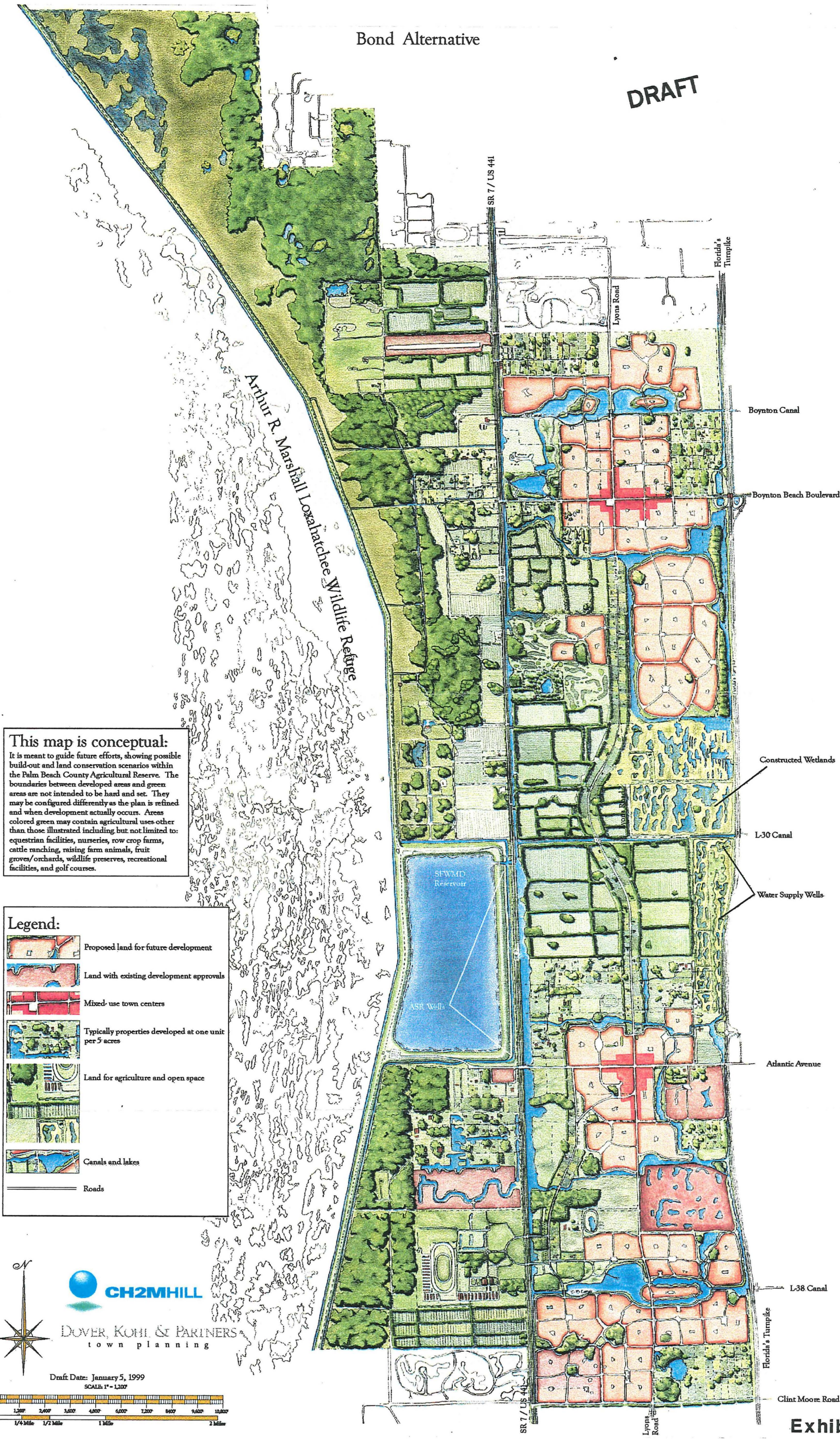
- Do not increase the number of units above the *Status Quo* alternative and reduce the total number through land acquisition.
- Focus land purchases west of SR 7.

Palm Beach County Agricultural Reserve

F L O R I D A



Bond Alternative

DRAFT

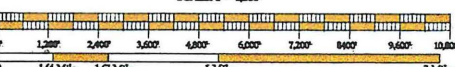


This map is conceptual:
It is meant to guide future efforts, showing possible build-out and land conservation scenarios within the Palm Beach County Agricultural Reserve. The boundaries between developed areas and green areas are not intended to be hard and set. They may be configured differently as the plan is refined and when development actually occurs. Areas colored green may contain agricultural uses other than those illustrated including but not limited to: equestrian facilities, nurseries, row crop farms, cattle ranching, raising farm animals, fruit groves/orchards, wildlife preserves, recreational facilities, and golf courses.

- Legend:**
- Proposed land for future development
 - Land with existing development approvals
 - Mixed-use town centers
 - Typically properties developed at one unit per 5 acres
 - Land for agriculture and open space
 - Canals and lakes
 - Roads


CH2MHILL

DOVER, KOHL & PARTNERS
town planning

Draft Date: January 5, 1999
SCALE: 1" = 1,000'



The BCC also asked the Consultants to consider the following when developing the Master Plan:

- Consider potential revisions to the 60/40 development options
- Address equity issues with the 80/20 options
- List appropriate uses within the Ag Reserve preservation areas
- Consider the appropriate location for a Community Commercial Service Overlay (CCSO)

The remaining chapters of this report are the result of this final step in the process.

SECTION 2

The Agricultural Reserve: Its History and Present-Day Features

SECTION 2

The Agricultural Reserve: Its History and Present-Day Features

2.1 Location

The Ag Reserve encompasses approximately 20,923 acres, generally located between Hypoluxo Road (extended) to the north and Clint Moore Road to the south, and west of Florida's Turnpike to the Arthur R. Marshall Loxahatchee National Wildlife Area (Water Conservation Area 1). Exhibit 4 shows the location of the Ag Reserve within the County and associated significant land features.

2.2 History of Preserving Agriculture in Palm Beach County

2.2.1 Comprehensive Plan

In 1980, the County's Comprehensive Plan formally created the Ag Reserve area and defined its boundaries: The emphasis in creating the Ag Reserve was preserving agriculture and establishing densities at 1 unit per 5 acres. Its creation also allowed "80/20 Planned Unit Developments (PUDs)" with 1 unit per acre clustered on 20 percent of the land with a minimum of 40 acres, and established provisions for Transfer of Development Rights (TDRs) outside of the Ag Reserve.

During the 1980s and through 1995, the Board of County Commissioners (BCC) worked toward finding ways to preserve agriculture and permit development at low residential densities. To facilitate the preservation of agriculture within the Ag Reserve, the 1989 Comprehensive Plan incorporated a variety of growth management tools. These tools included both mechanisms for the maintenance and enhancement of agriculture, such as TDRs, as well as development alternatives designed to ensure the preservation of open spaces by limiting development within defined areas. In addition, the BCC imposed a moratorium on growth in the Ag Reserve until studies could be completed that would address the viability of agriculture and examine potential development scenarios.

2.2.2 ARCC and AFT Report

In May 1993, the County Planning Division staff completed a preliminary report that outlined the steps the County had taken to establish an Agricultural Reserve Citizens' Committee (ARCC) and made recommendations for establishing a Purchase of Agricultural Conservation Easements (PACE) program. The study concluded that as much as \$100 to \$200 million would be needed to fund such a program.

As a supplement to the above report, American Farmland Trust (AFT) prepared a report titled, *How to Retain Agriculture in the Agricultural Reserve, Enhance its Contribution to the Economy of Palm Beach County, and Save Taxpayer's Money* (June 1993). The report concluded that agriculture is worth saving, not just for the economic contribution it makes to the

Loxahatchee National Wildlife Refuge



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Planning, Zoning
& Building Department

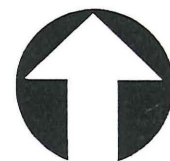


Cooperative
Extension Services

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NOTE: MAP IS NOT OFFICIAL, FOR PRESENTATION PURPOSES ONLY

Ag Reserve Boundary



Scale: n.l.s.
Date: 10/08/99
filename: agresbnd.dgn
contact: s.kubber
Palm Beach County
Planning, Zoning and Building
Department
100 Australian Avenue
West Palm Beach, FL 33406

Exhibit 4

Location of Agricultural Reserve

County, but because of the importance of its food production to the nation. Agricultural lands also provide a buffer between urban development and Environmentally Sensitive Lands (ESLs), such as the Loxahatchee National Wildlife Refuge. Therefore, AFT advocated implementing the PACE program.

As a result of the ARCC and AFT recommendations encouraging a PACE program, a PACE committee was established in 1996 to assist in implementing the PACE program created as part of County Ordinance #95-34. During its first year, the PACE committee reviewed three applications, each of which were withdrawn prior to any action by the County. The County had originally agreed to fund the PACE program out of general revenues, but did not set aside a line item in the budget for this purpose. The perceived lack of assured funding was viewed as a factor contributing to the program's stagnation. In response, the BCC directed County staff in November 1997 to explore issues related to a \$100 million bond issue.

By 1995, the BCC lifted the moratorium on development and began allowing 1 DU per acre if clustered on 40 percent of the land, leaving 60 percent in preserved open space, with a minimum of 150 acres of contiguous land (e.g., agriculture) required for open space. This type of development was also limited to frontage on certain thoroughfares on the east side of State Road (SR) 7, with the west side remaining at 5 DU per acre, or the 80/20 development option. The intent of these development options was to encourage clustering of open spaces, which in turn would provide opportunities to preserve agriculture or enable it to sustain itself. However, after the first developments had been approved under the 60/40 rule, the County recognized flaws in the current regulations in addition to the potential problems the current development trend would cause the County in infrastructure and services costs.

2.2.3 National Audubon Report

In January 1998, the National Audubon Society completed a report that examined the status and preservation of the agricultural industry in South Florida. The report suggested that some current agricultural endeavors in Palm Beach County held less promise than others. Specifically, the report concluded that winter vegetables such as tomatoes and peppers were the least likely to remain in business for the long-term due to circumstances outside the control of local government. These uncontrollable circumstances include federal trade policies such as the North American Free Trade Agreement (NAFTA), and proposed Environmental Protection Agency (EPA) restrictions on the use of soil fumigants such as methyl bromide. However, the report indicated that the Ag Reserve still holds significant potential for nurseries, greenhouse crops, and the equestrian industry.

This report also provides recommendations to encourage the survival of agriculture, some of which the County has begun to address. In fact, the report cites the County as a model to Broward and Miami-Dade Counties for the work that has been done thus far in preserving agriculture. These recommendations and County responses are summarized below.

Audubon Report: *The federal government should enact and enforce a country-of-origin labeling law for all fruits and vegetables in fresh, canned, and frozen form. Similar laws exist for clothing, appliances, automobiles and other consumer goods.*

County Action: Palm Beach County has begun the process of addressing this issue by expressing the need for such a law and supporting Senator Bob Graham's efforts in this matter. Locally, the County adopted an "Ask Where It Is Grown" program, which it intends to follow with a "Get Fresh" campaign through the Agricultural Economic Development Program.

Audubon Report: *Agricultural advisory review boards, similar to the Miami-Dade County Agricultural Practices Study Advisory Board, should have a permanent voice in the development of ordinances, regulations, and land use policies affecting agriculture.*

County Action: Palm Beach County has involved agricultural interests in making decisions for a number of years. In the 1980s, the Citizens Agricultural Advisory Committee was formed and provided input to the BCC on matters impacting agriculture. In 1994, with the funding of the Agricultural Economic Development Program, the Agricultural Enhancement Council was created and continues to meet monthly to stabilize, enhance, and diversify the agricultural industry. The recently formed Conservation Land Acquisition Selection Committee (CLASC), which focuses on acquiring conservation land in the County, has three members representing agriculture. In addition, agricultural interests are currently represented on the County's Citizen Task Force, the Land Development Regulation Commission, and the Land Use Advisory Board (LUAB).

Audubon Report: *Establish urban development boundaries and maintain them by promoting policies that encourage urban development and redevelopment of existing urban areas, such as the "Eastward Ho!" concept.*

County Action: The County's recent adoption of a tiered managed growth system as an integral component of the 1989 Comprehensive Plan promotes development consistent with the lifestyle choices of an area and is capable of containing sprawl. In addition, the work of the Countywide Community Revitalization Team (CCRT) serves to promote redevelopment and revitalization in existing urban areas experiencing disinvestment.

Audubon Report: *Consider methods used by other government agencies, such as PACE programs, TDR programs and the like, in conjunction with other recommendations described above, to help preserve agricultural lands.*

County Action: The County has developed a PACE program, as described above. However, because of the lack of funding, the program stagnated.

TDRs have been in place to provide incentives for developers to transfer development rights to areas outside of the Ag Reserve. The TDR program defines the Ag Reserve as a sending area and, therefore, does not allow any transfers into the area, which has helped to minimize increasing development.

Audubon Report: *Consider promoting farmer markets in Miami-Dade and Broward counties that are similar to that promoted in Palm Beach county. These markets could improve the visibility and importance of agriculture to the local community.*

County Action: Four green markets have been created and are operational in Palm Beach County, all of which were Agricultural Economic Development Program initiatives funded by BCC. One market has successfully sustained itself for three seasons.

2.2.4 Agricultural Education Center

In early 1999, Palm Beach County Commissioner Burt Aaronson and Dr. Anthony Cantanese, President, Florida Atlantic University (FAU), discussed the potential for joint endeavors that might be supportive of the agricultural and equestrian industry in Palm Beach County.

This discussion produced these two potential endeavors to be located in the Ag Reserve:

- A veterinary science center to serve South Florida residents jointly with FAU and, potentially, the University of Florida (UF)
- An FAU Florida Center for Environmental Studies within the area because it does significant work in land and water conservation

The County is continuing discussions with FAU to consider the potential for these facilities.

2.2.5 The Ag Reserve Master Plan: Phase I and Phase II

In June 1998, the BCC authorized the Consultants to proceed with developing the Phase I portion of this Master Plan for the Ag Reserve to address these complex land development issues and establish procedures to preserve agriculture within the Ag Reserve. In January 1999, the Consultants presented to the BCC the final Phase I report on the three conceptual land use alternatives. Following the presentation, the BCC directed County staff to proceed with developing and advertising a bond referendum for purchasing land in the Ag Reserve. A \$150 million bond referendum was placed on the March 1999 ballot for purchasing land in the Ag Reserve as a means of preserving agriculture and additional ESLs, some of which are in the Ag Reserve.

The bond referendum passed by an almost two-thirds majority in March, 1999. Following passage of the referendum, the BCC directed the Consultants to proceed with Phase II – Detailed Master Planning of the *Bond Alternative*.

2.3 Existing Land Use

There are eight major land uses within the Ag Reserve, as identified in Exhibit 5. The predominant land use continues to be agriculture, accounting for nearly 53 percent of the total area. Including nurseries and equestrian uses as part of agricultural uses increases this percentage to almost two-thirds of the total acreage. A total of 781 acres have been preserved for agricultural conservation easements, excluding equestrian uses, through the cluster development option within the Ag Reserve to permit the development of a PUD. Other than agricultural uses, the largest land use within the area is public ownership, representing nearly 20 percent of the Ag Reserve.

Exhibit 5
Existing Land Uses within the Ag Reserve

Land Uses	Approximate Acreage	Percent of Total
Cultivated Agriculture and Related Uses	11,154	53%
Nurseries	1,759	9%
Equestrian	697	3%
Agricultural Conservation Easements	781	4%
Developed (Residential/Commercial)	1,558	7%
Excavation	232	1%
Public Ownership (includes utilities)	4,151	20%
Vacant	591	3%
Total	20,923	

Source: Palm Beach County Planning Department

Exhibit 6 depicts the existing geographical distribution of uses within the Ag Reserve. As shown, most development has occurred in the southern area of the Ag Reserve, principally the area south of Atlantic Avenue. Cultivated agricultural and related uses dominate the central portion of the Ag Reserve with public ownership concentrated west of SR 7.

2.4 Current State of Agriculture

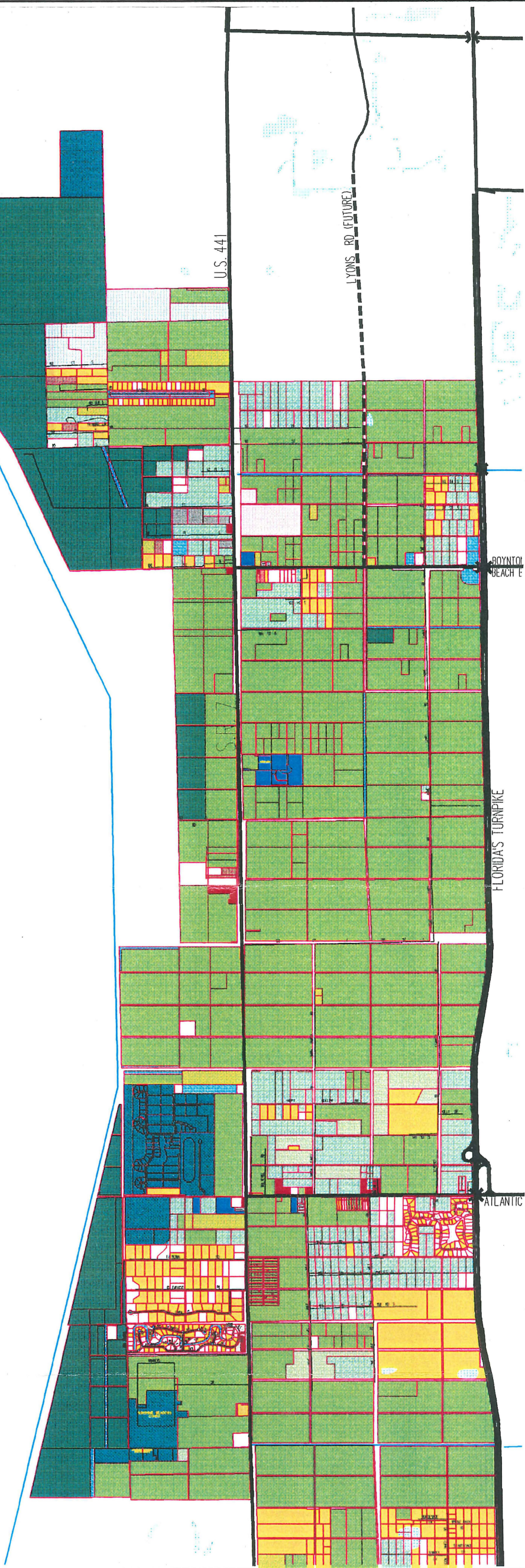
The history of the Ag Reserve has been primarily that of agriculture production in eastern Palm Beach County. The warm growing area and a drainage system developed to primarily accommodate agriculture allowed for the production of crops that were very competitive in the local and national markets. As development continued along the east coast of the County, farmers settled on individual pieces of property, staying competitive with new pest-control technology and full bed plastic mulch culture, which proved the most significant vegetable production practice in Palm Beach County for increasing yields per acre.

Citrus was planted in the area in the 1960s and added a valuable crop to the County. The extensive expansion of nursery crop production in the Ag Reserve increased the value of this area. The addition of equestrian farms completed the agricultural structure of the Ag Reserve.

Currently, the Ag Reserve commercially produces tomatoes, cucumbers, bell peppers, specialty peppers, Chinese vegetables, herbs, sweet corn, squash, eggplant, citrus, and gladiolas. Additionally, a large number of nurseries and equestrian operations exist within the area boundaries. In 1997-1998 the estimated economic impact of this acreage was estimated at \$211 million, which represented approximately 11 percent of the total economic impact of agriculture to the County, while comprising only 2 percent of the County's total acreage in agriculture.

NOTES

1. Publicly owned lands.
2. One or more predominant land use.
3. The information provided herein has been compiled for public planning purposes only utilizing sources Palm Beach County believes to be reliable. The county assumes no liability for the accuracy of same, and reliance upon data presented on the map is at your own risk.



NOTE: MAP IS NOT OFFICIAL, FOR PRESENTATION PURPOSES ONLY

Agricultural-Cultivated	Excavation	Multi-Family	Mobile Home
Agricultural Related	Commercial	Recreation/Open Space	Vacant
Nurseries	Public Ownership	Single Family	
Equestrian	Industrial	Utilities/Transporation Communication	
Agricultural Preservation Easement	Institutional	Mix ²	

Scale: nts
Revision Date: 01/16/98 cd
filename: agexh98.dgn
contact: c.dibella

**Planning
Zoning
&
Building**
100 Australian Avenue
West Palm Beach, FL 33406
Phone# (561) 233-5000

2.4.1 Vegetables

The largest acreage of an agricultural commodity harvested within the Ag Reserve, commercial vegetables, continues to produce a variety of crops. However, increases in imports and market pressure from other state and county producers has diminished the profitability of the major crops (tomato, bell peppers, and cucumbers) substantially in the last few years.

2.4.2 Citrus

The profitability of the 800 acres of citrus has declined due to increased production in other areas of the state. It is not expected that citrus will be replanted back in the Ag Reserve since other niche crops, such as lychees, longans, mangos, and mamey sapote, appear to be more profitable.

2.4.3 Nursery Crops

The County leads the state in nursery products production, and the Ag Reserve, with over 100 nurseries in operation, comprises a significant segment of this production. With a total of approximately 1,759 acres in nurseries, this area houses some of the largest nurseries in the County and is undoubtedly the most profitable agribusiness within the Ag Reserve.

2.4.4 Equestrian

There are a number of equestrian operations within the Ag Reserve on a total of less than 1,000 acres. These operations have found this area compatible to the needs of the industry. Also, the equestrian organizations formed to promote the economic benefits of the industry seek to equip the equestrian industry, promising the potential for a strong future.

More detailed information about the status of agriculture in the Ag Reserve is provided in Appendix A.

2.5 External Factors Affecting Agriculture

A number of external factors outside the County's control affect agriculture and were previously identified in the National Audubon Report (January 1998). Some of the more threatening factors include the NAFTA, urban development pressures, the adequacy of farm labor supply, increased environmental regulations, and adverse weather conditions.

2.5.1 Weather and Freezes

Weather and freezes are always a concern to farmers worldwide. The Ag Reserve, while one of the warmest winter production areas in the U.S., can experience freezing temperatures, bringing further uncertainty to the economics and productivity of the area. Growers have more recently used cloth crop covers to assist in protecting their vegetable crops when a freeze is predicted. These practices increase production costs and may or may not be recovered, which provides more incentive for farmers to discontinue farming and sell out to development.

2.5.2 NAFTA

Farmers cultivate 53 percent of the acreage within the Ag Reserve for vegetable production. While winter freezes and foreign competition continued to adversely affect the profitability of both vegetable and nursery growers, NAFTA, first enacted in 1994, allowed into the United States an almost unlimited amount of winter vegetables that directly compete with this area's production. Specifically, NAFTA has resulted in dramatic imports from both Mexico and Canada. Tomatoes, bell peppers, and cucumbers, the three largest crops produced in the Ag Reserve, respectively represent the first, third, and fifth largest imports of fresh vegetables. The latest United States Department of Agriculture (USDA) report on NAFTA states that Mexican tomato imports increased from \$304 million prior to 1993 to an average of \$477 million since 1994. Canada's increase in imports was even more dramatic; from \$3 million in 1990 to \$101 million in 1998. Even with this pressure on profitability, farmers have continued to grow, sell, and stay viable, yet it is expected that this import pressure will continue and adversely affect the long-term profitability of the Ag Reserve.

2.5.3 Urban Development Pressure

Given the current growing scenario established by NAFTA, which mandates high-risk/low margins, urban development offers an attractive solution to the area landowners. The Ag Reserve represents the last large contiguous undeveloped area in the southeastern portion of the County. The great differential between the value of land for agriculture use compared to the value for developments makes it difficult for agricultural landowners to stay in farming when agricultural returns are uncertain.

2.5.4 Farm Labor Supply

According to the National Audubon Report, vegetable growers in Miami-Dade and Palm Beach Counties have expressed concern about the future supply of farm labor, particularly legal farm labor. Currently, many U.S. citizens do not consider farm labor lucrative enough to pursue. For Caribbean and Mexican immigrants, however, these jobs offer opportunities for luxuries they could not afford in their native countries, working in the same field. Federal proposals to control the influx of farm workers from other countries could impact the future supply of legal farm workers. Such legislation could in turn raise U.S. farm wages to accommodate a U.S. work force, which in turn would increase production costs, and increase the proportion of illegal farm workers.

2.5.5 Increased Environmental Regulations

A number of federal agencies currently regulate the farming industry including the EPA, the Occupational Health and Safety Administration, the Food and Drug Administration, and the United States Department of Agriculture. At the state and regional levels, the Florida Departments of Environmental Protection (FDEP) and Florida Agriculture and Consumer Services (FDACS), and the South Florida Water Management District (SFWMD) also regulate the farming community. Farms and growers also must follow county codes and regulations regarding land use, building construction, waste collection and disposal, chemical application, etc. As cited in the Audubon report, growers and farmers generally recognize the importance of regulations, but feel there are too many that either overlap or do not provide a real value to human health, the environment, or the community. These

increased regulatory controls from the numerous agencies, unless streamlined, will also continue to prove a disincentive for farmers to continue to farm.

2.6 Other Features of the Agricultural Reserve Today

In addition to its emphasis on agriculture in the Ag Reserve, the BCC objectives for the area reflect two additional priorities:

- Enhance environmental resource value
- Enhance water management capability

2.6.1 Environmental Features

The Ag Reserve contains environmental features listed below and depicted in Exhibit 7:

- State and federal-owned environmental lands located along the eastern perimeter of the Loxahatchee National Wildlife Refuge
- ESLs targeted for purchase with the 1999 Bond Referendum

These important environmental features add value to the Ag Reserve. Preserving them requires that the County integrate development within and around these natural areas. The natural areas then become part of the developed communities and can actually be an asset for the developers and homeowners.

2.6.2 Water Resources Features

Another important attribute of the Ag Reserve is its current water resource features. Outside of the Loxahatchee National Wildlife Refuge, the most prominent and important features of the Ag Reserve are the vast network of Lake Worth Drainage District (LWDD) lateral and equalizing canals and the SFWMD's proposed Water Preserve Areas (WPAs).

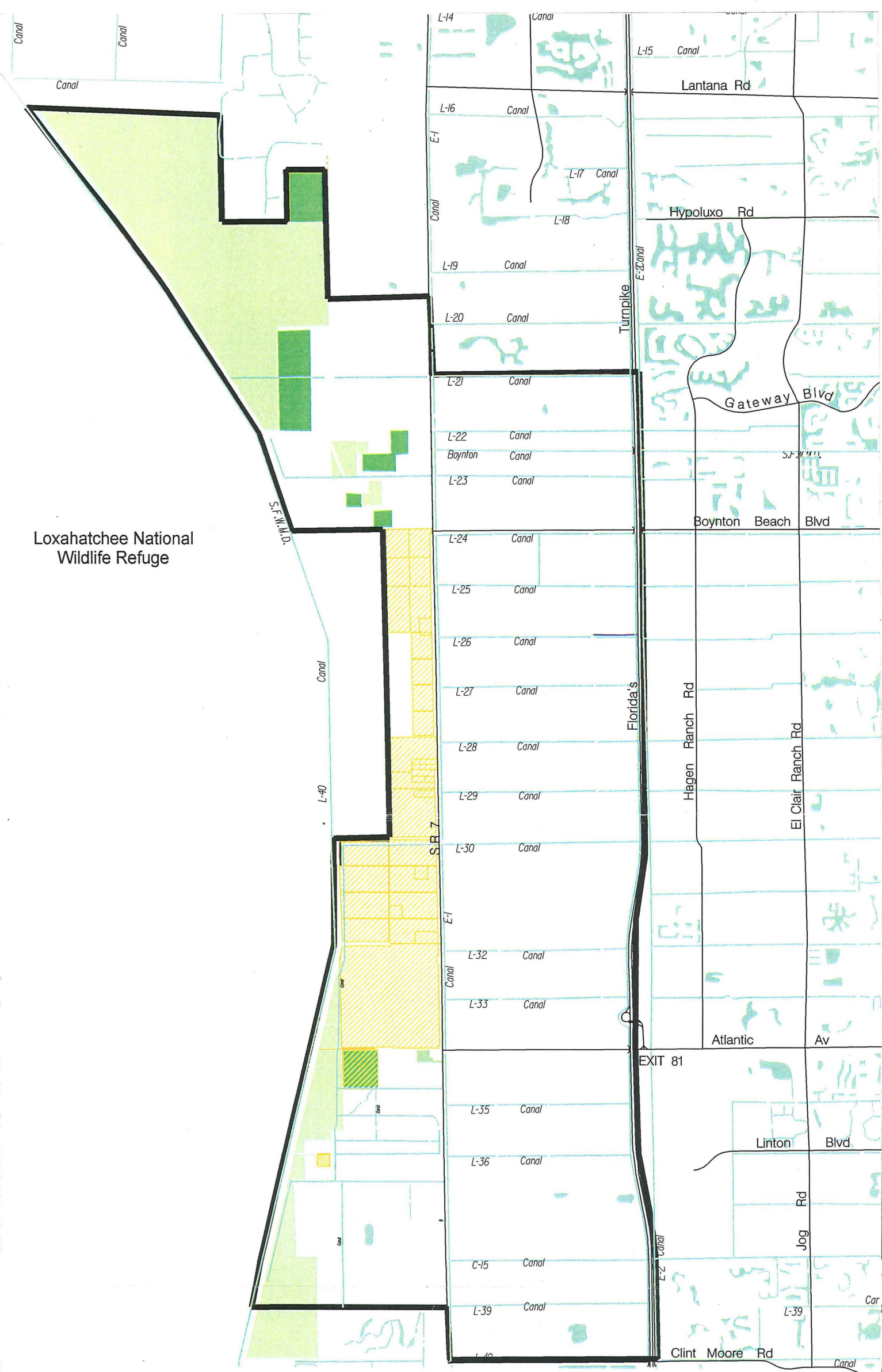
2.6.2.1 Drainage Canals

The drainage canals essentially serve two purposes – flood protection for the local residences and water supply for both the local farmers and the Palm Beach County Water Utility Department (PBCWUD) wellfields. Water levels in the canals are artificially maintained with water control structures throughout the year to accommodate and capture heavy rainfall inundation, and these levels also serve as a constant source of recharge to the wellfields and curtail seepage from the neighboring Loxahatchee National Wildlife Refuge. Without this important water resources feature, the County would be faced with major flooding problems and frequent water shortages. Exhibit 7 also depicts the network of LWDD canals throughout the Ag Reserve.

2.6.2.2 Water Preserve Areas

WPAs are areas designated by SFWMD and the United States Army Corps of Engineers (USACOE) as water bodies capable of serving a variety of functions such as rehydrating existing wetlands, treatment of stormwater runoff, and water storage in reservoirs for urban users and critical environments such as the Everglades. WPAs in the Ag Reserve are to be

Loxahatchee National
Wildlife Refuge



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Ag Reserve Boundary		SFWMD Proposed WPA		Canals	
State Property (SFWM)		Environmental Sensitive Lands			
		1999 Bond Referendum Acquisition Sites			



Scale: n.t.s.
Revision Date: 11/ 04/ 99
filename: agwtr&env.dgn
contact: s.kubber
Palm Beach County
Planning, Zoning and Building
Department
100 Australian Avenue
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located along the eastern perimeter of the adjacent Loxahatchee National Wildlife Refuge, and include an approximately 1,660-acre reservoir to be designed and constructed for purposes of water supply for both urban and agricultural uses as well as the environment.

These important environmental and water resources features has been incorporated and integrated into this final Master Plan.

SECTION 3

Master Plan Objectives

Master Plan Objectives

3.1 Developing Objectives

During Phase I, a value model was developed to provide a framework for defining the goals, objectives, and values as developed by the County and the Consultants, using input from the various other groups. This value model defined the over all purpose or project goal/vision, then focused on the goal objectives, which generally represented the most critical of the tangible, concrete issues surrounding the Ag Reserve. The value model narrowed its concentration from defining goals and objectives to a single or series of criteria developed to measure how well each objective meshed with the Board of County Commissioners (BCC) purpose statement regarding the Ag Reserve:

To preserve and enhance agricultural activity and environmental and water resources in the Ag Reserve, and produce a master development plan compatible with these goals.

3.2 Master Plan Objectives

The various groups, including the County and Consultants, the Extended Working Group (EWG), the Land Use Advisory Board (LUAB), and the workshop attendees, who provided feedback during various phases of the project, developed a set of issues that they felt were important to address. The issues, along with results from the public opinion survey and workshop, were used to formulate a set of primary objectives, which the BCC approved and prioritized as follows:

- Enhance Potential for Agriculture, including Equestrian Uses
- Enhance Environmental Resource Value
- Enhance Water Management Capability
- Enhance Accessible Open Space
- Create a Functional, Self-Sustaining Form of Development
- Minimize Cost/Impacts to Countywide Taxpayers

Exhibit 8 shows how the value model defines the relationship between the purpose statement (goal) and these six primary objectives approved by the BCC to measure the performance of the Master Plan.

3.2.1 Enhance Potential for Agriculture

This objective addresses the purpose statement and focuses on creating an opportunity to enhance or preserve agriculture. Although previous studies and discussions with Ag Reserve landowners and farmers indicate that row crop farming as it is presently structured (e.g., tomatoes, peppers, etc.) is probably not feasible in the long term (i.e., due to external factors previously described), other agricultural uses, such as equestrian, nursery and green-

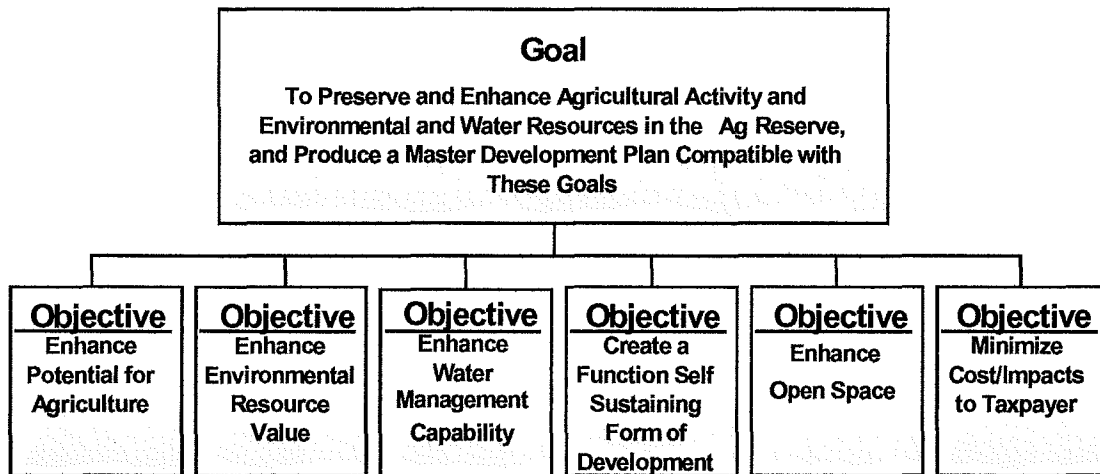


Exhibit 8

Value Model Developed for the Ag Reserve Master Plan

house crops, and niche market crops appear to have more promise. Nursery and niche crops are potentially feasible agricultural endeavors on the Ag Reserve because of their high yield/low acreage ratio, the profitability of which will depend on consumer demand. The County Agricultural Extension Service, in its *Ag Reserve Option Analysis Report* (Appendix A), identified almost 50 crops agronomically suited for cultivation on the Ag Reserve.

Criteria used to measure this objective included examining the potential of each land use alternative to accommodate agriculture in general and to support equestrian trails. Land use potential was measured by the amount of open space shown on the plans, the aggregate size of open space, and the ability of the open space to integrate with existing agricultural uses.

3.2.2 Enhance Environmental Resource Value

The purpose of this objective was to examine opportunities in the Ag Reserve to preserve key Environmentally Sensitive Lands (ESL) as identified by the County Department of Environmental Resources Management (DERM). The County ERM essentially identified three ESL parcels in the Ag Reserve. The criteria used to measure this objective included the potential to preserve these parcels and the ability to provide a land connection between them. This land connection relates to the amount of open space directly between the three parcels that would more easily allow habitat and wildlife to migrate between the parcels, instead of existing in isolation.

3.2.3 Enhance Water Management Capability

As with the first two objectives, the goal of enhancing water management capability stems from the purpose statement and focuses on the water management features of the plan. Water management features include the South Florida Water Management District (SFWMD) proposed Water Preserve Areas (WPAs), which includes a reservoir, the existing Lake Worth Drainage District (LWDD) system of canals and lakes, and additional set aside areas for Palm Beach County Water Utilities Department (PBCWUD) wellfields. The latter

feature was recommended as part of the *Integrated Water Resources Strategy for Southeastern Palm Beach County* (1998), another cooperative effort between the County and SFWMD.

Two criteria helped delineate how to enhance the Ag Reserve water management capability: its potential to enhance water resource areas and its amount of impervious area. The first criterion relates to the ability of the plan to incorporate the above water management features proposed by SFWMD and the County WUD. The second criterion was designed to examine the potential water quality impacts on the existing LWDD drainage system and relates to the estimated amount of imperviousness shown on each plan. Impervious areas include roads, buildings, parking lots, and other paved areas that inhibit water seepage into the ground. The more impervious the areas, the more water runs off into the drainage system, carrying with it possible water contaminants, thus increasing the potential for adverse water quality impacts.

3.2.4 Enhance Open Space

Enhancing open space also stemmed from the first public workshop in Phase 1, and was designed to examine each alternative's ability to enhance open space. Open space is defined as publicly accessible open land areas, such as parks and greenways, and excludes agriculture, ESLs, and water management areas, all of which are covered under the first three objectives.

3.2.5 Create a Functional, Self-Sustaining Form of Development

Also during the first public workshop, it became clear that the form of development in the Ag Reserve required some discussion. The public workshop, then, prompted the development of the fifth objective: creating a functional, self-sustaining form of development. This objective focused on the functionality of the development under each land use alternative, and how well the alternative can serve area residents with respect to providing employment, shopping, recreation, services, and quality of life. Reducing the necessity for area residents to travel outside the area to receive services lessens the impact on surrounding area services and roads. Three criteria were developed to measure this objective:

- The first criterion treated the entire Ag Reserve as an individual Planned Unit Development (PUD) and was used to examine the estimated external trip generation (peak hour) based on estimated number of units. An external trip generation refers to the estimated number of trips made by vehicles traveling outside of the Ag Reserve.
- The second criterion was used to describe the mix of uses expected to occur within each of the three alternatives, including residential, commercial, office, institutional, recreational, and open space.
- The third criterion was used to measure the amount of vistas expected to be created from each of the three alternatives. Those vistas were seen as an essential part of maintaining the rural character of the area. This criterion assumed that a vista would occur along the major north-south roads (i.e., SR7/US441 and Lyons Road) where no development or reservoir (due to the height of the levees) exists.

3.2.6 Minimize Costs/Impacts to Taxpayers

Another objective brought up at the first public workshop in Phase I involved minimizing costs/impacts to County taxpayers. The types of costs or impacts considered include infrastructure and services costs, as well as the public acquisition of land through a bond issue.

The *Bond* alternative developed in Phase I meets all of these objectives, which were approved by the BCC in January 1999, and thus served as the basis for developing the final plan graphic and recommendations for implementing the plan.

SECTION 4

The Master Plan

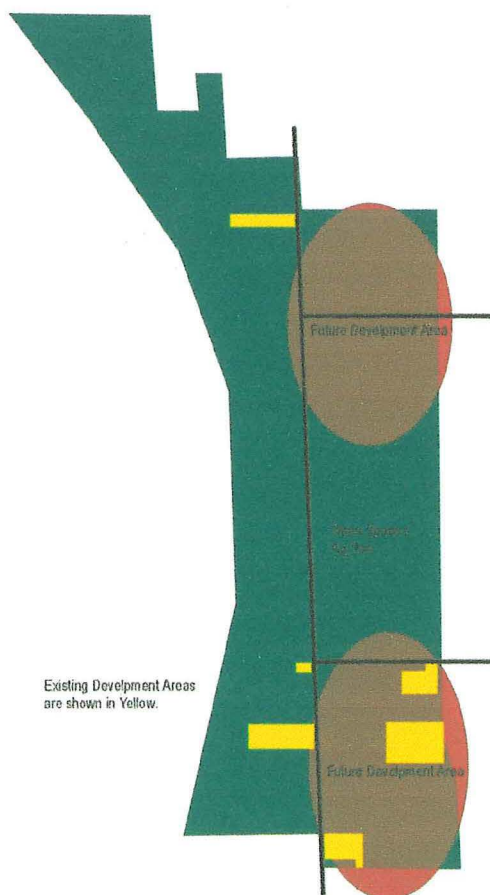
SECTION 4

The Master Plan

4.1 How the Plan Was Derived

The master plan graphic is based on the *Bond* Alternative, one of three scenarios born out of a series of workshops and meetings in Phase I whose participants included: property owners, concerned citizens, environmentalists, government staff and agency representatives, and the Consultants. In January 1999, the Board of County Commissioners (BCC) selected the *Bond* Alternative as its preferred choice for further study in Phase II. The master plan was reexamined and modified as Phase II work got underway in April 1999.

The challenge with mapping the future of the Agricultural Reserve is complicated because the future of agriculture as a business is at risk. This risk encourages farmers to sell their land to developers, though it is difficult to predict which properties farmers will sell. In addition, the Bond Referendum, which provides for a voluntary land acquisition program to purchase agricultural lands, does not identify which properties the County will acquire. Finally, even the water management systems may change because they depend on the type, quantity, and location of future development.



Given the many variables, a general framework was necessary to structure the Master Plan components in an organized manner. The framework diagram (Exhibit 9) shows the organizing principles underpinning the Master Plan. The framework started with the same basic assumptions used for the Phase I *Bond* Alternative Plan:

1. It is better to concentrate future development than to scatter it throughout the Ag Reserve. This approach lowers infrastructure costs because it requires fewer miles of pipes, wires, and pavement within the Ag Reserve.
2. Open space more easily accommodates a variety of public, agricultural, and equestrian uses when it consists of one large contiguous area rather than fragments completely surrounded by development.
3. Environmental and water management goals are more efficiently and thoroughly addressed when the lands best suited to remain as open space are first defined.

Exhibit 9
Framework Diagram

4. The 60/40 and 80/20 development options will remain, though some modifications to these options will be necessary to improve the physical form of future development.
5. For environmental reasons, it is better to concentrate future development east of SR 7/US441, further away from the Loxahatchee National Wildlife Refuge.

The Master Plan first seeks to preserve open space in order to preserve and enhance agriculture and environmental and water resource values. The best scenario for meeting this objective consists of designating all of the Ag Reserve as open space. But given the rising development and economic pressures, suggesting appropriate locations for future development is necessary. The most logical location is the southeastern corner because this area contains the highest land values, as documented in the Planning, Zoning and Building Department staff report, *Ag Reserve Bond Issue*, dated January 23, 1998. The County Agricultural Extension Service acknowledges that farming can not compete when land values are excessive. For instance, in the late 1800s through the early 1900s, Brooklyn, New York, deagriculturalized rural Kings County, which at the time had the most productive and profitable vegetable farms in the United States, and transformed it to an urban environment.

Not all of the potential future development rights existing under the current regulations can be accommodated south of Atlantic Avenue. Therefore, the area north of Boynton Beach Boulevard and east of State Road (SR) 7/U.S. 441 became the next logical place for additional future development because this area has development potential under the existing regulations.

After establishing the organizing framework, the Consultants drew the detailed master plan to sketch one version of the future Ag Reserve. During the Phase I process, the master plan was drawn to illustrate potential development sites. Since no substantially new information regarding land purchases or development intentions has been available, the development areas indicated on the Phase II graphic do not differ from those illustrated on the *Bond Alternative* graphic of Phase I.

4.2 The Master Plan Graphic

Despite the rather detailed looking plan (Exhibit 10), the graphic is conceptual in nature and seeks to encapsulate one possible future vision for the Ag Reserve. Upon implementing the Master Plan, many components, such as developed/open areas, minor roads and canals for example, are likely to occur at locations different than those shown on the graphic. The Consultants chose locations for the purposes of illustration, and are not suggesting that these components are required on the exact properties as shown.

This graphic intends to offer an answer to these questions:

- How much land could be developed given current development rights?
- How will the Bond-purchased lands change the face of the Ag Reserve?








Therefore, the primary evaluation of this plan centers on the two types of land uses: open land and developed land. In the Master Plan graphic, the open land is undeveloped and drawn with greens and blues to illustrate agricultural uses, equestrian uses, natural preserves, wetlands, water systems, and recreational facilities. Developed land is drawn in red

Master Plan Graphic

This map is conceptual:

It is meant to guide future efforts, showing possible build-out and land conservation scenarios within the Palm Beach County Agricultural Reserve. The boundaries between developed areas and green areas are not intended to be hard and set. They may be configured differently as the plan is refined and when development actually occurs. Areas colored green may contain agricultural uses other than those illustrated including but not limited to: equestrian facilities, nurseries, row crop farms, cattle ranching, raising farm animals, fruit groves/orchards, wildlife preserves, recreational facilities, and golf courses.

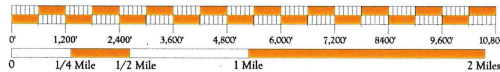
Legend:

-  Land with existing development approvals
-  Proposed land for future development
-  Mixed-use town centers
-  Typically properties developed at one unit per 5 acres
-  Land for agriculture and open space
-  Canals and lakes
-  Roads



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November 26, 1999



and peach to show the quantity and general location of residential developments and some non-residential uses.

4.3 Specific Features Identified on the Graphic

Specific features identified on the graphic are further explained below.

4.3.1 Agriculture and Open Space

The graphic shows a variety of patterns to represent agriculture, open space, parks, equestrian facilities, and natural areas. Because it is impossible to know exactly which properties will have those particular uses, the Consultants drew a variety of patterns, which are not intended to pre-determine which properties will be farms, ranches, or parks, but simply to show that the end result will in fact have variety. Given the current situation within the Ag Reserve, the future open spaces and agricultural lands in the Ag Reserve will not look exactly as is shown on this graphic.

The size of the open spaces vary on the graphic as well. Some small open spaces nestle within the developed areas because it is anticipated that not all developed properties using the 60/40 or 80/20 development options will satisfy their open space requirements "off site." These smaller open spaces can function as nurseries, groves, parks, and equestrian facilities. The larger open parcels could house farms and ranches.

4.3.1.1 Suitability Analysis

At the direction of the BCC, the Consultant was charged with identifying land within the Ag Reserve that should be considered for purchase with the March 1999 bond monies.

Purchasing the land would be a mechanism for preserving and enhancing both agriculture and open space. The BCC emphasized that land suitable for purchase west of U.S. 441/SR 7 should be considered first, and then land east of U.S. 441/SR 7 second. To determine which land was suitable for purchase, a suitability analysis was conducted.

Because the majority of the area is still relatively undeveloped, a series of criteria were used to narrow the selection of the properties suitable for purchase. The first series of criteria excluded certain properties from consideration because of their status or land use. Exhibit 11 depicts the exclusion criteria, the explanation for their use, and their approximate number of acres. Appendix B includes a series of six graphics that show the progression of the properties excluded in this suitability analysis.

Since the Ag Reserve encompasses approximately 21,000 acres, excluding the above properties, approximately 5,700 acres are options for the County's purchase. Approximately 1,700 acres lie on the western side of U.S. 441/SR 7, and approximately 4,000 lie on the eastern side. The final exhibit in Appendix B depicts the resulting suitability analysis, and Exhibit 12 depicts the final areas within the Ag Reserve considered suitable for purchase.

EXHIBIT 11
Exclusion Criteria

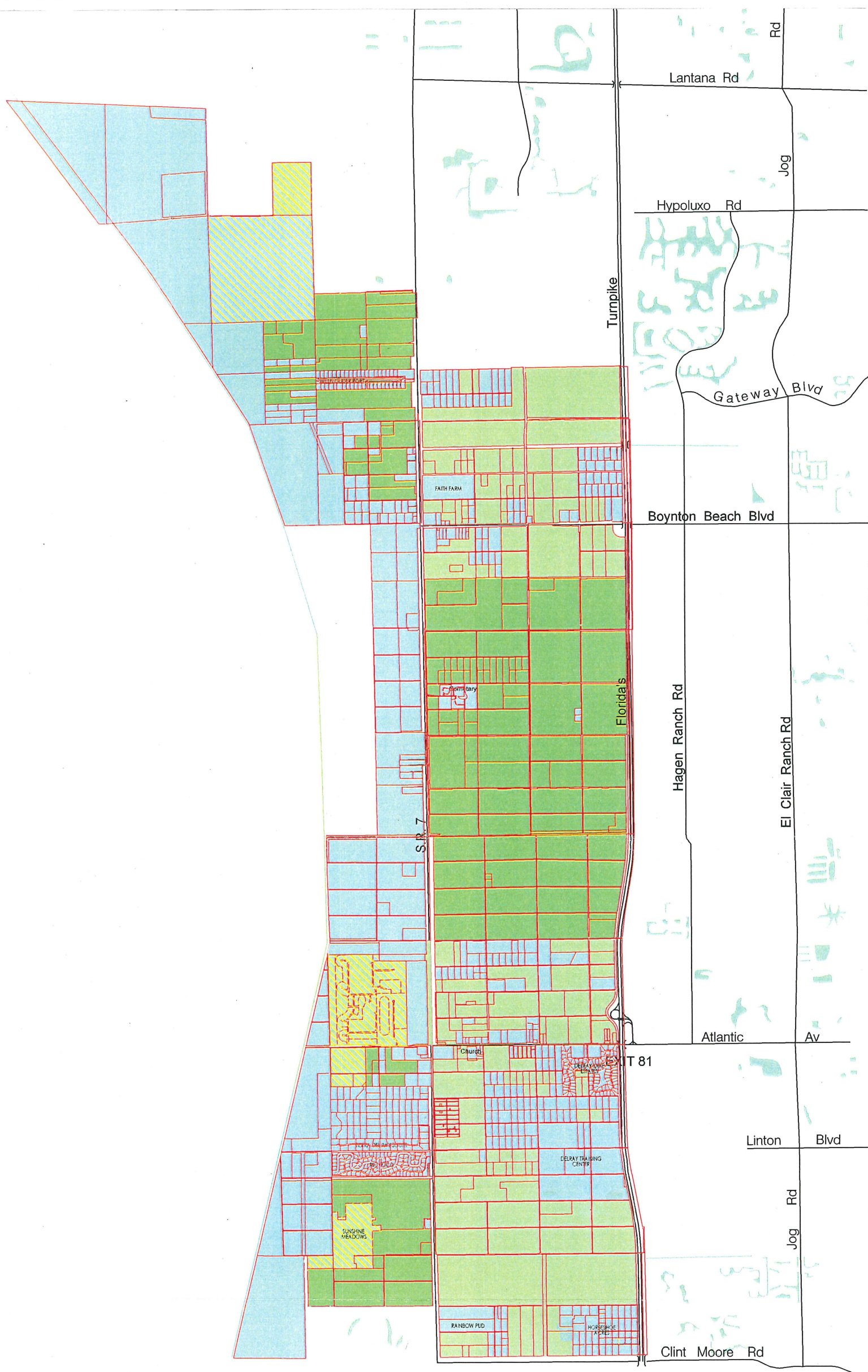
Exclusion Criteria	Explanation	Approximate Area (acres)
Existing and Committed Residential Developments	These properties already have residential development in place or are pending approval by the County. It was presumed that those properties pending approval by the County would be too expensive to purchase with the bond money.	1,100
Institutional Uses (churches, post offices, cemetery, etc.)	These uses already exist in the Ag Reserve and would continue to provide value to the area.	60
Isolated Private Properties Less than 20 acres	Based on the input from the Cooperative Extension Service, properties less than 20 acres generally are not suitable for maintaining a profitable agricultural business.	700
Publicly Owned Property	Includes property owned by Palm Beach County, federal properties, state property, utilities and drainage districts.	4,340
SFWMD Water Preserve Areas	These areas are targeted by the SFWMD and will be more than likely purchased with state funds. Also, these areas will help to enhance the water resources of the Ag Reserve and the neighboring Loxahatchee National Wildlife Refuge.	1,400
Agriculture (Conservation) Preservation Easements	These properties already have conservation easements on them and hence have the development potential removed.	1,400
Other Areas Not Being Considered for Acquisition at this Time	The remaining areas within the Ag Reserve that are near the north and south ends of the Ag Reserve, where there appears to be the highest pressure and probability for development (hence the highest probable property values).	6,300
Approximate Total Area Excluded from Consideration		15,300

4.3.1.2 Properties Suitable for Retention in Agriculture

Since the County's primary objective in directing the Master Plan is to preserve agriculture within the Ag Reserve, it is important to examine criteria focused on the properties desirable for retention in agriculture, but also within the County's control. These criteria include:

- Existing infrastructure for water supply and drainage
- Suitable soils for growing crops

Water Supply and Drainage. The Lake Worth Drainage District (LWDD) lateral and equalizing canals provide infrastructure for water supply and drainage. This extensive network of canals extend throughout the Ag Reserve, and, as they were originally designed, provide adequate water supply and drainage for the area. The water levels in these canals are maintained to serve the agricultural community for water-supply purposes, but are also efficiently designed to capture and convey storm water runoff, making most areas within



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Properties not considered



Initial properties recommended for
potential acquisition



Properties not considered at this time



Development Potential Removed



Scale: N.T.S.

Revision Date: 11/04/99

filename: agrestri.dgn

contact: s.kubber/l.grim
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the Ag Reserve suitable for agricultural production. The only exceptions are the relatively low-lying areas located on the far western fringes of the Ag Reserve near the Loxahatchee National Wildlife Preserve. Fortunately, most of these depressional areas are outside of the initial acquisition horizon depicted in Exhibit 12.

Soils. As part of Phase II of the Master Plan, the County Cooperative Extension Service prepared two review documents of the acreages, crops, and soils of the Ag Reserve: one focused on the area west of U.S. 441/SR 7 and one focused east. Copies of the two reports are included in Appendix C.

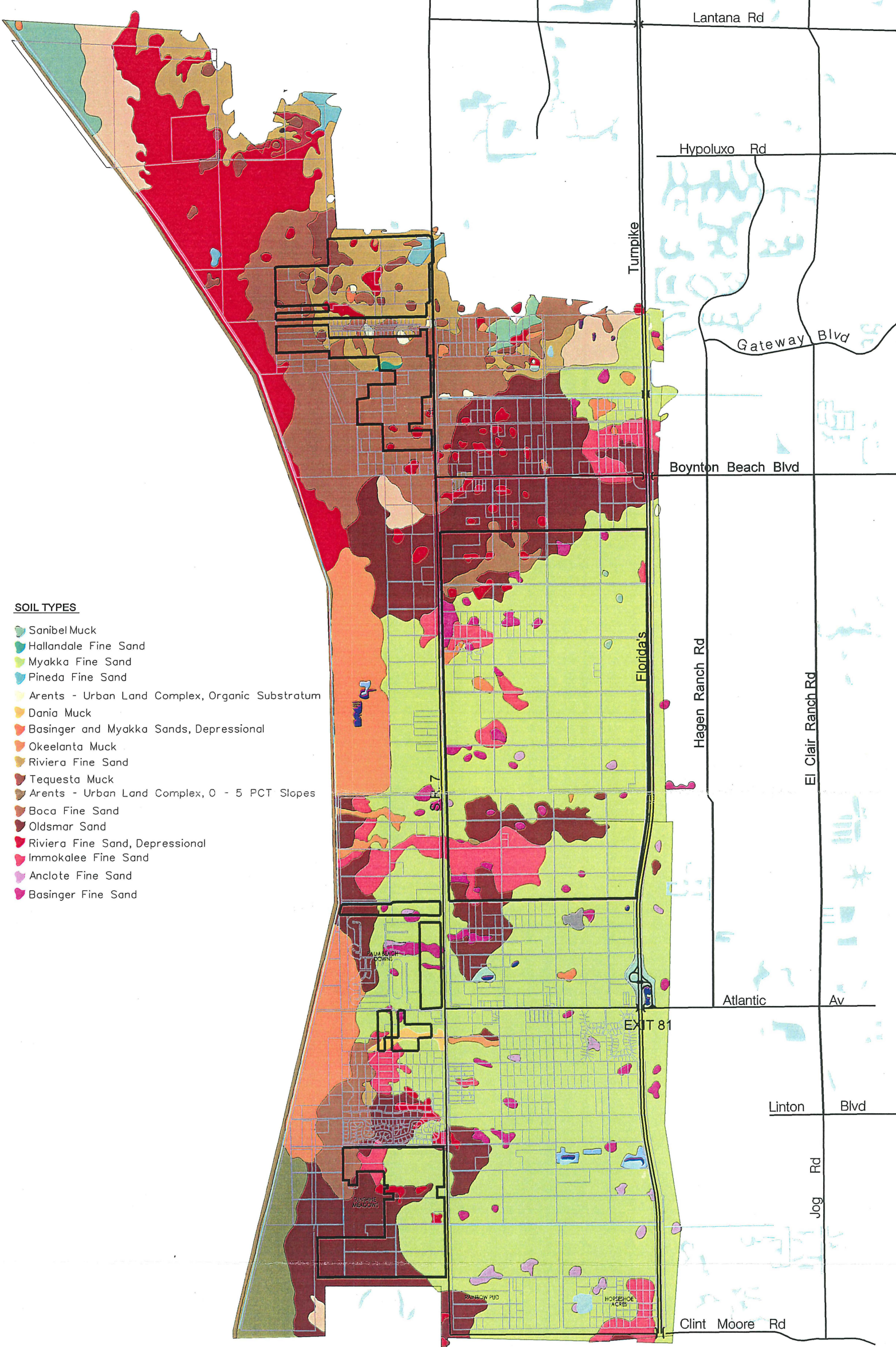
The 1974 Soil Survey of Palm Beach County identified several soil types not appropriate for certain crops. That evaluation was based partly on the fact that certain crops had not been grown on these soils. However, since 1974, the soils named in the Soil Survey have been modified to make it possible to grow any crop presently grown in the County, which in turn suggests these soils can continue to grow various crops. The list below delineates the major soil types and their percentage in terms of total acreage for both the east and west portions of the Ag Reserve. Exhibit 13 depicts the major soils represented in the Ag Reserve. Exhibit 14 delineates soil percentages.

EXHIBIT 14
Soil Percentages

Soil Type	West Side	East Side
Boca Fine Sand	29%	---
Myakka Sand	19%	59%
Oldsmar Sand	17%	21%
Riviera Fine Sand	15%	---

Although low in natural fertility and susceptible to flooding without adequate water control systems, most of this acreage has been under agricultural production for a considerable number of years. Modifications in water control and soil improvements have allowed an appreciable number of row crops to be produced in this area. The production capacity and profitability of this area has been determined by outside market forces rather than by the area's ability to produce an acceptable crop. Experience in farming these types of mineral soils has more than compensated for soil deficiencies, so there is a strong probability that agricultural production can be continued in the future.

It appears that the majority of the properties recommended for purchase meet the criteria for retention in some sort of agricultural activity. Exhibit 13 also illustrates the general areas recommended for purchase. The only exception might be the delineated area in the north-western portion of the Ag Reserve, where there appears to be a large diversity of soil types, of which some are not suitable for agriculture. Much of this area is currently excavated and would not be suitable for retention in agriculture anyway.



SOIL TYPES

- Sanibel Muck
- Hallandale Fine Sand
- Myakka Fine Sand
- Pineda Fine Sand
- Arents - Urban Land Complex, Organic Substratum
- Dania Muck
- Basinger and Myakka Sands, Depressional
- Okeelanta Muck
- Riviera Fine Sand
- Tequesta Muck
- Arents - Urban Land Complex, 0 - 5 PCT Slopes
- Boca Fine Sand
- Oldsmar Sand
- Riviera Fine Sand, Depressional
- Immokalee Fine Sand
- Anclote Fine Sand
- Basinger Fine Sand



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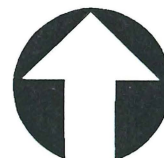


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Initial properties recommended for
potential acquisition from willing sellers



Scale: N.T.S.
Revision Date: 11/01/99
filename: acqsoilall.dgn
contact: s.kubber/l.grim
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4.3.2 Environmental Features

4.3.2.1 Environmentally Sensitive Lands (ESLs)

The ESLs within the Ag Reserve identified by the County Department of Environmental Resource Management (DERM) are shown on Exhibit 7 and are reflected on the Master Plan graphic. The County is considering purchasing these areas, but these potential purchases are being addressed separately by the BCC-appointed Conservation Land Acquisition Selection Committee (CLASC).

4.3.2.2 Future State Park

Given the increased interest in a state park, the Master Plan delineates this future park adjacent to the Arthur R. Marshall Loxahatchee National Wildlife Refuge, just west of SR 7/U.S. 441 near the intersection of Atlantic Avenue, a site that contains a sufficient amount of high ground for the facilities of a state park, while offering opportunities to address the regionally significant resources required to justify state operation of a park. Its location at the end of Atlantic Avenue gives it convenient regional access from the Florida Turnpike. This location limits the size of the state park to between 200 to 400 acres, with uplands and parking. The Master Plan graphic shows the park at 300 acres.

4.3.3 Water Resource Features

4.3.3.1 Canals and Lakes

The graphic shows many canals and lakes interconnected throughout the Ag Reserve. This water system was drawn with "creative license" and is not intended to be constructed exactly as shown. Though this graphic does not represent the true current configuration of the LWDD system within the Ag Reserve, it does depict some of the larger drainage canals (e.g., Boynton, L-30, L-38 and E-2E). This water system, if feasible, would be connected to the South Florida Water Management District (SFWMD) Water Preserve Area (WPA) reservoir and other related water resources features. The actual ability to construct such a system will require further study to determine its viability.

4.3.3.2 Water Preserve Areas (SFWMD)

SFWMD has been investigating the Ag Reserve as a potential WPA location for many years. As part of its investigation of potential WPA sites, SFWMD identified the need for an approximately 1,660-acre aboveground reservoir with a total storage capacity of approximately 20,000 acre-feet (870 million cubic feet) of water located in the western portion of the Ag Reserve. Aquifer Storage and Recovery (ASR) wells with a capacity of 75 million gallons per day and associated pre- and post-water quality treatment facilities located adjacent to the reservoir would also be part of this feature.

The purpose of this WPA feature is to supplement water supplies for central and southern Palm Beach County by capturing and storing excess water currently discharged to the Lake Worth Lagoon. These supplemental deliveries will reduce demands on Lake Okeechobee and the Loxahatchee National Wildlife Refuge. A portion of the WPAs will also be designed to achieve water quality improvements in downstream receiving waters, depending upon pollutant conditions in the watershed.

The size and configuration of the reservoir and surrounding features may change according to WPA Feasibility Study results, which are expected to be available no earlier than April, 2000. On the Master Plan graphic, the reservoir is shown at approximately 1,660 acres, as suggested by SFWMD. The final location of the SFWMD reservoir could change depending on actual land purchases, land availability, possible land trades with Loxahatchee National Wildlife Refuge, and the WPA Feasibility Study.

4.3.4 Development Features

The following features of the Master Plan describe the potential development opportunities proposed for the Ag Reserve.

4.3.4.1 Land With Existing Development Approvals

These areas already have existing development or have approvals for development.

4.3.4.2 Proposed Land for Future Development

These areas show how much land could be developed in the future. Future development is shown in the southern and northern areas established by the framework diagram, because of escalating land prices at the southern end and existing regulations that permit development at the northern end of the Ag Reserve. Future development is expected to follow modified 60/40 and 80/20 development options that will promote better vehicular, pedestrian, and equestrian connections.

To illustrate how future development will be coordinated with open space and water management, Exhibit 10 shows a future hypothetical scenario. In this scenario, development is concentrated into neighborhoods with interconnected streets and blocks. Neighborhoods have civic buildings and small neighborhood parks interspersed among the houses. Open space exists in large areas, not just small fragmented areas. A series of canals and lakes provide regional water management and also provide recreation, restore the native habitat, and improve the area's appearance.

4.3.4.3 Typical Properties Developed at One Dwelling Unit per Five Acres

The County zoned its rural areas like most counties in the United States, with a maximum density of one unit per 5 acres. This strategy is good for reducing traffic and preserving some trees, provided the owner does not clear the whole site, but does not preserve or enhance agricultural uses, open space, or increase the environmental value of the land. Providing one house every 5 acres adversely affects the natural movement of small animals dependent on the land for survival, and the subdivision of larger parcels divided into 5-acre lots forecloses the opportunity for large-scale agricultural uses.

4.3.4.4 Mixed Use Center

To meet the objective of creating a sustainable form of development, the mixed-use center has been suggested for two important areas in the Ag Reserve, one in the north and one in the south.

Currently there are very few housing options for people who choose to live in the Ag Reserve. The mixed-use centers will provide more variety in housing types, giving people of different incomes more choices. The benefit of having places to shop, work, and live all

within close proximity enables residents to take care of daily needs without the use of an automobile, thus reducing traffic. Also, a short drive on a local street network reduces traffic on the regional roads. Reducing automobile dependency often can improve the quality of life for people by saving them time and money. Other benefits include a stronger community bonding between the people who live and work there, and greater community pride.

4.3.4.5 Economic Centers

Many Florida farmers, especially those who own smaller farms, work second jobs. In fact, the 1997 U.S. Census of Agriculture found that 43 percent of Palm Beach County farmers supplemented their income with another job. To accommodate these farmers and provide opportunities for other nearby County residents, the Master Plan incorporates economic centers.

There are two economic centers identified on the plan at the intersections of the Florida Turnpike with Boynton Beach Boulevard and Atlantic Avenue. Like the mixed-use centers, these centers are intended to be employment hubs for the Ag Reserve and the region. Both are located within a quarter mile of Florida Turnpike interchanges. Situating these centers near the Florida Turnpike reduces the impact of traffic caused by regional employees and patrons, yet provides the following:

- A greater variety in job opportunities for the residents of the Ag Reserve than are likely to be found elsewhere in the Ag Reserve. These opportunities could reduce traffic impacts outside of the Ag Reserve.
- A location for businesses that can offer farmers a second job if they need to supplement their income.
- Light industrial uses in two locations that will have the least negative impact on agricultural uses.

4.3.5 Roads

Roads shown on the Master Plan have been drawn schematically. Because of the scale of the graphic, it is impossible to draw the roads at their actual widths. It is not the intent of the graphic to imply any of the design features of the roadways, including the number of lanes, medians, swales, sidewalks, fences, buffer landscaping, or rights-of-way width.

4.3.6 Changes from Phase I

The Master Plan differs from the Phase I *Bond* alternative because of the following changes made by the Consultants:

- The constructed wetlands along the turnpike were removed from the graphic. The Consultants do not want to imply that reconstructing wetlands would not be beneficial to the environment. The wetlands were removed from the graphic because the Palm Beach County Water Utility Department (PBCWUD) will not know if additional wetlands should be constructed until it has completed its current Green Cay constructed wetlands projects.
- The reservoir associated with the future SFWMD's WPAs has been reconfigured using an estimated 1,660 acres, based on new information provided by SFWMD. The reservoir

on the Phase I *Bond* alternative is smaller. The new location shows the reservoir slightly to the north to make room for a possible future state park. As shown in the Phase II Master Plan, the reservoir covers land currently leased by the Department of the Interior for their Fish and Wildlife facility. Trading property would allow the U.S. Fish and Wildlife facility to regain useable land. However, this trade-off has not been negotiated or approved by either party. The location of the reservoir drawn on the Master Plan shows its shape as rectangular as possible, to reduce levee costs.

- The location for a possible future 200-300 acre State Park is shown on the southern edge of the water reservoir.
- Linton Road is shown extending west to SR 7/US441.

These changes were made using feedback from numerous discussions with County staff, agency service providers, and the Consultants after completion of the Phase I work, and represent further refinement of the original *Bond* alternative components.

4.3.7 Other Plan Components and Service Provider Requirements

The plan components not shown directly on the graphic but very important to property owners as they exercise their development rights within the Ag Reserve are described below. Each of these components were determined with the help of specific service providers within the County. Copies of documented service provider requirements are included in Appendix D.

To fully understand the potential needs of the various service providers within the Ag Reserve, the Consultants estimated the maximum number of residential units based on existing regulations and appropriate square footage of retail, office park, and industrial park uses. Land acquisition and future develop approvals are likely to reduce this number. First the Ag Reserve was divided into six areas, and then estimated units and square footages were applied to each area. A maximum development scenario, which is not the vision expressed by the BCC or reflected in the Master Plan, assumed this potential build out:

- No more than 14,000 new residential units
- No more than 500,000 square feet in retail
- No more than 600,000 square feet in offices
- No more than 330,000 square feet in industrial park

The estimated distribution among the six areas is summarized below in Exhibit 15.

EXHIBIT 15
Acreage Distribution

Area	Residential (units)	Retail (ft ²)	Office	Industrial
1	3,720	125,000	206,242	0
2	3,160	125,000	206,242	165,000
3	0	0	0	0
4	4,040	250,000	187,515	165,000
5	2,440	0	0	0
6	640	0	0	0

Exhibit 16 illustrates an aerial view of this potential buildout scenario. Based on the distribution of the development potential, service providers indicated their needs within the area as follows.

4.3.7.1 Service Providers Under the BCC

Fire-Rescue. Palm Beach County Fire-Rescue expressed the need for two new facilities to service future growth in the Ag Reserve to meet the adopted level of service standards. These standards and the location of the facilities are affected by the roadway network pattern, traffic patterns, ingress and egress into residential developments, traffic calming devices, and the location and intensity of commercial hubs. Given the organizational framework of the Ag Reserve Master Plan, one facility should be located in or near the northern mixed-use center and the other in or near the southern mixed-use center.

Libraries. The Palm Beach County Library System believes that the new growth expected for the Ag Reserve can be accommodated with its existing facilities, including those already planned. Completion of the Library System's Phase I expansion program in the Spring of 1997 located four library facilities within a 10 mile radius of the Ag Reserve. Those include Greenacres, West Boynton, West Atlantic Avenue, and Southwest County Regional. The Phase II expansion program includes more than doubling the size of the West Boynton Branch and adding three more branches in the area. These will be in the general area of Hypoluxo and Lyons Roads, Woolbright and SR 7, and Clint Moore Road and Lyons/SR 7.

The residents of the Ag Reserve will also have access to services that include the Bookmobile, Books-by-mail, Telephone Reference, electronic access to the Library's catalog, newspapers, and magazines, and Internet access. As development occurs the library should not be precluded from future sites within the Ag Reserve.

Mass Transit. The effectiveness of Palm Tran servicing the Ag Reserve will depend on the area's eventual build out. The mixed-use centers increase the potential for transit use, more so than were these areas to develop only as residential areas. The future design of Boynton Beach Boulevard, SR 7/US441, and Atlantic Avenue will not preclude bus service along those routes.

Parks and Recreation. The Palm Beach County Department of Parks and Recreation expressed the need for at least one district park 50 acres in size and one community park of at least 15 acres. These parks are primarily needed to provide active recreational facilities and should be built adjacent to a high school and middle schools for the most efficient use of land and cost economy. The Department of Parks and Recreation stated that if the suggested State Park does not materialize, then a regional County park in the Ag Reserve will be necessary, preferably located adjoining the County's Indian Mound Park. Acquisition of approximately 100 acres of adjoining uplands to the east of this property will be needed to develop this park in the future.

Roadways. The Metropolitan Planning Organization (MPO) prepared a series of analyses for estimating the Ag Reserve road capacity (Appendix D). It tested several scenarios using the worst case of "no residential units were retired from the purchase of land from the County (total of approximately 14,000 units)." MPO findings show the expected growth in the Ag



Exhibit 16
Aerial View of a Future Ag Reserve

Reserve should not have a significant impact on the 2020 long-range projected highway demands.

The MPO analysis suggested that both Atlantic Avenue and Boynton Beach Boulevard have two travel lanes in both directions (for a total of four lanes) west of Florida's turnpike and that Lyons Road have two lanes in both directions from Boynton Beach Boulevard north to Lantana Road. South of Boynton, Lyons Road can be one lane in each direction (for a total of two lanes). However, additional turn lanes might be needed at important street intersections. Lyons Road has a right-of-way width of 110 feet.

If the County is successful at purchasing the central Ag Reserve area, Flavor Pict Road may not be needed for capacity reasons but would be beneficial for circulation and access. The MPO suggested that the 110 feet and 120 feet easements remain since Flavor Pict Road is on the County's 2020 Rights of Way graphic, but this road is currently not shown on the 5-year improvement plan and is not targeted with construction funds, so it is not shown on the Master Plan graphic.

Linton Boulevard was added to the Master Plan graphic, extending across the Turnpike to SR 7/US441, because of the anticipated development in the southern part of the Ag Reserve. Linton is a two-lane road with a right-of-way width of 120 feet.

Water Utilities. PBCWUD indicated that it currently has sufficient water treatment and wastewater treatment capacity planned to meet the proposed build out requirements of the Ag Reserve. Water distribution and wastewater collection systems would be accommodated through the PBCWUD's existing developer agreements.

4.3.7.2 BCC-Funded Service Providers

The Palm Beach County Sheriff office expressed the need for one new district facility to service future growth in the Ag Reserve. The Sheriff's Office also stated the need for 35 additional officers to provide law enforcement services in the district and patrol state and County parks in the Ag Reserve.

4.3.7.3 Independent Facilities

School District. Palm Beach County Public School District estimated the number of schools needed to serve the Ag Reserve: one high school, two middle schools, and six elementary schools. As the number of future dwelling units is retired through the purchase of land by the County, the number of schools will decrease, especially elementary schools. For example, for approximately every 1,500 dwelling units that are reduced, one less elementary school will be needed. The following table summarizes the estimated acreage requirements for schools.

Type of School	Number of Schools	Minimum Number of Acres per School	Total Acres
High School	1	50 acres	50
Middle School	2	25 acres	50
Elementary School	6	15 acres	90
Totals	9		190

The schools were not drawn on the graphic because there are many variables and unknowns associated with them. It is important to note that existing policy allows developers to donate land for schools and still include that land as part of their gross acreage and therefore their total density. In other words, no dwelling units will necessarily be retired if a developer donates land for a school. Florida Statutes, Chapter 163, encourages co-locating parks, libraries, and other civic institutions adjacent to schools.

Lake Worth Drainage District. The LWDD supports evaluation of the depicted system of interconnected canals and lakes and its suggested use as an improvement to area water management. LWDD suggested additional analysis be conducted before the conversion of the Ag Reserve system of canals into the depicted water-management system, and offered to lead this investigation with modeling assistance from SFWMD.

SECTION 5

Recommended Action Plan

SECTION 5

Recommended Action Plan

Many of the following action plan recommendations meet multiple Board of County Commissioners (BCC) directed objectives; however, they have been organized according to the objective they appear to meet most. Some of the recommendations included in this section are general in nature. Where applicable, several areas focus on specific changes to the County's Comprehensive Plan and Unified Land Development Code (ULDC).

Many recommendations made through previous reports, such as those by the National Audubon Society (January 1998) and the Center for Economic Competitiveness, SRI International (January 1998), are at the federal and state level and thus outside the direct control of the County. Therefore, only those recommendations applicable to this Master Plan and within the County's control are addressed. The recommended actions are categorized by the six objectives agreed to by the BCC:

- Preserve and enhance agriculture
- Enhance environmental resource value
- Enhance water management capability
- Enhance open space
- Sustainable development
- Minimize costs to taxpayers

5.1 Preserve and Enhance Agriculture

Despite the number and location of properties purchased by the County in the Ag Reserve, many of the agricultural properties in this area will remain privately owned. To encourage the continuation of agriculture on both the private and publicly held properties, the County should proceed forward with the preservation strategies discussed below.

5.1.1. Lease Back Program

For those agricultural properties purchased by the County, the County should develop a plan to give new farmers a way of entering the business through a favorable lease program that works in conjunction with lending institutions, such as the Farm Credit System. This "lease back" program would require input from community members familiar with the local agricultural industry and its needs. It is recommended that a committee be formed to negotiate a lease program. The County should start by reviewing successful lease back programs, such as the programs instituted by the South Florida Water Management District (SFWMD) and partly managed by the Palm Beach Soil and Water Conservation District, and the State of Maryland.

For this program, the County should develop a policy whereby lease funds accrued by the County would be set aside for projects that would continue to enhance the agricultural industry within the Ag Reserve, including development of an agricultural incubator system for new farmers.

5.1.2 Rural Restaurants and Farm Markets

It is recommended that the County provide flexibility within the land use and zoning rules to allow farms to take advantage of their proximity to an urban setting by creating a restaurant or farm market in connection to their farm, though it is recommended that strict rules be created to regulate the relationship between farming and these joint enterprises, in order to protect agriculture. If agriculture begins to diminish within the Ag Reserve, opportunities should be provided to enable packing houses to transition to restaurants, which would assist in retaining the rural feel of the Ag Reserve.

5.1.3 Packing House Conversion

The County should develop a plan for a multi-use farmers market/packing house/coolers/facility, possibly through the purchase of an established packing house, for those agricultural operations remaining in the agriculture sector. Wholesale and retail operations could occur at this facility, the purchase of which could possibly take place in conjunction with the Florida Department of Agriculture and Consumer Services.

5.1.4 Organic Farming

The County should develop a policy setting aside a portion of acquired land for organic use, allowing the 3 years fallow time necessary for certification. Organic products have grown in market demand and command a good price. They also expand a property's agricultural options.

5.1.5 Niche or Specialty Crops

It is recommended that the County promote niche crops or specialty crops consistent with the Governor's Commission for a Sustainable South Florida, and the County's economic development strategy.

5.1.6 Agricultural Educational Center

It is recommended that the County continue to pursue opportunities with Florida Atlantic University (FAU) to develop an Agricultural Education Center in the Ag Reserve. This facility would be set up to provide additional opportunities for South Florida farmers and those interested in agriculture, enabling them to pursue innovative research and development projects. A facility that helped students conduct much of their research in the Ag Reserve would ensure the potential preservation of a great portion of the area. Some land purchased by the County with bond money should be set aside for this center for the potential ventures that would assist those agricultural, equestrian, and environmental endeavors that might be pursued by a university. The need for a specific amount of land for such endeavors has not been projected, since it would depend on the end result of any future planning and eventual development.

5.1.7 Equestrian Facilities

The following recommendations focus on encouraging further development of the equestrian industry within the Ag Reserve:

- 1) Facilitate the equestrian community's involvement in building and running facilities and special events in the Ag Reserve.
- 2) Encourage equestrian residential developments with the following guidelines:
 - a) Such development would vary in lot sizes, including small lots, around ¼ acre, for residents who do not own horses, but consider the proximity to horses a luxury. The development would also include larger lots, 2 to 13 acres, for residents who own horses. Some may even board other horses if their lot is at least 4 acres.
 - b) The development should offer more recreational activities than just equestrian, giving residents more options. This diversity is common among successful developments that have equestrian facilities.
 - c) Successful equestrian developments also should have an extensive network of bridle paths. These do not have to be of common ownership but can be established with easements among the property owners at the time of platting. The paths should all lead to centralized facilities where common expenses can be shared. This approach has been successful in other developments, such as Hunt Club Farms, a 621-acre development in Illinois, which has 12 miles of bridle paths.
 - d) Equestrian developments should be required to develop a management plan, but should not be approved without a commitment from a strong and experienced management team or leader.

5.2 Enhance Environmental Resource Value

In addition to preserving agriculture, another major objective of this Master Plan focuses on enhancing the environmental resource value of the Ag Reserve. These recommended actions are therefore focused on this principle objective.

5.2.1 Environmentally Sensitive Lands

It is recommended that the County purchase these Environmentally Sensitive Lands (ESLs) in the Ag Reserve with money from the Bond referendum to enhance the environment and to integrate its preservation into the overall open-space focused theme of this Master Plan.

5.2.2 Future State Park

The County should work closely with the SFWMD, the State of Florida, and U.S. Fish and Wildlife to develop the most feasible location for placing a state park in the southwestern portion of the Ag Reserve, near the Loxahatchee National Wildlife Refuge and the SFWMD's Water Preserve Areas (WPAs). This park should be designed to take advantage of the nearby environmental features of the Wildlife Refuge, and should be focused on providing passive recreational activities, such as hiking, nature walking, bird watching, and canoeing. Also, the park should be physically connected to the proposed WPAs, particularly the approximately 1,660-acre reservoir. If the County is successful in working with these agencies to develop a State park in this area, it could avoid building a County Regional Park.

5.3 Enhance Water Management Capability

A third major objective for this Master Plan focuses on the enhancement of the water management capability within the Ag Reserve. Many of the primary actions regarding this objective focus on the SFWMD and the Lake Worth Drainage District (LWDD); however, because these actions ultimately affect the County, some coordination efforts are recommended.

5.3.1 Water Preserve Areas

Since the SFWMD is moving forward with the purchase and eventual design and construction of WPAs along the eastern fringe of the Loxahatchee Wildlife Refuge, the County should work closely with them to ensure that the County's interests are represented. A land swap between SFWMD and U.S. Fish and Wildlife may be necessary to build the reservoir in an efficient and therefore less costly manner. A SFWMD land purchase to the east and north of the existing U.S. Fish and Wildlife facility would disrupt U.S. Fish and Wildlife very little.

The current Ag Reserve Master Plan portrays the State park in the southern portion of the SFWMD's current WPA boundaries. This proposed location would shift the SFWMD-proposed WPA north into Section 1, T46S, R41E, and onto land currently owned by the federal government as part of the Loxahatchee National Wildlife Refuge. From very preliminary discussions with SFWMD staff, the graphic of the reservoir depicted in this Master Plan appears to be viable, contingent upon the federal government agreeing and providing/selling the necessary lands in Section 1 to the SFWMD, so that the reservoir footprint can maintain its current shape. As a result, it is critical that the County stay involved in the decision-making process regarding the locations of both the WPA and the State park.

5.3.2 Integrated Water Management System

Because the canal and waterways shown on the Master Plan graphic depict a system of interconnected canals, lakes, and waterways that are different than the current system of canals operated and maintained by the LWDD, the County should work closely with SFWMD and LWDD to determine the system's technical feasibility. SFWMD initiated the idea of developing a more aesthetically pleasing system of canals and waterways in the Ag Reserve that would be tied to its proposed WPAs, yet not detract from the overall LWDD objectives of drainage and water supply. As a result, SFWMD has agreed to take the lead on this effort, and therefore should begin working with both the County and LWDD to conduct the necessary feasibility and engineering analyses, including modeling, immediately following the completion of the WPA Study, which is scheduled to be completed in April 2000. Until feasibility is determined, the County should amend the ULDC to define the WPAs as those that have been identified by the SFWMD in their WPA Feasibility Study.

Finally, if the SFWMD and LWDD determine that an integrated water system similar to that shown on the Master Plan graphic is technically and financially feasible, the County should work with these agencies to modify the Stormwater Management requirements of the ULDC (pp. 8-43-51).

5.3.3 Turnpike Aquifer Protection Overlay (TAPO)

The County should amend the Comprehensive Plan to extend the Turnpike Aquifer Protection Overlay (TAPO) boundary further west to the east side of the Lyons Road alignment. The TAPO currently extends west to the eastern edge of the Florida Turnpike, south to Atlantic Avenue in Delray Beach, and north to Southwest 22nd Avenue in Boynton Beach. The *Southeastern Palm Beach County Water Resources Strategy* (1998), co-funded by the Palm Beach County Water Utility Department (PBCWUD) and SFWMD, recommended that the County consider expanding the TAPO to take advantage of the highly productive portion of the underlying surficial aquifer and to secure future well sites for increased water demand and capacity requirements. Once the County determines the final alignment for Lyons Road, the TAPO legal description in the ULDC (pp. 6-214-215) should be changed.

5.4 Enhance Open Space

Enhancing the open space in the Ag Reserve is another important objective of this Master Plan. These recommendations focus on the open space aspect of the Ag Reserve, but as would be expected, they also relate to preserving and enhancing agriculture, which is a form of open space.

5.4.1 Bond Money Purchases and PACE Program

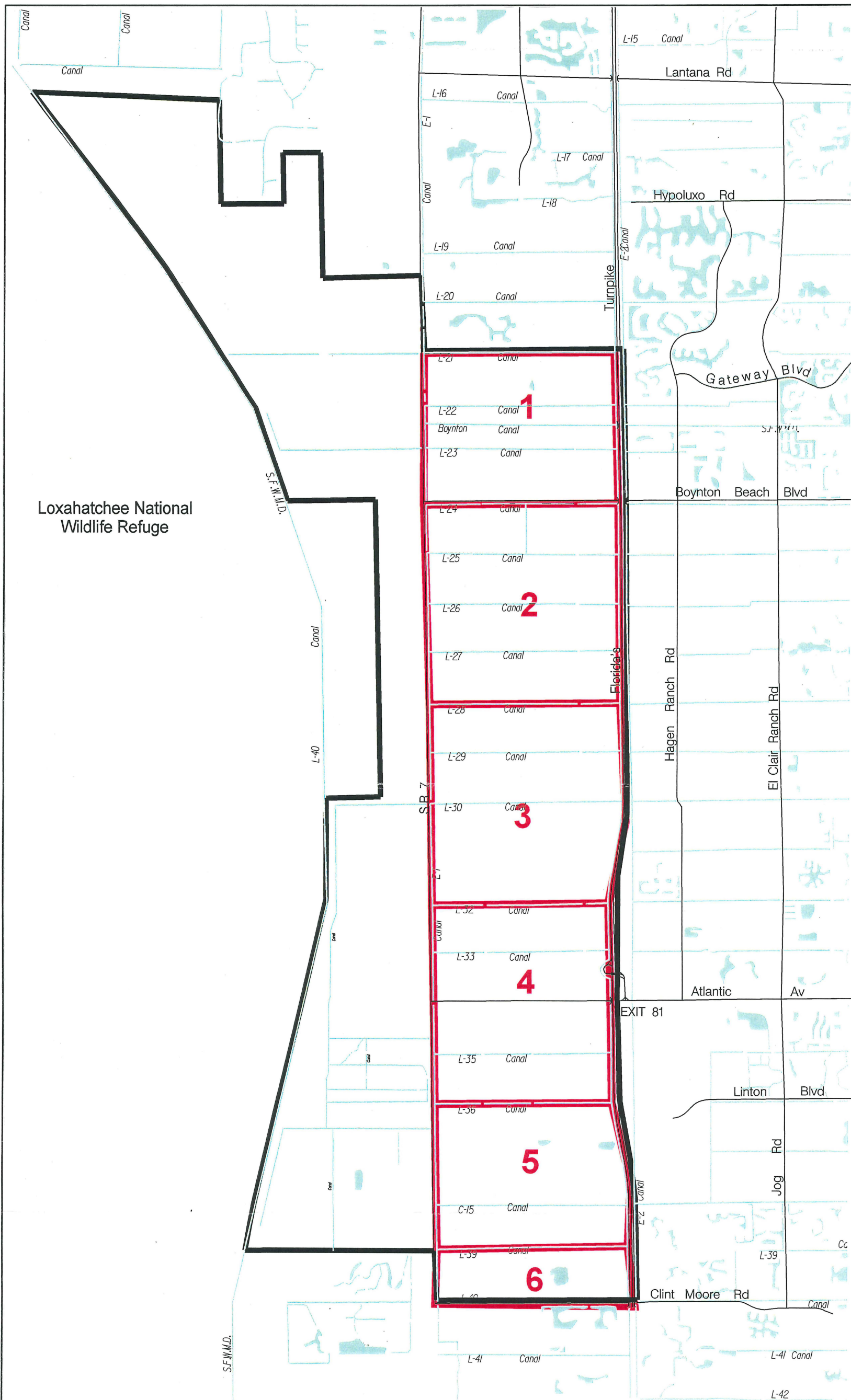
Now that the areas within the Ag Reserve have been identified for purchase (Exhibit 17), it is recommended that the County move forward through the BCC-appointed Conservation Land Acquisition Selection Committee (CLASC) to purchase the lands on a fee-simple basis from willing sellers. It is also recommended that the County develop a public relations campaign that outlines the benefits of the County's purchase of the land in an effort to further persuade land owners to sell their properties within the identified areas.

Although the County's Purchase of Agricultural Conservation Easements (PACE) program was developed with good intention, because of the lack of interest from existing land owners and seed money from the County, the program has stagnated. Therefore, since the County plans to move forward with the fee-simple purchase of properties within the Ag Reserve to preserve open space, with the ultimate intent to preserve agriculture through some of the above recommendations, it is further recommended that the PACE program be abandoned in favor of purchasing land.

5.4.2 Open Space Management Plan

For those properties within the Ag Reserve that have been purchased with the Bond money, but for unforeseen reasons cannot be retained for agriculture use through a lease-back or similar program, the County should develop an open space management plan. The County Department of Environmental Resource Management (DERM) has already developed a management plan for ESLs; therefore, it is recommended that the County modify this plan to provide additional requirements to address maintaining these formerly agricultural properties as open space.

Privately-held properties, either as part of the agricultural lease-back program or as a Planned Development District, should have an open-space management plan developed



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NOTE: MAP IS NOT OFFICIAL, FOR PRESENTATION PURPOSES ONLY

Ag Reserve Boundary -----

Potential Development Areas 1



Scale: n.t.s.

Date: 09/30/99
filename: agreserve.dgn
contact: s.kubber



**Planning
Zoning
&
Building**

100 Australian Avenue
West Palm Beach, FL 33406
Phone# (561) 233-5000

Exhibit 17

Potential Development Areas in the Ag Reserve

that is consistent with those developed for the government-owned properties. These plans should be reviewed and approved by DERM. Otherwise, these property owners should deed over the land to the respective public entity.

5.4.3 Maintenance of Existing Density Provisions for Open Space

It is recommended that the County not change either of the following two items in the *Palm Beach County Comprehensive Plan*, Land Use Element. These items represent previous efforts to reduce development impacts in the Ag Reserve.

1. The option of 1 unit per 5 acres should remain. [Comp Plan page 35-LU]
2. The overall density should remain at 1 unit/acre when someone chooses the 60/40 or the 80/20 development option. [Comp Plan page 35-LU & 36-LU]

5.4.4 Enhanced Views to Open Space

Highway billboards should not be permitted in the Ag Reserve because they create visual clutter. Scenic roadways, such as Lyons Road and SR7/US441 should offer views of the countryside. To do this, scenic roadways should not be lined with landscaped berms taller than 5 feet, nor should there be buffer walls within 150 feet of the roadway. If property along scenic roads is developed, the fronts of houses should face the roads, not back up to them, and should have a deep setback of 100 feet.

5.4.5 Golf Courses in Protected Areas

Free standing golf courses should be allowed in the Ag Reserve, provided:

1. The development rights are eliminated from the land in perpetuity,
2. The property becomes designated as protected open space, and
3. The application is not associated with an application for new residential or mixed-use development using the 60/40 option.

However, golf courses should not be allowed on land designated with existing agricultural conservation easements. This is an incentive to obtain additional conservation easements in the Ag Reserve. The golf course land use needs to be added to the ULDC list of permitted land uses allowed for areas that have agricultural conservation easements.

For golf courses within developments using the 60/40 option, the restriction in Section 5.2, b) (2)page 36-LU, that implies that 100 percent of a golf course has to be contained within the development area should be modified. Up to 25 percent of the protected area to be used for a golf course should be allowed, provided that:

1. The protected area of the Ag Reserve-Planned Development District (AgR-PDD) is contiguous to the development area, and
2. The golf course is constructed as a core course, instead of having fairways interspersed between house lots.

5.5 Sustainable Development

The following actions regarding future development in the Ag Reserve are very specific and are directed towards changing the codes that affect the physical design of neighborhoods and commercial centers. The purpose of these actions is to meet the objective of creating a sustainable form of development in the Ag Reserve and to reduce overall costs to County taxpayers. These actions are intended to help the County planning and zoning staff with modifying the appropriate codes, should the BCC direct them to do so. The actions here are not all inclusive. Specifically, there are many aspects that will require further study before a code revision is complete.

Density and land-use rights in both Palm Beach County's Comprehensive Plan or the ULDC should not be decreased. Such reductions might invite unnecessary and costly lawsuits by property owners.

5.5.1 Comprehensive Plan

The Comprehensive Plan's objectives should be modified to reflect the objectives of this Master Plan, one of which is for future development to be sustainable. This objective requires an interconnected network of streets for better traffic and pedestrian mobility, a good mix of land uses that can serve the needs of the community, buildings designed so they can easily change uses over time, and places to live where people of different means can find affordable housing. The additional actions steps suggested in this section all work toward the goal of sustainable development.

The following changes should be made to the Comprehensive Plan. These items are new provisions to enhance the previous efforts to preserve open space for agricultural uses.

5.5.1.1 Buffer Zones and Residual Parcels

The language for the 60/40 development option should be modified to resolve the following site design problems that arise when using the existing rules regarding the buffer zones between residential and agricultural, and between residential and environmentally sensitive lands:

Problem No. 1: "Moats"

The requirement of locating water areas as a buffer (2,d,1 page 38-LU) forces developers to build a "moat" around the development areas. This greatly discourages the opportunity to make vehicular and pedestrian connections, and to provide bridle paths between adjacent developments.

Problem No. 2: Wasted Land Between Double Canals

This is related to Problem No. 1; when a development abuts an existing canal and the development has to use its water retention areas as a buffer along the canal, a wasteful strip of land is needed to separate the retention area from the existing canal.

Solution

Remove the language in Section 2,d,1 on page 38-LU that requires water areas in 60/40 developments to serve as a buffer. This will also allow water features to become better amenities within the internal areas of the development.

Solution (same as for Problem No. 1 above)

Remove the language in Section 2,d,1 on page 38-LU that requires water areas in 60/40 developments to serve as a buffer.

Problem No. 3: Excessive Effective Buffer within Environmentally Sensitive Lands

This is also somewhat related to Problem No. 1; when a development abuts land designated as environmentally sensitive, it has to provide a 50-foot-wide buffer of native vegetation. Consequently, when adding the water system and the 50-foot-wide native vegetation into one buffer, its effective width becomes much larger.

Solution (same as for Problem No. 1 above)

Remove the language in Section 2,d,1 on page 38-LU that requires water areas in 60/40 developments to serve as a buffer.

Problem No. 4: Perimeter Buffer Requirements in New Developments

As the first few developments get underway, they are essentially required to provide buffers completely surrounding their development areas because every property around them has an agricultural use. Typically, site planners will back the house lots up to the buffer and not provide "stub" streets for future road connections. However, over time many of the neighboring areas may also develop. The problem of connecting streets and pedestrian and bridle paths arises because the first development had not set aside land or easements for these future connections.

Solution

Require that for developed areas in a 60/40 option, stub streets or easements for cross access shall have to be provided at a minimum distance of every ¼ mile at the time of platting. Language allowing these streets or easements to cross the buffer zones will have to be added. This solution will better assist **Policy 1.2.1-c** in the Ag Reserve, prohibiting residual parcels.

5.5.1.2 The 60/40 Development Option

A limited amount of non-residential uses should be provided for properties exercising the 60/40 development option. The locations for these uses will be determined by the type of AgR-PDD used by the developer. The amount of non-residential developments in the entire Ag Reserve should be limited to 500,000 square feet of retail, 600,000 square feet of office, and 330,000 square feet of industrial uses. The amount of civic uses should not be restricted within the two development areas. Outside the developed areas, civic uses should be limited to public health and safety service providers. Non-residential uses should be awarded on a first-come, first-serve basis. Once the total limit has been built or approved, no additional non-residential uses should be granted.

It should be decided whether future development should have a rural character. Appendix E illustrates a few examples of developments with a rural character for reference. If BCC finds this effect desirable, BCC should direct staff to define and establish architectural and site planning guidelines for developers building within the Ag Reserve. These guidelines may include suggestions for setbacks and landscaping along certain scenic roads, as well as fence types and building details.

The text in the Comprehensive Plan should be modified so that the minimum size of the developed area and the location requirements shall be based on the type of AgR-PDD used by the developer.

5.5.1.3 New Ag Reserve PDD (AgR-PDD) Designations

Additional sections following the AgR-PUD Section on page 38-LU should be added to describe three new designations that shall use the 60/40 development option:

- AgR-PRD (Ag Reserve - Planned Residential Development),
- AgR-TMD (Ag Reserve - Traditional Marketplace Development), and
- AgR-EDC (Ag Reserve - Economic Development Center)

These designations will have to:

1. Meet the same six provisions that are identified for AgR-PUD on pages 38-LU and 39-LU, items 6a –6f;
2. Be added to the ULDC; and
3. Meet the site planning requirements specified in the ULDC.

Table 2.4-1, Mixed-Use Development Patterns, on page 63-LU, should be modified to allow PDRs, and TMDs in the Ag Reserve.

5.5.1.4 New AgR-PRD (Planned Residential Development) Designation

This designation applies only to 60/40 developments located south of Atlantic Avenue or north of Boynton Beach Boulevard and east of SR7/US441, and is in response to Policy 1.2.1-g, that allows a limited amount of low intensity commercial and institutional uses intended to serve the residential development.

1. The minimum lot size requirements should be lowered in the area to 40 acres for the developed area of an Ag Reserve-PRD (60/40). Also, the frontage requirements necessary to qualify for properties in this area should be removed. However, to qualify for these lower thresholds, the preserved open space shall have to be located either west of SR 7/US441 or in the "central" Ag Reserve, as determined by County staff, roughly between Boynton Beach Boulevard and Atlantic Avenue and east of SR 7/US441. The preserve areas shall also be contiguous with existing preserve areas. Lowering this threshold provides property owners the 60/40 option that previously might only have been able to develop the property under the 80/20 option. Therefore, this action will reduce the perceived inequity between the two options. The 80/20 option will remain in areas where residential development is not preferred.
2. For the areas in the Ag Reserve other than those mentioned above, the Mixed-Use Centers, and the Economic Centers, should retain the current restriction of a minimum of 250 acres and the frontage requirements.
3. County staff should be directed to create the requirements for AgR-PRDs in the ULDC. Developments shall follow the requirements specified in the ULDC.
4. Non-residential uses should be limited to a corner store, a daycare center, a community center/club house, a place of worship, or a small restaurant. These entities can serve as a neighborhood focus, particularly if these establishments are accessible by foot, bike, or horse. These uses should be permitted on collector roads, provided they are spaced no closer than ½ mile and have direct vehicular and pedestrian access to residential streets.

5.5.1.5 AgR-TMD Designation (Traditional Marketplace Development)

This designation applies only to 60/40 developments located within the Mixed-Use Centers of the Ag Reserve Master Plan. As illustrated in Exhibit 18, mixed-use centers should provide a mix of neighborhood-serving shops, offices, civic institutions, and housing. This is in response to Policy 1.2.1-d, that allows a concentrated area for shopping, entertainment, business, services, cultural, and housing opportunities, and Policy 1.3-e that directs future commercial areas on the Future Land Use Atlas to be something other than strip commercial.

1. Two new areas should be described within the Ag Reserve called Mixed-Use Centers, in which properties can only be developed using the Ag Reserve-TMD (60/40) development option. Commercial and office uses in mixed-use centers should comply with Commercial Low Intensity uses, as specified in the Comprehensive Plan and the ULDC.
2. One mixed-use center shall be located within ¼ mile of Boynton Beach Boulevard and Lyons Road. The second will be within ¼ mile of Atlantic Avenue and Lyons Road. Other requirements for the mixed-use centers should include:
 - a) A minimum size requirement of 10 acres should be required for the developed area of an AgR-TMD (60/40) parcels. In addition, the minimum preserved open space should be 15 acres and located either west of SR 7/U.S. 441 or in the "central" Ag Reserve, as determined by county staff, roughly between Boynton Beach Boulevard and Atlantic Avenue and east of SR 7/U.S. 441. The preserve areas shall also be contiguous with existing preserve areas.
 - b) Up to 10 percent of the open space may be in the form of village squares or greens, surrounded by the development area, and need not be contiguous.
 - c) The properties, partially within the mixed-use center and less than 40 acres, shall have their entire development area within the designated mixed-use center.
 - d) All provisions regarding the mixed-use centers are met as specified in the ULDC. These provisions will need to be added to the ULDC.
3. The description of the mixed-use centers should be modified to allow the commercial and office uses in addition to the maximum one dwelling unit (DU) per acre, providing they are meeting vertical integration and good interconnectivity of streets to reduce traffic. The amount of non-residential uses should be specified in the ULDC. This specification will hopefully act as an incentive for developers to build a true mix of uses with moderate and affordable housing. However, if the units are not used because only non-residential buildings were constructed, or because the entire allowed quantity of units were not built, the remaining units can not be transferred outside of the mixed-use center nor anywhere else in Palm Beach County.

5.5.1.6 For the New AgR-EDC Designation (Economic Development Centers)

This designation applies only to 60/40 developments located within the Economic Centers of the Ag Reserve Master Plan. This is in response to Policy 2.2.4-a, which allows a campus-like office and research park that may contain uses for manufacturing, assembly of

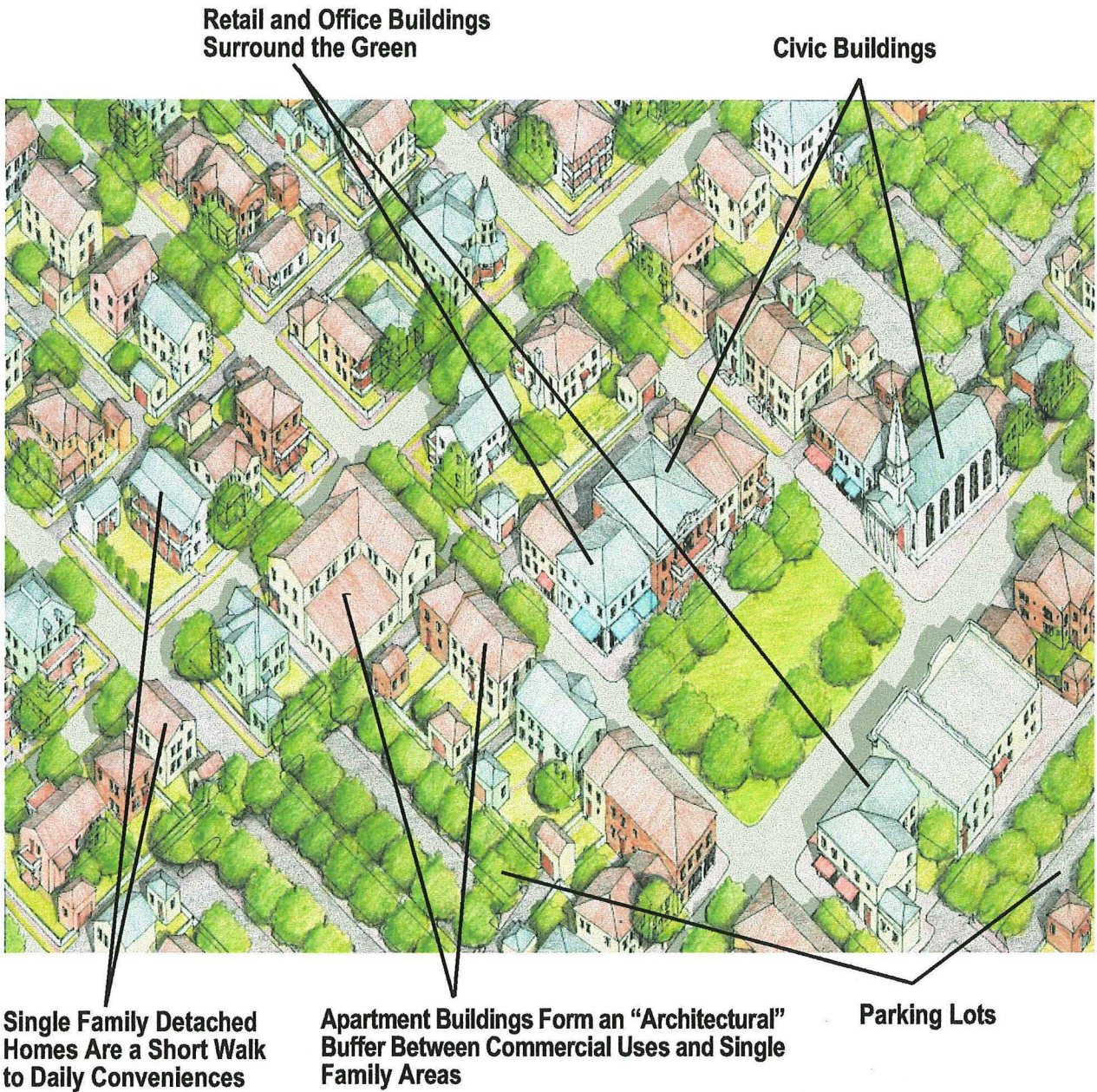


Exhibit 18
Example Mixed Use Center

products, processing, office, research and development, and wholesale distribution and storage of products. Residential should also be permitted in an AgR-EDC. The following actions are recommended:

1. Two additional areas should be described within the Ag Reserve called Economic Centers. These may be single-use or mixed-use employment centers with a limited amount of office and industrial uses. These Economic Centers shall be located within ¼ mile from the interchanges of the Florida Turnpike and either Boynton Beach Boulevard or Atlantic Avenue. The same rules apply regarding 60/40 development constraints for the Economic Centers as for the Mixed-Use Centers.
2. All provisions regarding AgR-EDCs in economic centers shall be met as specified in the ULDC. These provisions should be added to the ULDC.

5.5.2 Unified Land Development Code (ULDC)

There are many changes and additions to the ULDC that are necessary to affect the way more sustainable future development can be achieved within the Ag Reserve. These have been categorized by topic below. To implement these modifications, the BCC should direct County staff to change to the ULDC as described below.

5.5.2.1 Planned Development Districts

1. The necessary additions and changes should be added to the ULDC to make it consistent with the suggested changes above for the Comprehensive Plan.
2. Three new planned development districts called AgR-PRD, AgR-TMD, and AgR-EDC should be added to the ULDC. These new planned development districts will establish criteria for any new 60/40 development options exercised in the Ag Reserve. The use of these planned development districts should be required for all future developments using the 60/40 option in the Ag Reserve. Details should be included that show the differences between the newly designated mixed-use centers, economic centers, and those elsewhere in the Ag Reserve.
3. The AgR-PUD should remain in the code, but should not be permitted for any new development. Removing it would cause an existing development, or one with approval, but not yet built, to have a non-conforming designation, and could thus cause a hardship if re-financing is needed.

5.5.2.2 Land Uses

1. The statement on page 6-165 (6.5, J,1) of the ULDC restricting land uses to only residential and agricultural should be modified to coincide with the same modification suggested for the Comprehensive Plan.
2. The following list of **Neighborhood Serving and Specialty Retail** should be allowed in the Mixed-Use Centers and the Economic Centers of the Ag Reserve:
 - a) Antique Shops, Crafts Shops
 - b) Agriculture, Commercial
 - c) Animal Kennel
 - d) Art Galleries
 - e) Athletic/Health Clubs, Gyms
 - f) Auction House
 - g) Bakery, Retail and Wholesale

- | | |
|---|---|
| h) Banks, excluding drive-in teller service | cc) Grocery/Supermarket |
| i) Barber, Beauty Shops | dd) Hardware/Home Improvement Stores |
| j) Barbecue Stands/Pits, upon approval | ee) Junior Department Stores |
| k) Bars, Lounges | ff) Karate School |
| l) Bed and Breakfast Inns | gg) Locksmith |
| m) Bookstores | hh) Newsstands |
| n) Cabinet, Carpenters Shops | ii) Office Supply and Equipment |
| o) Car Wash | jj) Package Stores |
| p) Catering | kk) Personal Services |
| q) Child Day Care Centers, Nursery | ll) Pet Shops and Dog Grooming |
| r) Clothing | mm) Pharmacy, Drug Store |
| s) Convenience Store | nn) Photographic Studio |
| t) Delicatessen | oo) Record/CD Stores |
| u) Dry Cleaning, Laundry | pp) Retail |
| v) Electronics, Appliances and Repair | qq) Restaurants, fast food, no drive-thru |
| w) Flea Market, enclosed and open air | rr) Restaurants |
| x) Florist, Plant Shop | ss) Studios for Artists and Musicians |
| y) Furniture Stores | tt) Tailor Shops |
| z) Game Room, Arcade, Pool Hall | uu) Veterinarian Clinic |
| aa) Gas Stations | vv) Video, and DVD Rentals/Sales |
| bb) Gift shops | ww) Western Wear/Tack Store |
| | xx) Upholstery and Furniture Repair Shop |

3. The following list of **Office Uses** should be allowed in the Mixed-Use Centers and the Economic Centers of the Ag Reserve:

- | | |
|--------------------------------|------------------------|
| a) Data Information Processing | d) Government Services |
| b) Employment Service | e) Medical |
| c) Financial Services | f) Professional |
| | g) Real Estate |

4. The following list of **Commercial Entertainment Uses** should be allowed only in the Mixed-Use Centers of the Ag Reserve:

- a) Bowling Alleys
- b) Cinemas
- c) Skating Arenas
- d) Theater, Community
- e) Aquatic Centers

5. The following list of **Industrial Uses** should be allowed only in the Economic Centers of the Ag Reserve:

- | | |
|--|---|
| a) Auto Repair, Detailing, Paint and Body Shop | k) Gun Clubs, enclosed |
| b) Automobile Rentals | l) Laboratories |
| c) Bottling Plant | m) Landscaping Service |
| d) Brewery | n) Light Fabrication |
| e) Broadcasting Stations and Studios for Radio or TV | o) Lumber Yards |
| f) Cabinet Working and Carpentry Shops | p) Machine or Welding Shop |
| g) Catering Services | q) Mini Warehouse/Self Storage |
| h) Contractor's Storage Yards | r) Motion Picture Production Studios |
| i) Farm Equipment Repair | s) Ornamental Metal Workshops |
| j) Glass Installation Services | t) Printing Shops |
| | u) Technical Trade Schools |
| | v) Utility Work Centers, Power and Telecommunications |

6. The following list of **Civic Uses** should be allowed anywhere within the Ag Reserve:

- | | |
|-------------------------------------|--|
| a) Data Information Processing | i) Schools: Public, Special, Private, Charter |
| b) Cemetery | j) Solid Waste Transfer Station |
| c) Fire | k) Water or Wastewater Treatment Plant |
| d) Hospital, Medical Clinic | l) All other civic uses permitted within existing residential zoning districts |
| e) Parks, passive | |
| f) Parks, active | |
| g) Police Stations and Sub-stations | |
| h) Religious Facilities | |

7. The following list of **Agricultural Uses** should be allowed on land that does not have an agricultural easement within the Ag Reserve, provided there are required buffers from residential uses:

- | | |
|---|---|
| a) Ag, Bona Fide | n) Farm Residences |
| b) Ag Related Manufacturing | o) Farm Workers Quarters |
| c) Ag Research and Development | p) Feed Store |
| d) Ag Sales and Services, small implements | q) Fertilizer Sales: Fertilizers, manure, compost shall be kept at least 200 feet from residential development. |
| e) Ag Transshipment | r) Fish Pools |
| f) Blacksmith/Livery Stables | s) Food Processing |
| g) Chipping & Mulching | t) Fruit Packing and Fruit Preserving |
| h) Community Gardens | u) Fruit and Vegetable Retail Stands |
| i) Composting Facility | v) Green Market |
| j) Distribution Facilities | w) Grooms Quarters |
| k) Equestrian Boarding, commercial and private | x) Livestock Raising |
| l) Dude Ranches and Riding Academies, with approval | y) Milk Production and Distribution |
| m) Fallow land | z) Pasture |
| | aa) Plant Nursery |
| | bb) Potting Soil Manufacturing |

- cc) Rodeo/Equestrian Arenas
- dd) Refrigerated Storage
- ee) Rural Restaurants, (quality restaurant)
- ff) Seed Drying Facility
- gg) Saddlery
- hh) Wholesale Retail of Agricultural and livestock products

8. The following list of uses should be allowed in areas within the Ag Reserve that have agricultural conservation easements:

- a) Ag, bona fide
- b) Ag Transshipment
- c) Blacksmith/Livery Stables
- d) Caretakers quarters
- e) Chipping and Mulching
- f) Community Gardens
- g) Composting Facility
- h) Distribution Facilities
- i) Dude Ranches and riding academies
- j) Equestrian Boarding, commercial and private
- k) Fallow Land
- l) Farm Residence, limit one
- m) Fertilizer Sales: fertilizers, manure, compost shall be kept at least 200 feet from residential development.
- n) Fish Pools
- o) Fruit Packing and Fruit Preserving
- p) Golf Courses
- q) Grooms Quarters
- r) Livestock Raising
- s) Milk Production and Distribution
- t) Parks, passive
- u) Pasture
- v) Plant Nursery,
- w) Potting Soil Manufacturing
- x) Rodeo/Equestrian Arenas
- y) Seed Drying Facility
- z) Saddlery
- aa) Uplands and Wetlands
- bb) Water Preserve Areas, as designated by the SFWMD

9. The following uses should be allowed, but only with special permission:

- a) Communications Towers, Antennas
- b) Electrical/Telecommunications Sub-stations

10. None of the following residential unit types should be prohibited:

- a) Apartments above shops
- b) Apartments in buildings
- c) Row houses/Townhouses
- d) Accessory Dwelling units
- e) Guest Cottages
- f) Single Family Detached Houses
- g) Adult Congregate Care Facilities

11. The following **temporary** uses anywhere within the Ag Reserve, but only with special permission:

- 1. Cultural Fairs
- 2. Outdoor Festivals or Music Concerts

5.5.2.3 The New AGR-PRD Designation

1. For General Site Design Parameters:

- a) Regarding Density and Thresholds:
 - i. There should be no density bonuses for Ag Reserve-PRDs.
 - ii. Institute the same minimum standards as Ag Reserve-PUDs. However, setbacks may need to change.
- b) The range of housing should be increased from the PUD requirements found on Page 6-262: B,4,a,(6),(c)). The excess of 75 acres and 300 units should be changed to something less, such as "in excess of 5 acres and 10 units." Also, an additional unit type should be required for every additional 5 acres, which will greatly reduce the "cookie cutter" effect.
- c) Regarding street layout and design:
 - i. Section 8.22,A,14; page 8-38, should be changed to disallow cul-de-sacs throughout the Ag Reserve.
 - ii. At least one dead-end street or "stub out" should be required in each of the four cardinal directions for future connections between neighborhoods. These "stub outs" should extend to the parcel or property line at the time of the development's completion. Stub outs are not required to cross the preserved open space set-aside between the buildable area and a distant parcel or property line.
 - iii. New developments should be required to connect their streets to the "stub outs" of their existing neighbors.

5.5.2.4 Regarding the New AGR-TMD Designation

1. For General Site Design Parameters:

- a) Regarding Density and Thresholds:
 - i. There should be no density bonuses for Ag Reserve-TMDs.
 - ii. There should be no minimum dimensional requirements for the widths and depths of subdivided lots within the Ag Reserve-TMDs in Mixed-Use Centers.
 - iii. There should be no minimum open space requirements within the developed areas of Ag Reserve-TMDs in Mixed-Use Centers.
 - iv. The maximum floor area ratio (FAR) for commercial, office, industrial, or Mixed-Use buildings in the Ag Reserve-TMDs should match those of the TND designation outside of the Ag Reserve. The maximum building coverage should be 40 percent of the site.
- 2. The range of housing should be increased from the PUD requirements found on Page 6-262: B,4,a,(6),(c)). The excess of 75 acres and 300 units should be changed to something less, such as "in excess of 5 acres and 10 units." Also, an additional unit type should be

required for every additional 5 acres, which will greatly reduce the "cookie cutter" effect.

3. Regarding the application of the 60/40 and 80/20 options, the minimum residential percentages as found on page 6-261 in figure 6.8-4 should be removed. The non-residential uses must also be located within the 20- to 25-percent buildable area, when applying the 80/20 option, or the 40-percent buildable area when applying the 60/40 option.
4. Regarding street layout and design:
 - a) Section 8.22,A,14; page 8-38, should be changed to disallow cul-de-sacs throughout the Ag Reserve.
 - b) At least one dead-end street or "stub-out" should be required in each of the four cardinal directions for future connections between neighborhoods. These "stub-outs" should extend to the parcel or property line at the time of the development's completion. Stub-outs are not required to cross the preserved open space set-aside between the buildable area and a distant parcel or property line.
 - c) New developments should be required to connect their streets to the "stub-outs" of their existing neighbors.
5. Regarding parking in the Mixed-Use centers, on-street parking spaces directly adjacent to the property should count toward the requirement of off-street spaces. This requirement should be added to Section 7.2, C, 2, but could be changed to apply to the whole county. The width of on-street parallel parking spaces should be reduced from 10 feet to 8 feet. This change should be made to page 7-14: (12,a,(3)).

5.5.2.5 Landscaping and Buffering for Ag Reserve-TMD in Mixed-Use Centers

1. Remove the requirement for the *compatibility buffer* should be removed. The current language is vague (Page 6-175, (6.5,R,2,a) and in Section 7.3) as to how many and how often the pedestrian openings occur in the separation walls. In areas of the Ag Reserve where the compatibility buffer is deemed appropriate, accessible pedestrian openings should be required at least every 400 linear feet of wall.
2. The requirements for perimeter landscape areas (page 6-261: B,4,a,(5)) should be removed. These are not appropriate in areas that encourage cross connections between buildings of mixed or differing uses. Nor should BCC require this area surrounding a mixed-use center. The Master Plan should not discourage residents from walking from a neighboring residential-only development. The code language should be similar to that for the TND on page 6-279 (5), Edge Areas.
3. The *right-of-way buffer* referenced in the site development standards on page 7-38: 7.3,F,1 should not be required. The tree requirement is good, but the trees should be required between the roadway and the sidewalk and located inside the right-of-way. The continuous hedge prevents pedestrian or equestrian access to buildings that front those streets.

4. The *landscape buffer between compatible uses* requirement on page 7-39: 7.3,F,2 should be eliminated. These buffers will occur naturally where actually needed. They are not needed between two shopfront buildings built next to one another on a shopping street.
5. Similarly, the *landscape buffer between incompatible uses* requirement on page 7-39: 7.3,F,3 should be eliminated as well, for the same reason as above.

5.5.2.6 The Location for The CCSO

The location for the Community Commercial Service Overlay (CCSO) should be set at the southwestern corner of the intersection of Atlantic Avenue and SR 7/U.S. 441, which will house a U.S. Post Office as well as commercial businesses. The Consultants recommend this corner as the only location because the newly suggested mixed-use centers will have additional restrictions that will better guide the goals and objectives of the Ag Reserve Master Plan.

5.6 Minimize Costs

The following actions and recommendations will help to minimize costs to the County taxpayers.

5.6.1 Community Development District

The County should proceed with investigating the potential for creating a Community Development District (CDD). A CDD can shift the execution of some of these Master Plan actions currently assigned to the County. This management entity should have a director who would continue to organize and coordinate many of the issues and efforts that concern the Ag Reserve. A CDD can save money to taxpayers outside of the Ag Reserve by shifting the costs of capital improvements and some operational expenses directly to the taxpayers receiving the benefit.

5.6.2 Existing Development Rights

Density and land-use rights should not be decreased in Palm Beach County's Comprehensive Plan and the ULDC. Such reductions might invite unnecessary and costly lawsuits by property owners.

5.6.3 Retain the Flavor Pict Road Right of Way

The right-of-way for the extension of Flavor Pict Road should be retained on the County right-of-way map. The Master Plan directs the county to purchase lands in the central Ag Reserve with the Bond money. Until more is known about the outcome of the land purchases, the right-of-way should not be deeded back to adjacent property owners. If all goes well, Flavor Pict Road will not have to be constructed, saving taxpayers their share of the construction costs.

5.7 Benefits of Minimizing Costs

By implementing the actions recommended in this chapter under the six objectives, the County will minimize costs incurred by the County taxpayers by:

- Promoting the preservation of agriculture, such as nurseries, equestrian, and niche crops, which will in turn help to keep the future agriculture market strong.
- Encouraging the SFWMD to develop the WPAs, and the possible reconfiguration of the LWDD canal system to create a new water management system that still maintains the existing drainage and water supply functions but also creates a more aesthetically pleasing and useful system of canals and lakes.
- Encouraging the State to proceed with the development of a State park that would tie into the existing Loxahatchee National Wildlife Refuge, and reduce the need for the County to develop its own regional park.
- Maximizing open space and minimizing the number of units, and hence reducing the amount of services required to be provided by the County.
- Concentrating development in areas accessible with existing roads (i.e., Atlantic Boulevard and Boynton Beach Boulevard), which in turn limits infrastructure requirements and costs.

By implementing these recommended action items, the County will be able to meet the specific objectives of this Master Plan, which in turn will satisfy the BCC-directed purpose statement, which is:

To preserve and enhance agricultural activity and environmental and water resources in the Ag Reserve, and produce a master development plan compatible with these goals.

SECTION 6

References

SECTION 6

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APPENDIX A

Palm Beach County Agricultural Reserve Option Analysis



palm beach county agricultural reserve option analysis

Palm Beach County
Cooperative Extension Service
December 1998

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Summary

A review of the vegetable crops presently growing in the Ag Reserve was accomplished, and in the section of the report entitled Speciality Produce Alternative Crops a review is provided which includes 48 new vegetable and fruit crops that could possibly be grown. In an effort to be more specific 10 factors were identified that impact vegetable production. Those factors were then applied to thirty four different vegetable crops. These factors were subjectively rated, plotted and the results reviewed. The outcome indicates the vegetable crops that are the most viable are those presently grown. That does not mean that some of the other vegetables which ranked lower on the scale cannot be grown. It only means that there are limitations such as market, competition, infrastructure or other factors that must be considered. With proper attention to the factors many of these lesser ranked crops could be grown and probably for a profit.

To show the diversity of crops that have been or are presently being grown in the County a listing is included in the report under the title Agricultural Index of Presently Cultivated Crops in Palm Beach County. This includes 80 varieties of vegetables and 12 types of fruit not including citrus. It does show that growers have tried many minor crops.

At the same time certain fruit crops were identified. The crops are grown within the state in such small quantities at the present, compared to the major vegetable crops, that all of the factors used to rate the vegetables could not be used due to insufficient data. There is market potential and the Agricultural Reserve has the winter temperature requirements for the fruit crops giving them viable potential.

Nursery economic information was gathered from statewide data as to recent trends in the industry. That data is presented with foliage nurseries showing the most promise. A more exhaustive study is going to be available soon. Initial results show the horticultural industry in Florida as the state's most valuable "agricultural" industry. Due to the large diversity of plants grown in local nurseries, well into the hundreds, no attempt was made to show which nursery plants were the most likely to succeed in the Agricultural Reserve.

The vegetables reviewed are:

<i>Tomato</i>	<i>Specialty Tomato</i>	<i>Bell Peppers</i>
<i>Specialty Peppers</i>	<i>Cucumbers</i>	<i>Eggplant</i>
<i>Herbs</i>	<i>Strawberry</i>	<i>Snap Beans</i>
<i>Watercress</i>	<i>Lettuce</i>	<i>Celery</i>
<i>Cantaloupe</i>	<i>Strawberry</i>	<i>Squash</i>
<i>Watermelon</i>	<i>Rhubarb</i>	<i>Onions</i>
<i>Okra</i>	<i>Garlic</i>	<i>Carrots</i>
<i>Cuban Ethic Vegetables</i>	<i>Cabbage</i>	<i>Beets</i>
<i>Broccoli</i>	<i>Sweet Corn</i>	<i>Radish</i>
<i>Blackeyed Peas</i>	<i>Pumpkin</i>	<i>Potato</i>
<i>Greens</i>	<i>Spinach</i>	<i>Asparagus</i>
<i>Artichoke</i>	<i>Chinese Vegetables</i>	

The Crop Suitability Analysis chart that follows shows the vegetable crops and their relative ranking. Herbs could have many different types under the general category and were not separated out.

As the acreage available for vegetable production diminishes the economies of scale that presently assist the industry will disappear. At that time small producers will have to come together and share packing house facilities and other resources to remain competitive. Other steps similar to what might occur within a cooperative may have to occur to make operations feasible. While Palm Beach County has had the luxury of having a large vegetable industry in the coastal area of the County the need to consider it as a small farm area, with the special needs of such an area, will be necessary. The transition may take time and the results cannot be totally predicted.

This review and listing of potential crops is a step in the direction of retaining agriculture in the Agricultural Reserve but on a limited, more specialized basis.

A Sustainable Agriculture Task Team for The Governor's Council on a Sustainable South Florida was formed and met. A subgroup with additional ad hoc members tackled the Agricultural Reserve as an immediate problem against which solutions could be applied. As a result of that effort a "tool box" of solutions for retaining agricultural lands was identified from real situations in the U.S. Those having some applicability for the Agricultural Reserve were identified and additional ideas brought forth through a brainstorming session. Those ideas are a part of the report and depending on the direction for Phase Two of the master planning effort may receive further study. No single item identified could provide the solution for the Agricultural Reserve. A combination of tools, many needing an infusion of public dollars and a willing agricultural community, could be used to have a positive impact.

While this study did not address the equestrian industry directly it is acknowledged as an agricultural component in the County. This recognition would make it an alternative for the Agricultural Reserve. Within the last several years the County funded study of the equestrian industry and the one funded by the Town of Wellington all speak to the importance of the equestrian industry.

agricultural crop options in palm beach county's Agricultural Reserve Area

As a business that produces and markets a seasonal commodity in eastern Palm Beach County, agriculture is directly affected by an inordinate number of factors:

- Weather
- Competition from within the State of Florida
- Competition from within Palm Beach County
- Competition from other states
- Increased competition from other countries
- Demand
- Technical Suitability
- Agricultural Compatibility
- Agricultural Experience
- Agricultural Suitability
- Infrastructure Requirements

These factors, to one extent or another, have always been there. Our farming community has accepted these factors as part of farming within the Ag Reserve.

Now, the possible re-zoning of this area has resulted in a number of farming interest expressing their intent to discontinue farming and developing this acreage. With an estimated land-value of +/- \$30k an acre, your return on assets from farming an acceptable crop of tomatoes would yield approximately the same as interest income from US bonds.

Farming on land valued at \$30k an acre and zoned for other uses is almost financially infeasible.

According to the latest USDA Agricultural Trade Update "Vegetables, wine, malt beverages, and cocoa have led import growth this year. Imports of vegetables, the largest import group, rose 18 percent to nearly \$4 billion. At \$2 billion, fruit imports, another large group, also are up about 5 percent. The \$1.7 billion in wine imports and the \$1.5 billion in malt beverage imports show year-to-date gains of 14 and 15 percent, respectively."

Canada and Mexico are the largest suppliers of vegetables to the United States in 1998. U.S. vegetable imports from Mexico are up 23 percent to \$1.7 billion, while imports from Canada have risen 35 percent to \$806 million.

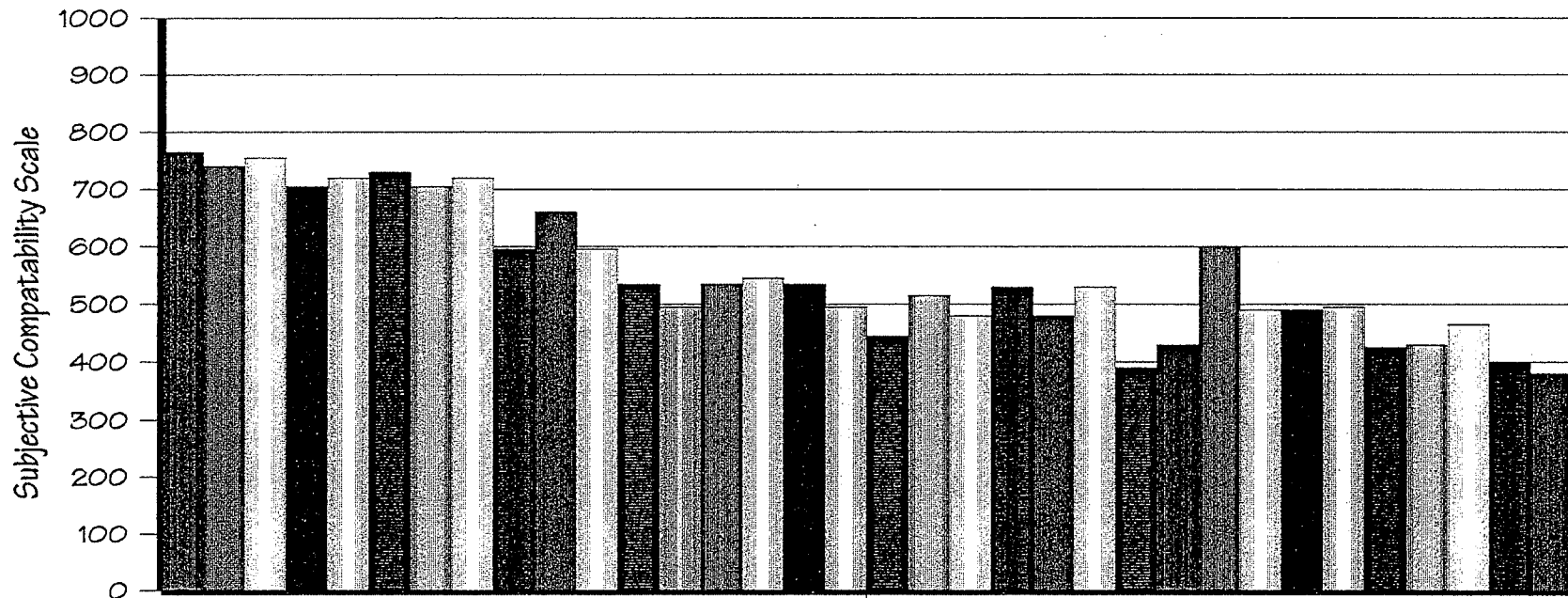
This import pressure will undoubtedly continue. Present RTA (Regional Trade Agreements) negotiations are underway for the Free Trade Area of the Americas (FTAA) treaty which will create a free trade agricultural zone for the entire western hemisphere. The Administration is continuing to pressure Congress for passage of the "Fast Track" legislation, which will likely expedite this process.

There are a number of factors why some farming could continue within the Ag Reserve:

- High yield / low acreage requirements on established Ag businesses (Nurseries)
- Speculation on longer-term land value
- Specialty low demand crops (Chinese vegetables, herbs, etc)
- Sale of developmental rights
- Tax advantages

Palm Beach County / Ag Reserve

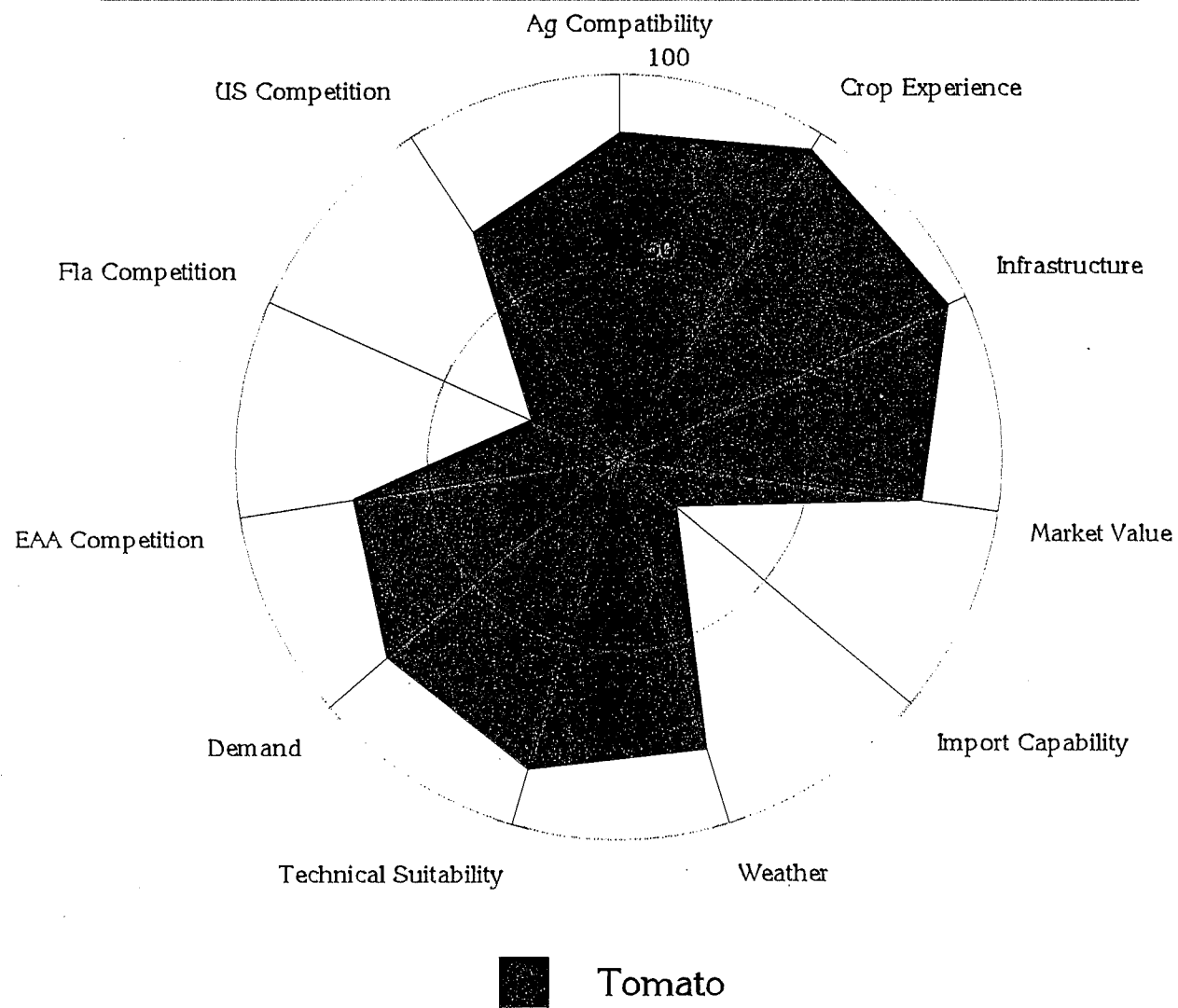
Crop Suitability Analysis



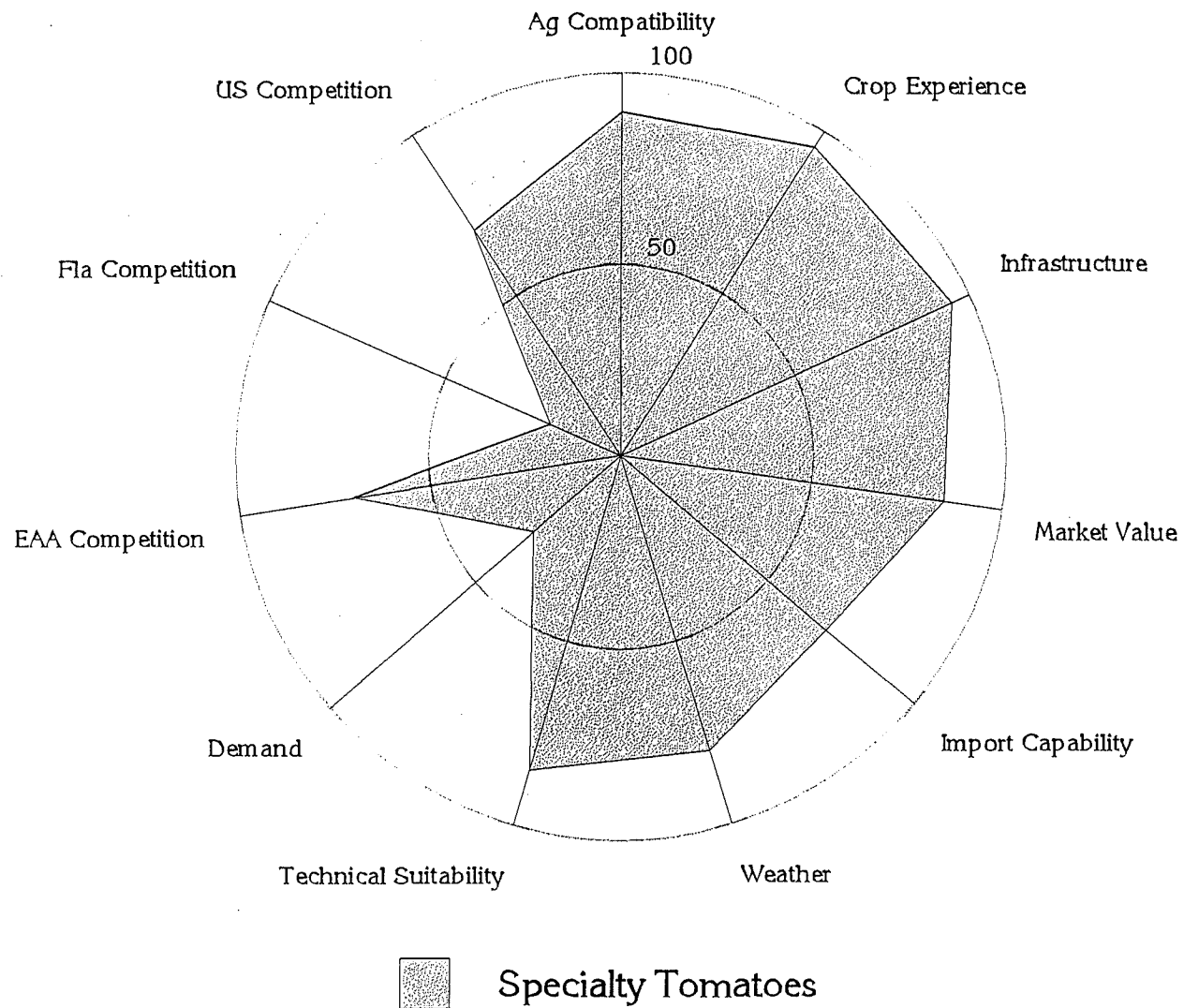
Crops

Tomato	Specialty Tomato	Bell Peppers	Specialty Peppers	Cucumbers	Eggplant
Herbs	Strawberry	Snap Beans	Watercress	Lettuce	Celery
Cantaloupes	Kohlrabi	Squash	Watermelon	Rhubarb	Onions
Okra	Garlic	Cuban Vegetables	Carrots	Cabbage	Beets
Broccoli	Sweet Corn	Blackeyed Peas	Radish	Pumpkin	Potato
Greens	Spinach	Asparagus	Artichoke		

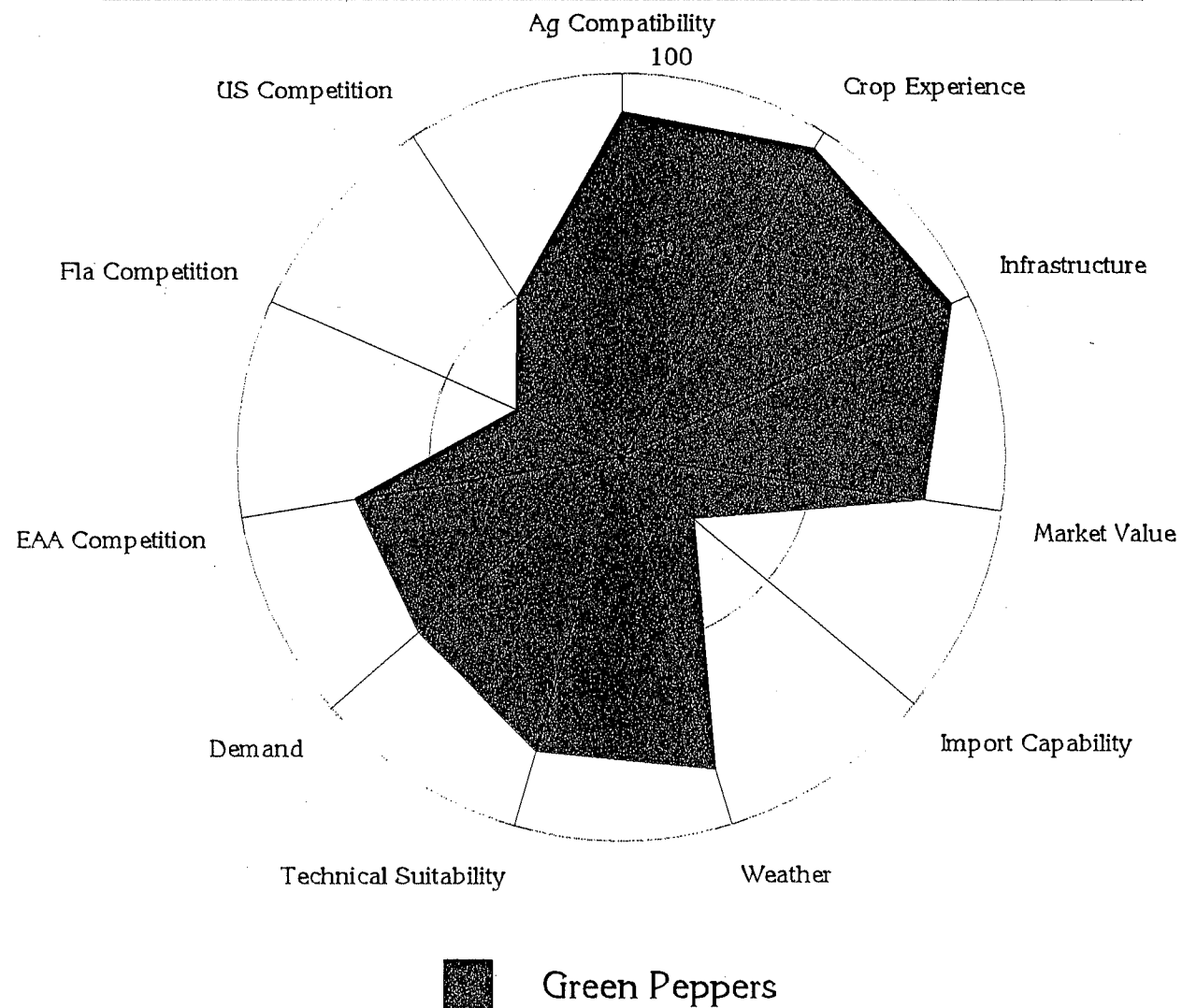
Production Analysis of Various Vegetable Crops in Eastern Palm Beach County



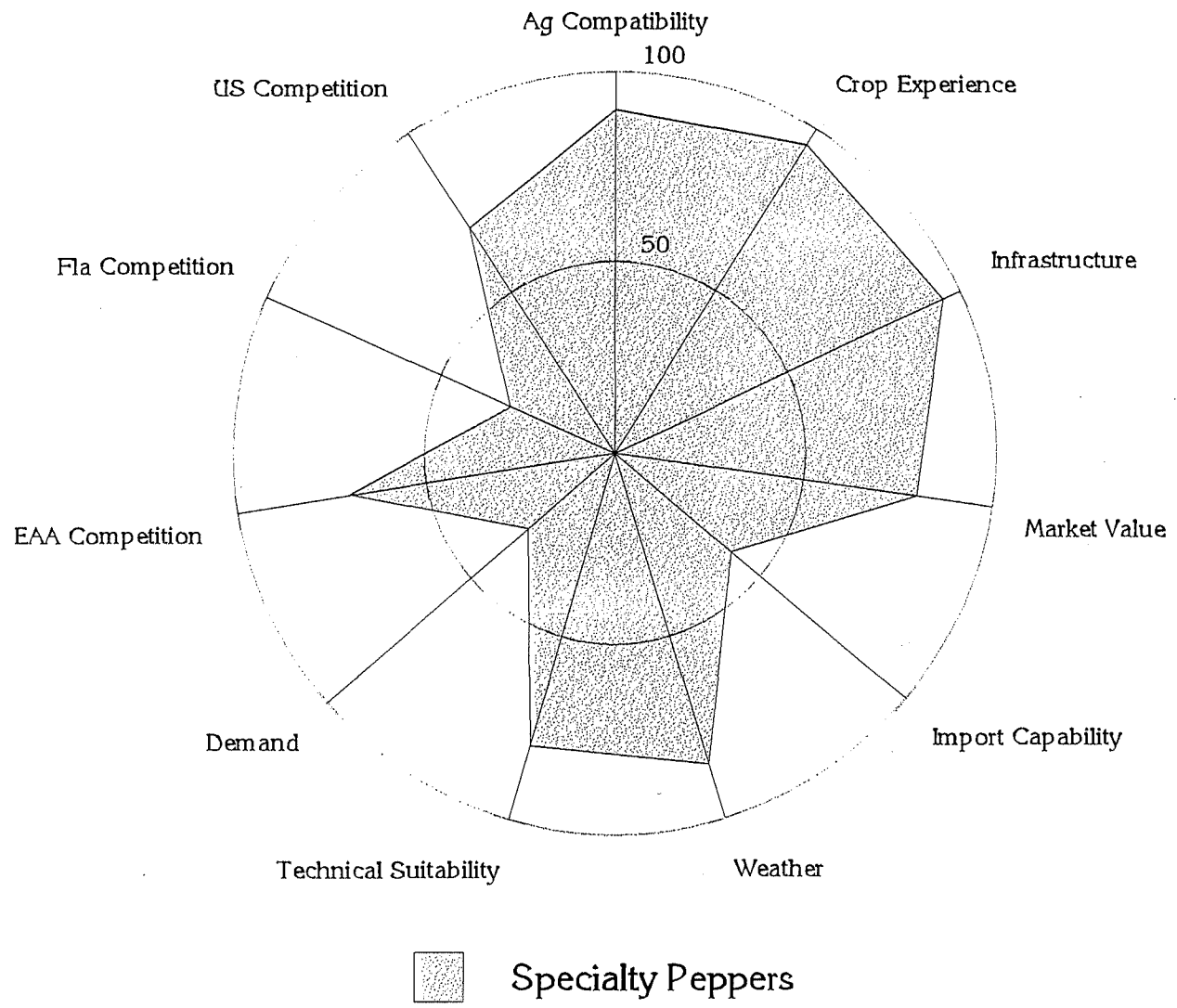
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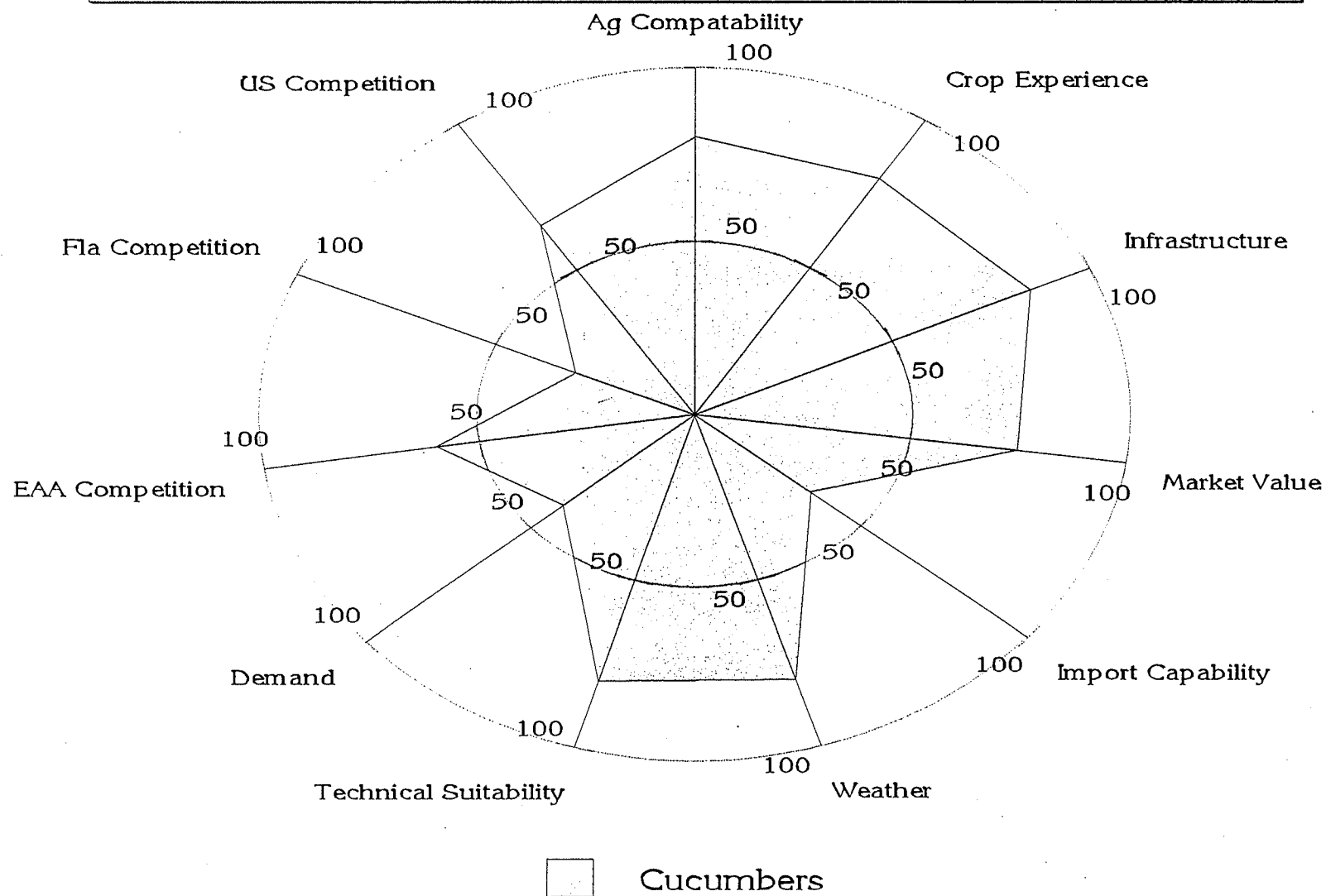
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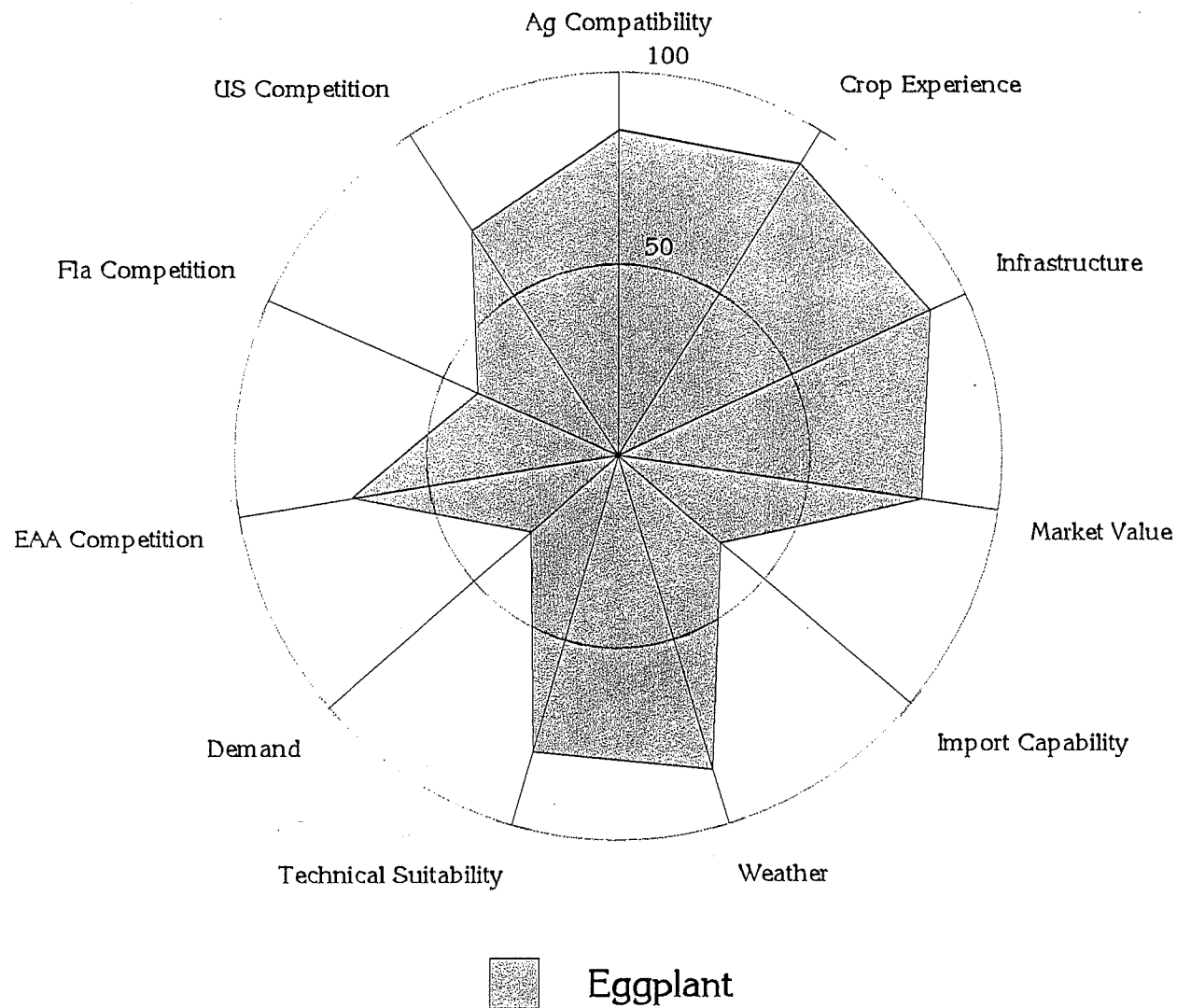
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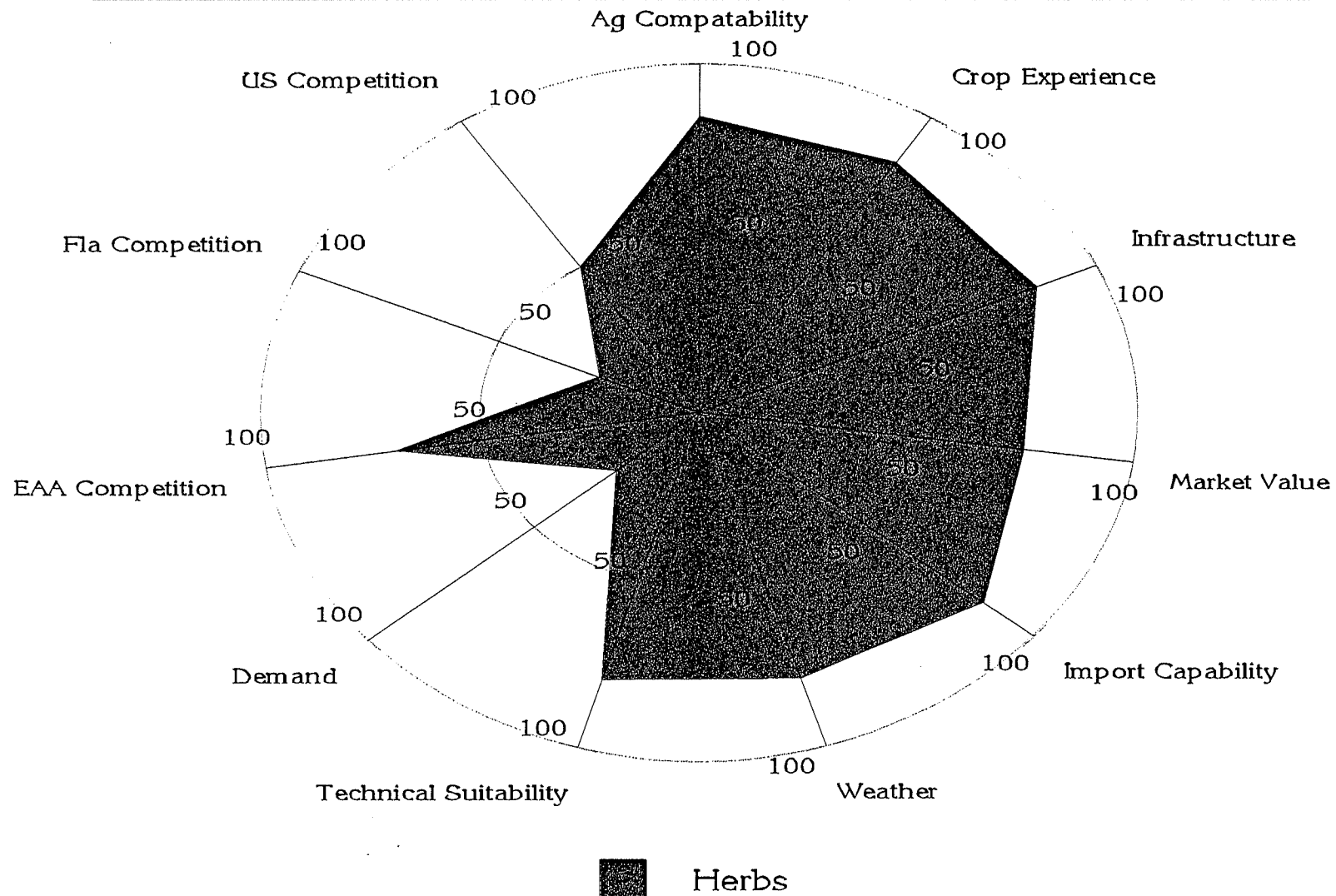
Production Analysis of Various Vegetable Crops in Eastern Palm Beach County



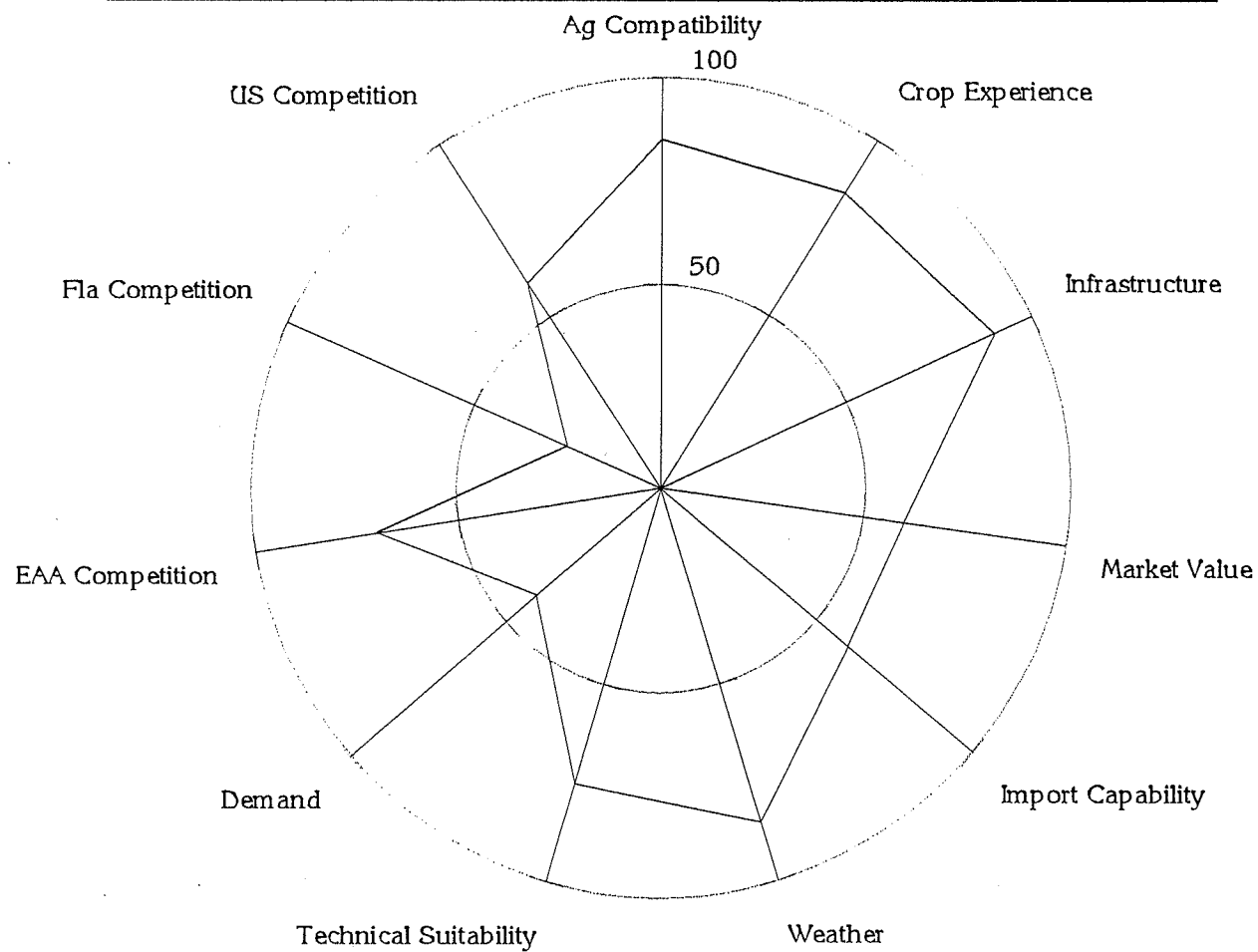
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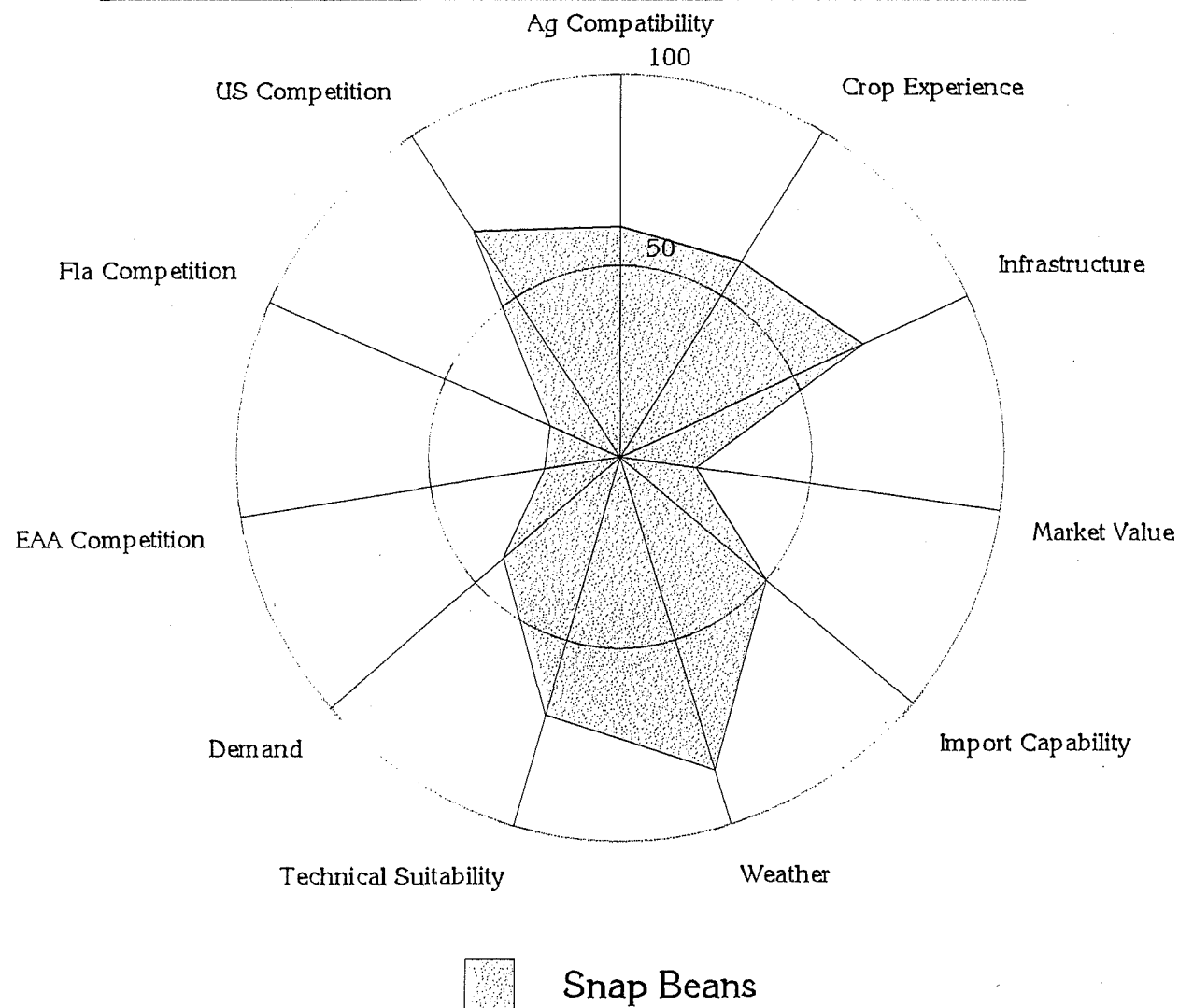


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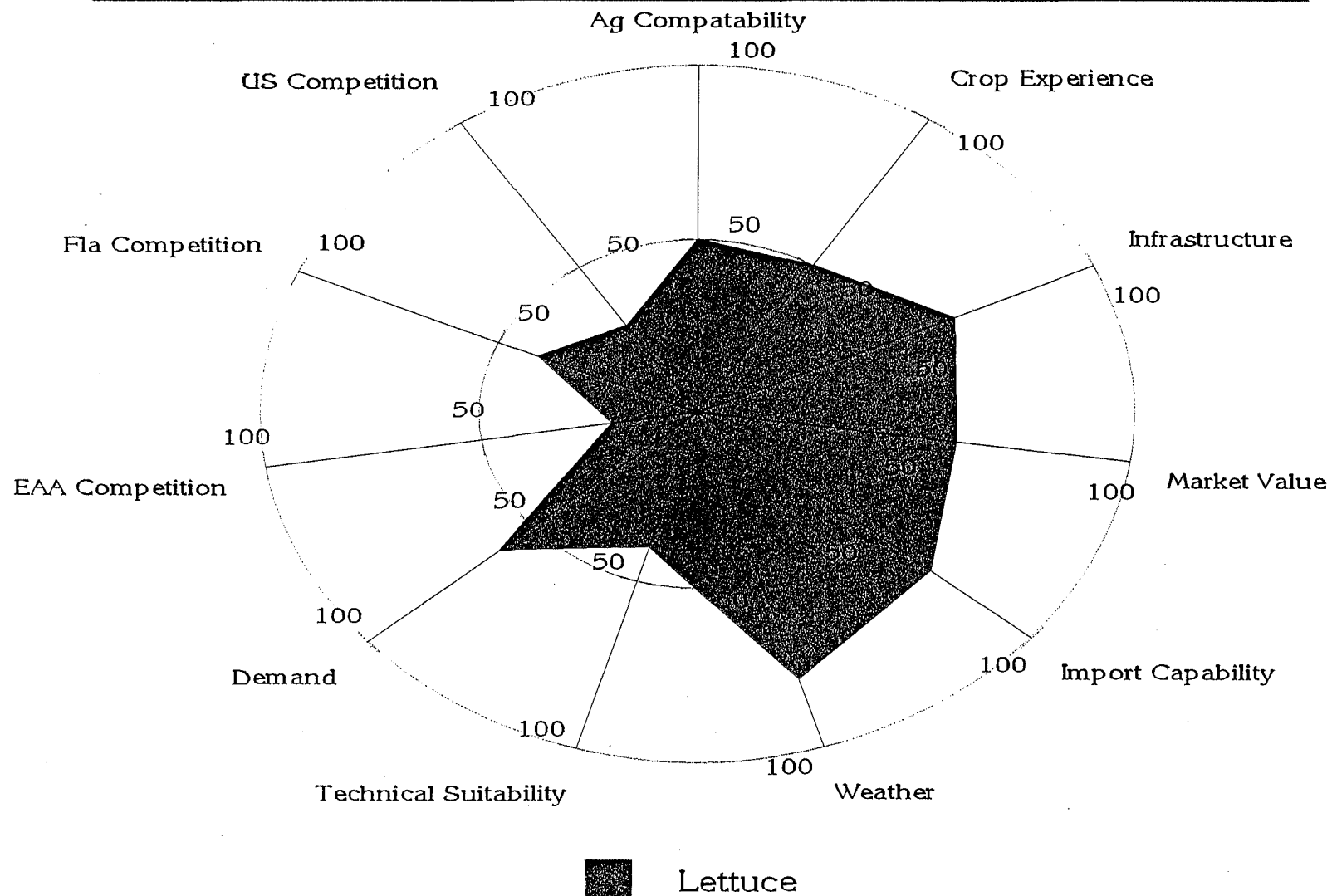


☐ Strawberry

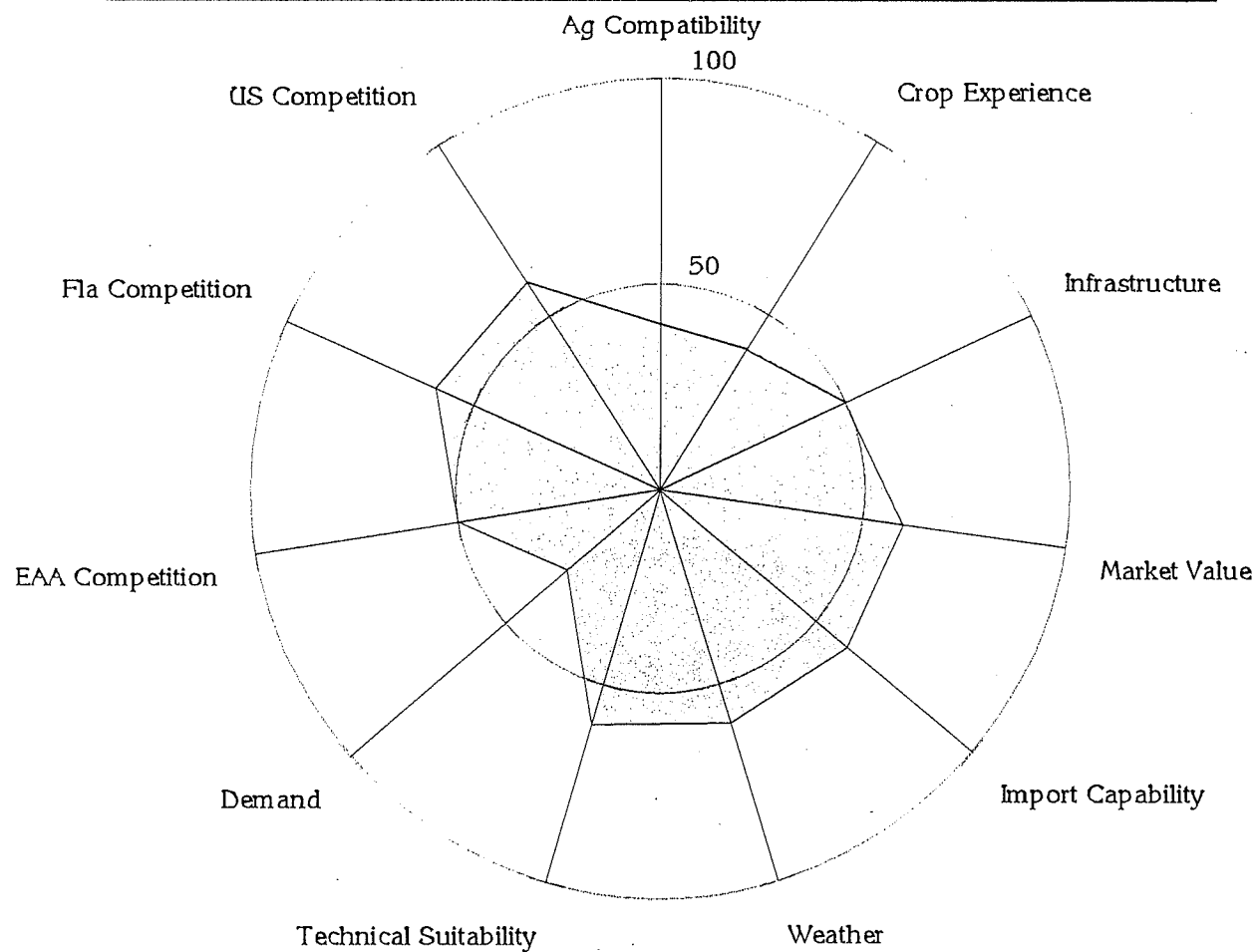
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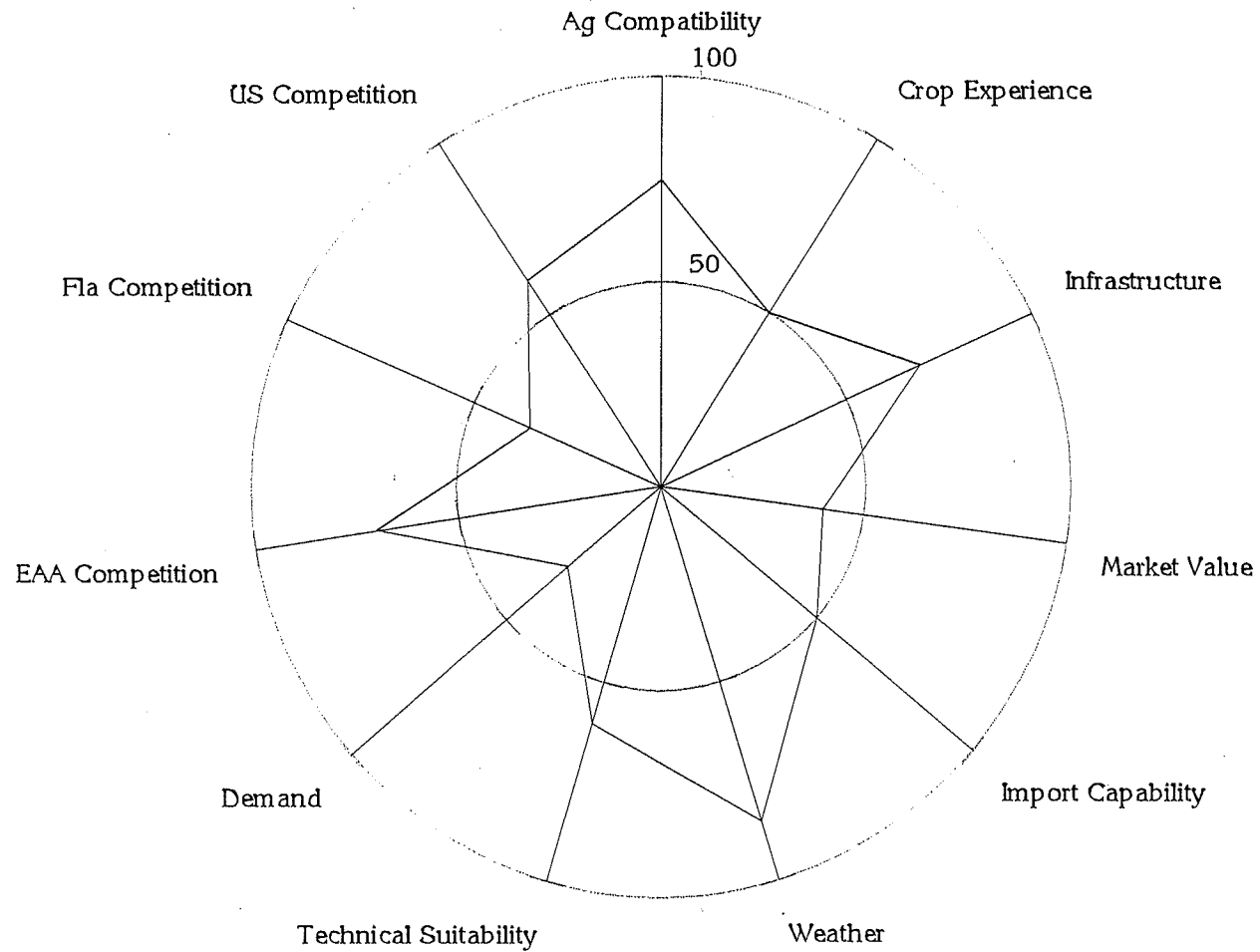


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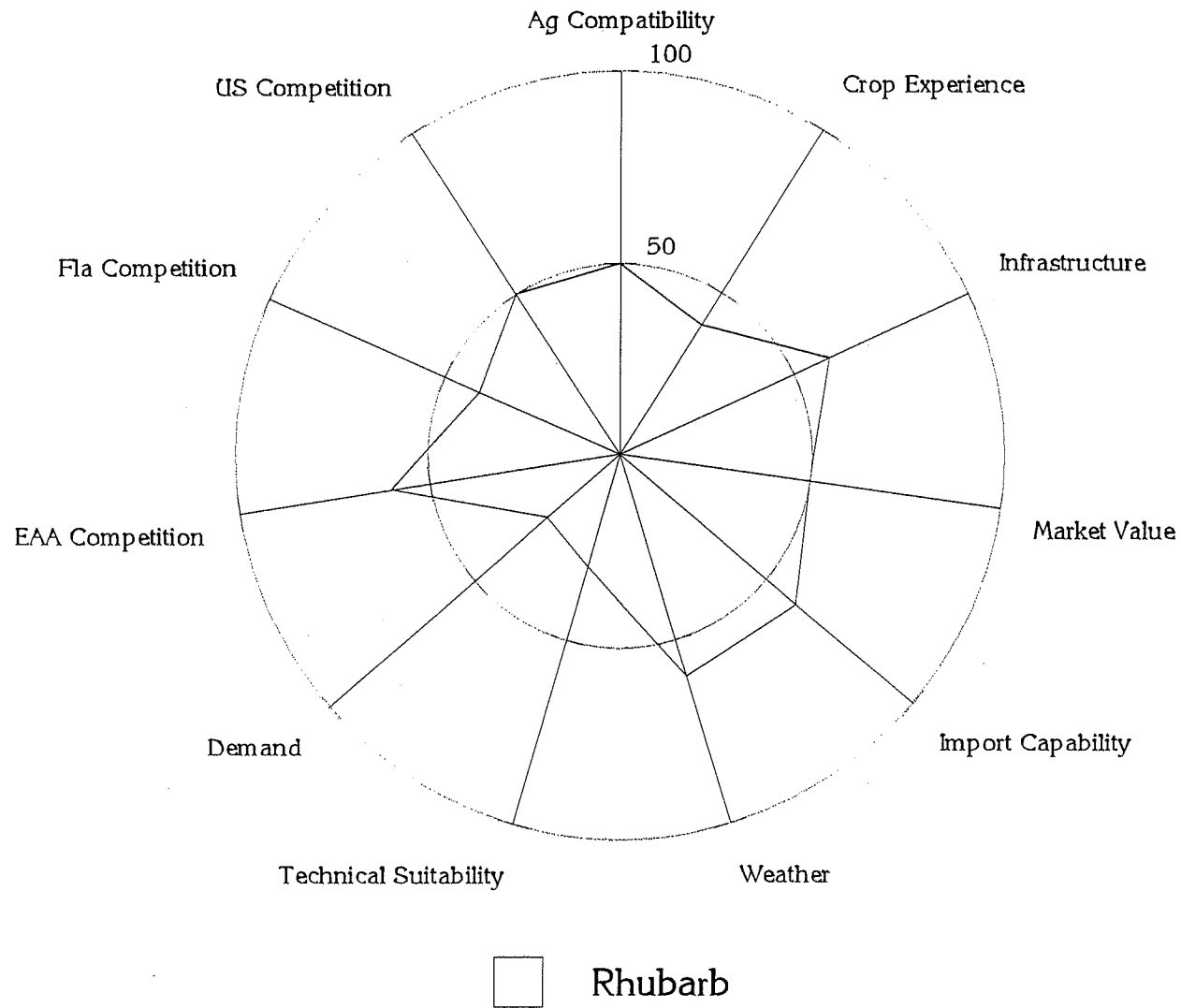
Kohlrabi

Production Analysis of Various Vegetable Crops in Eastern Palm Beach County

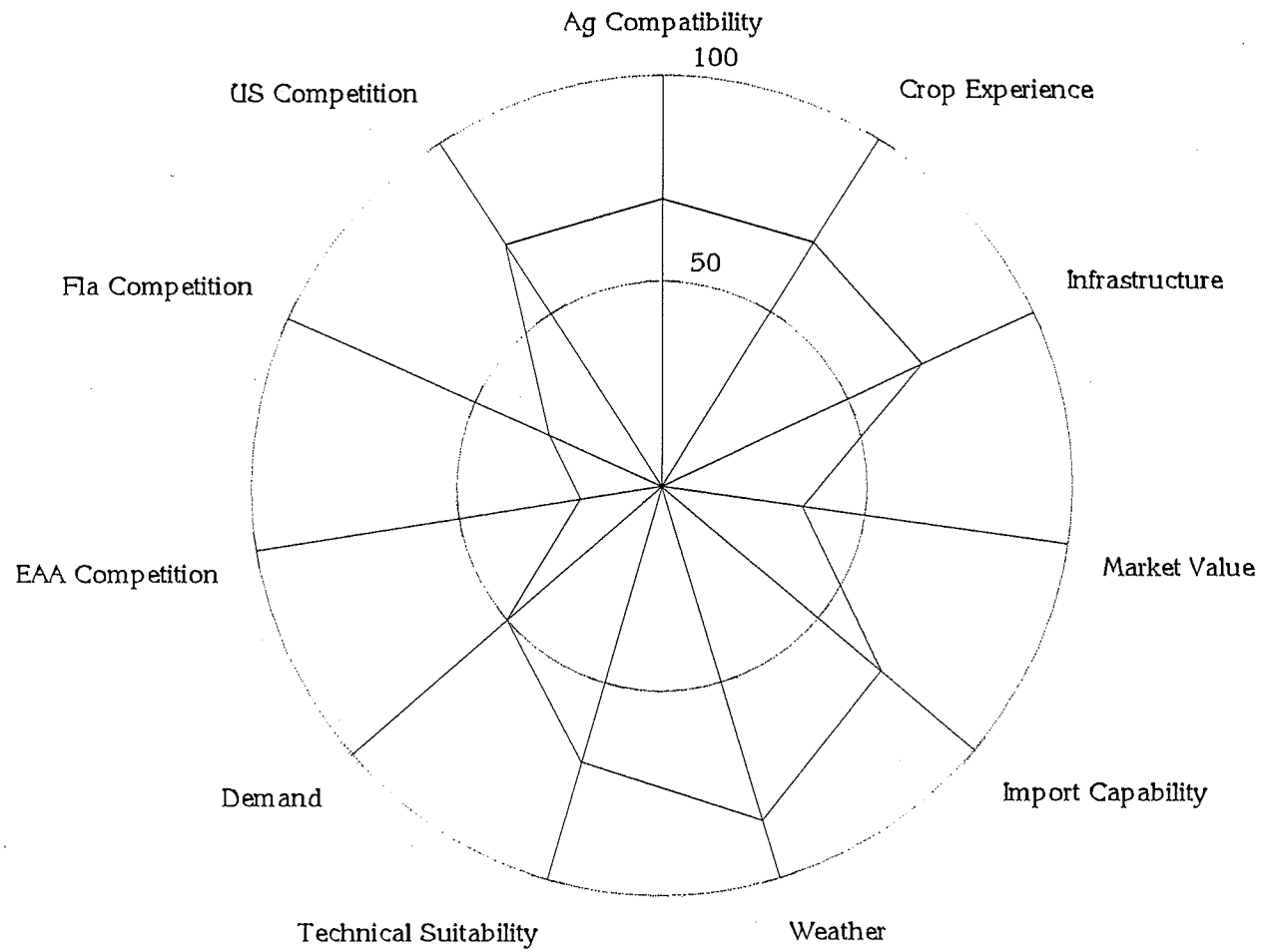


□ Squash

Production Analysis of Various Vegetable Crops in Eastern Palm Beach County

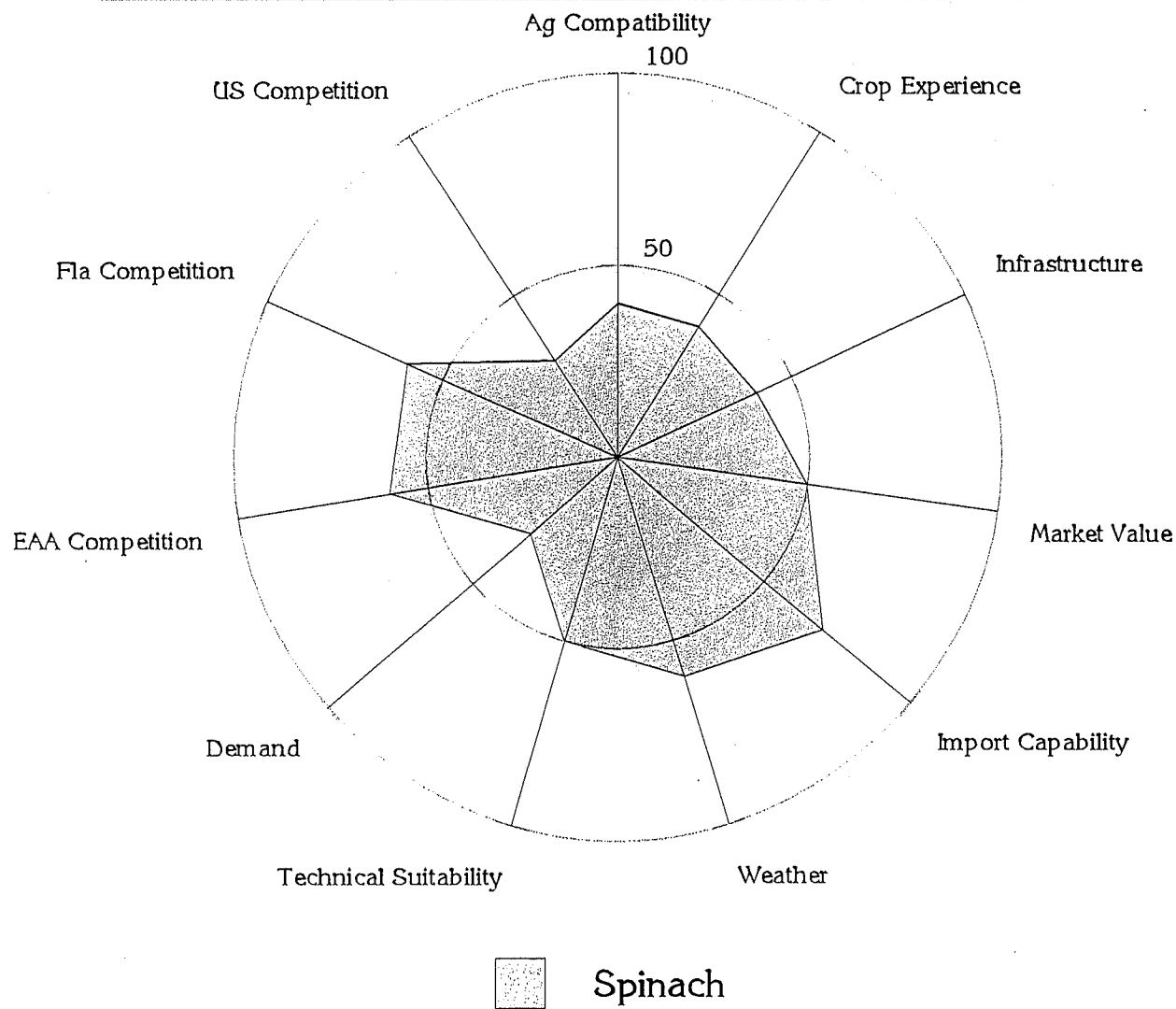


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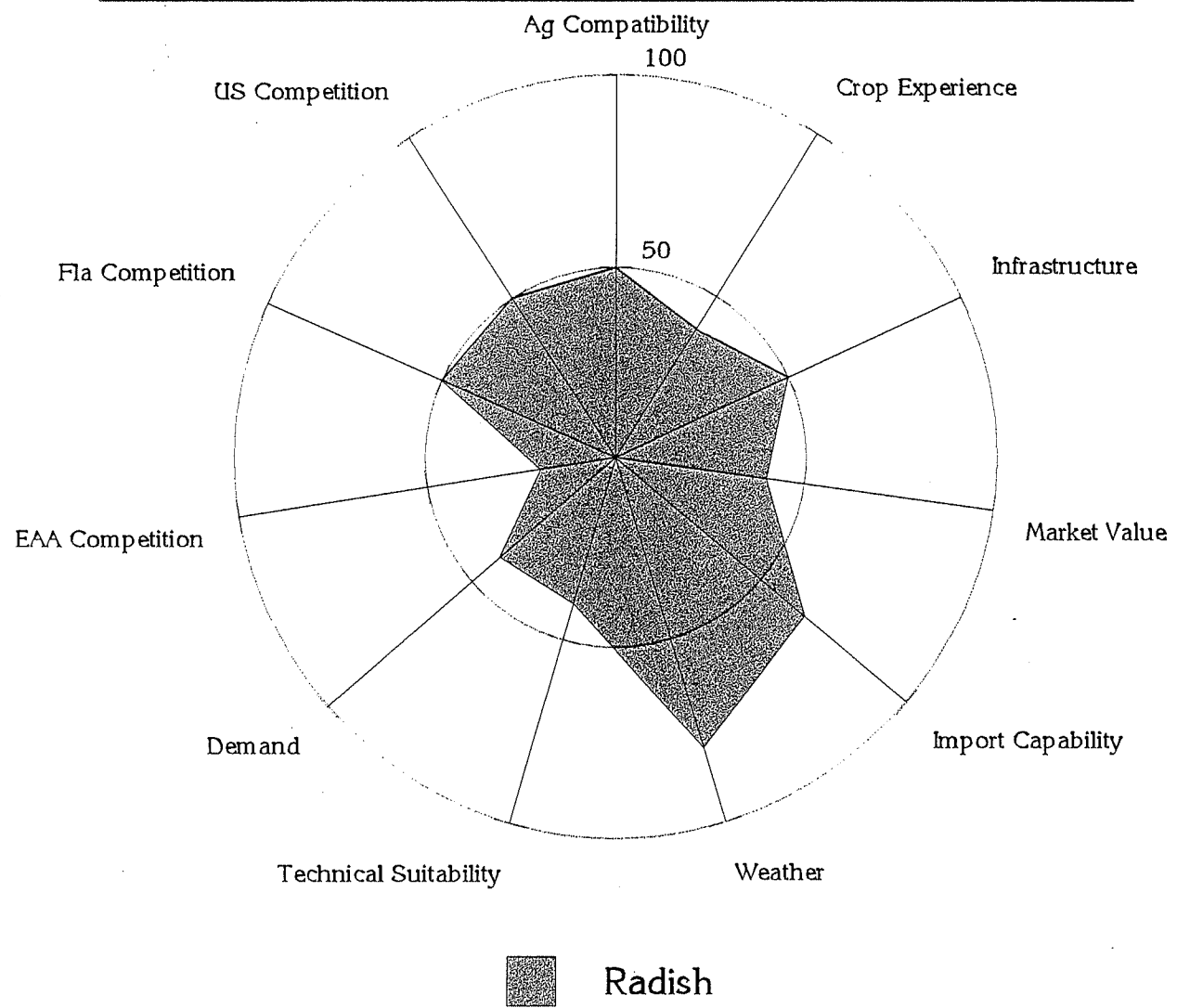


☐ Sweet Corn

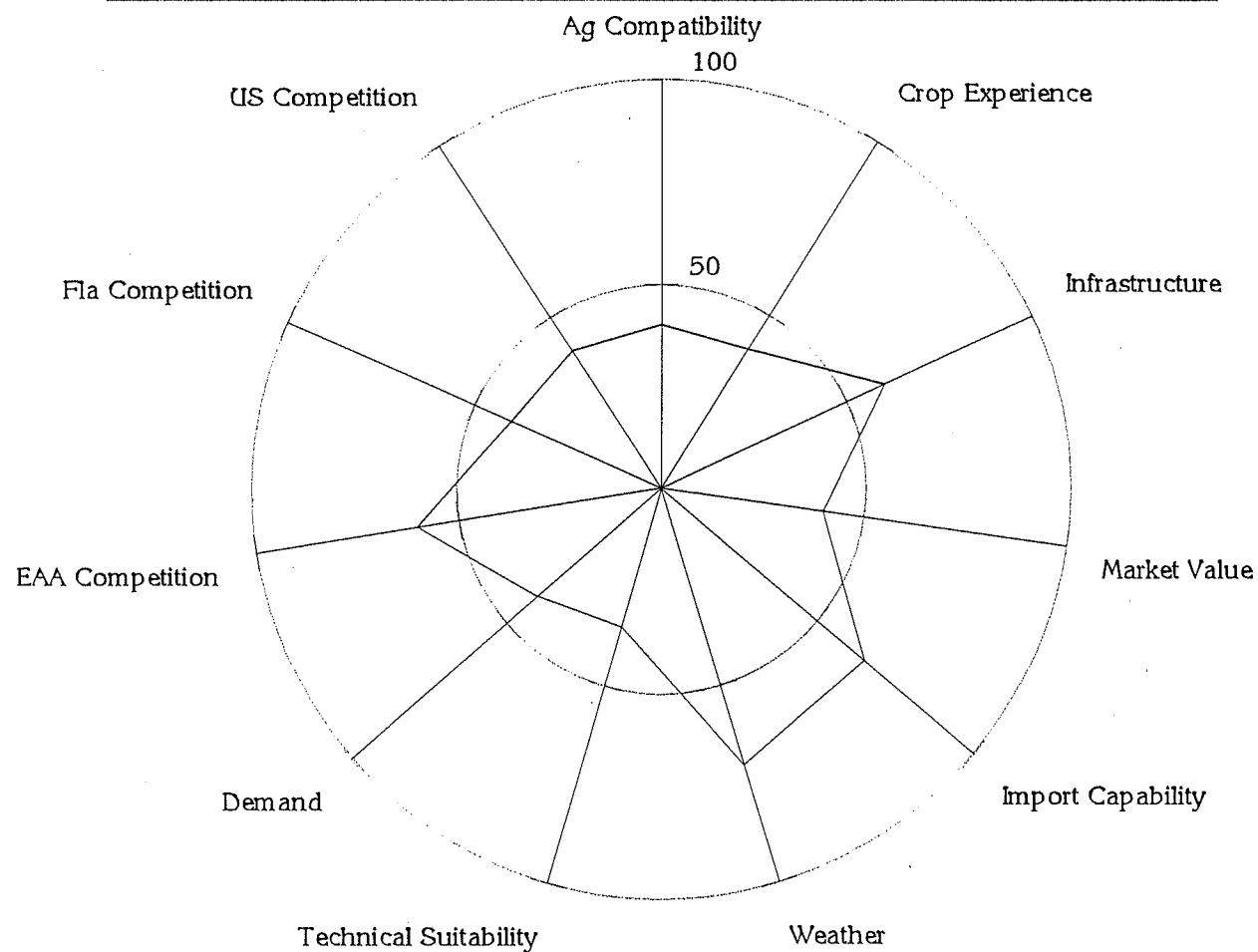
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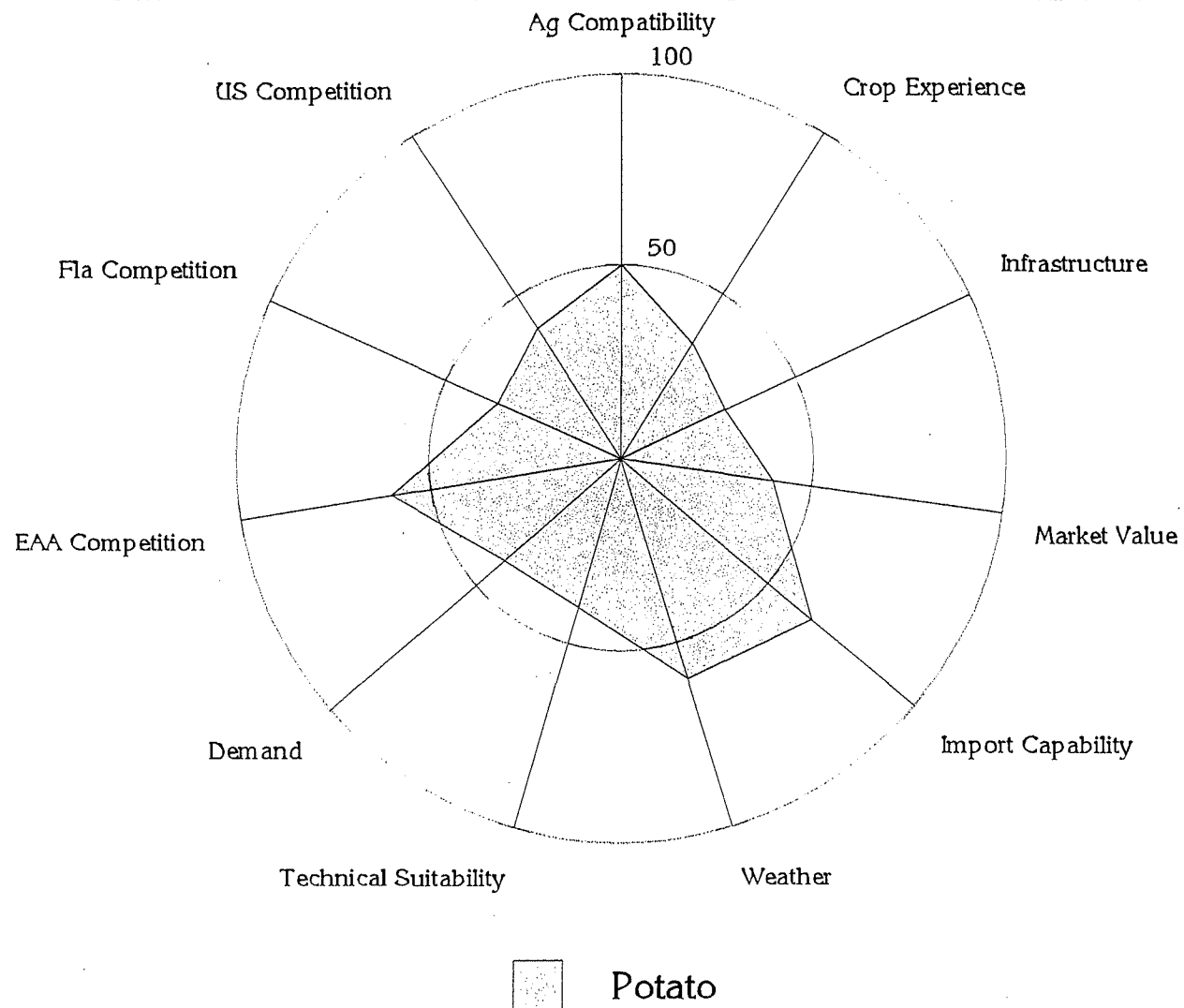


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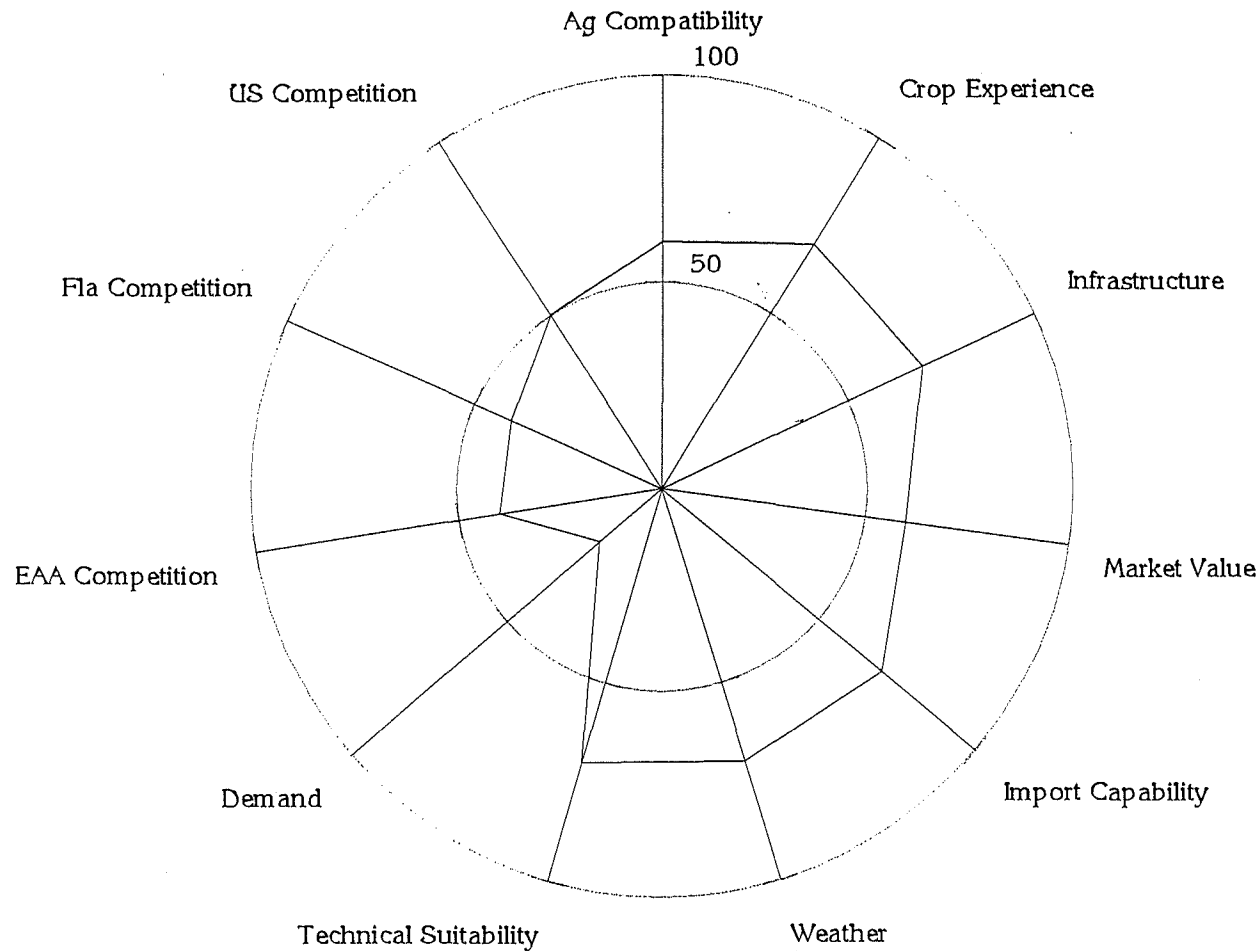


□ Pumpkin

Production Analysis of Various Vegetable Crops in Eastern Palm Beach County

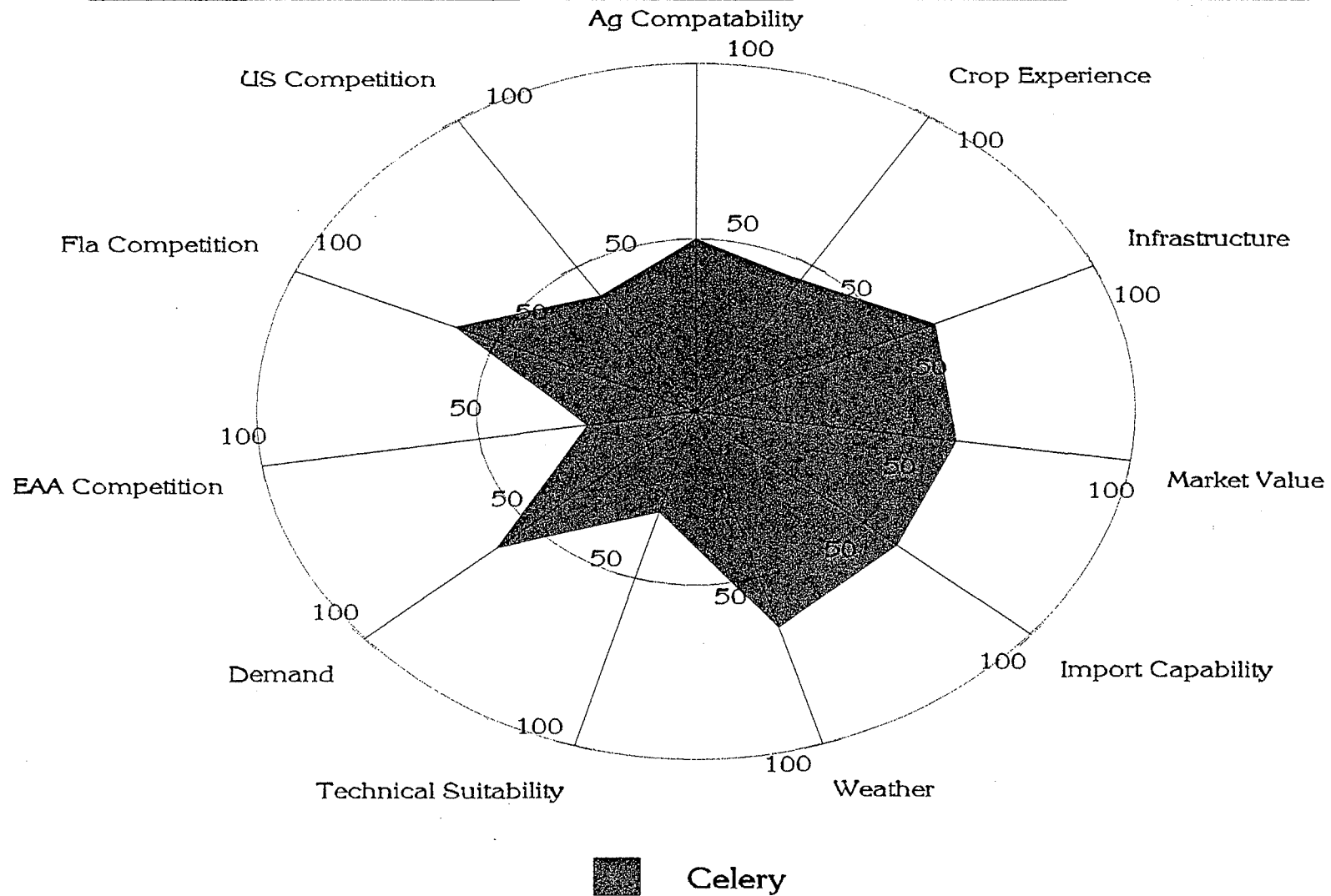


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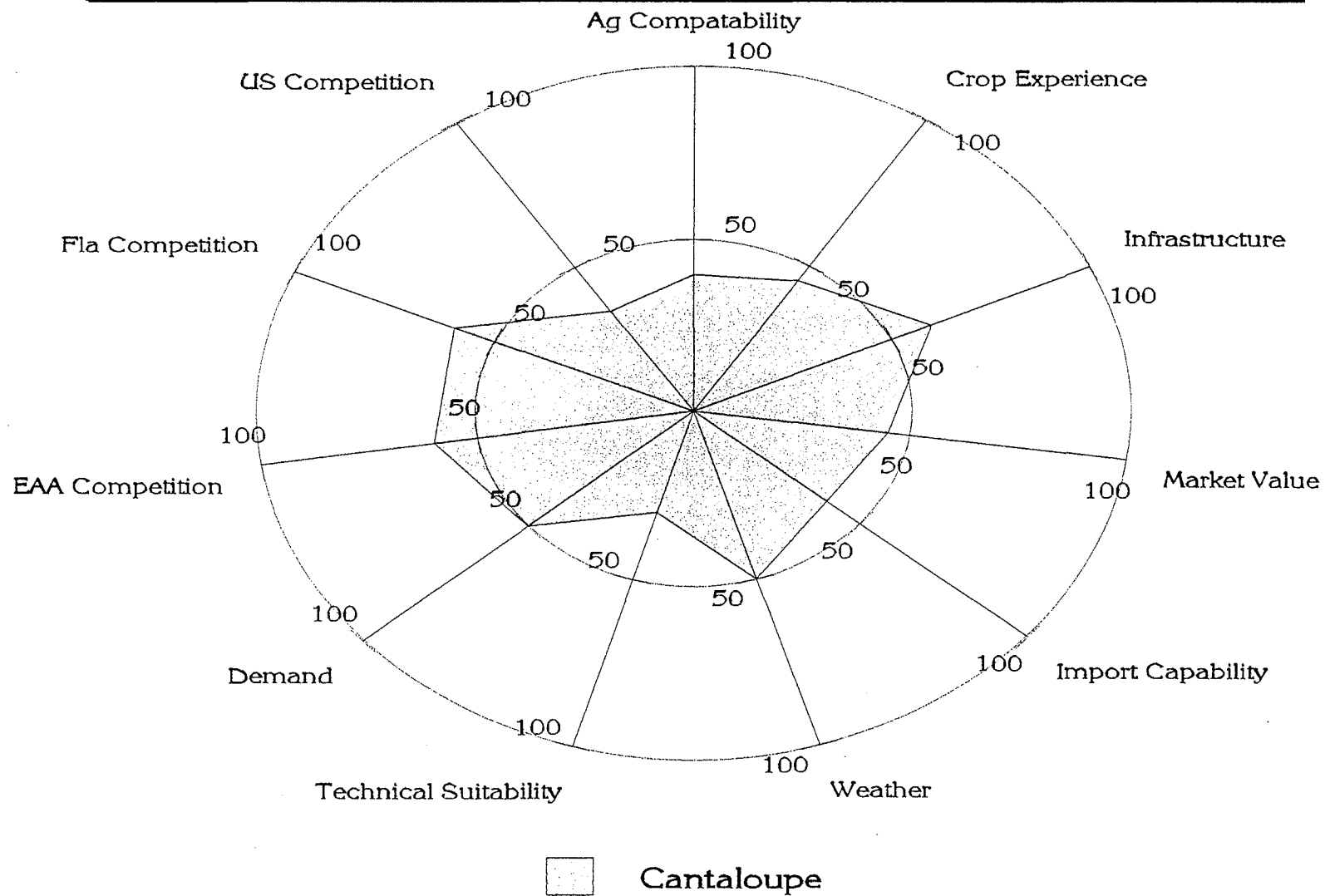


□ Watercress

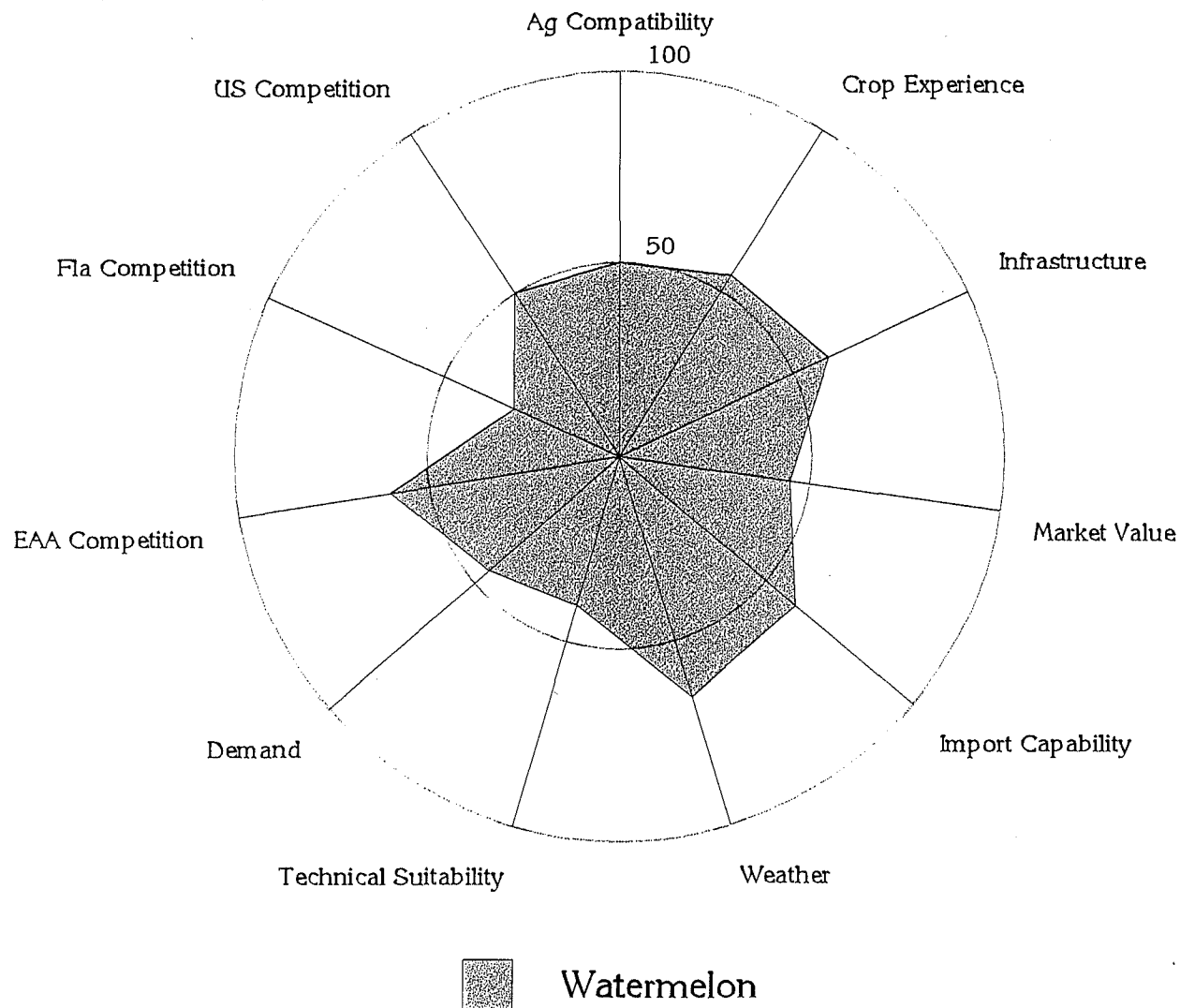
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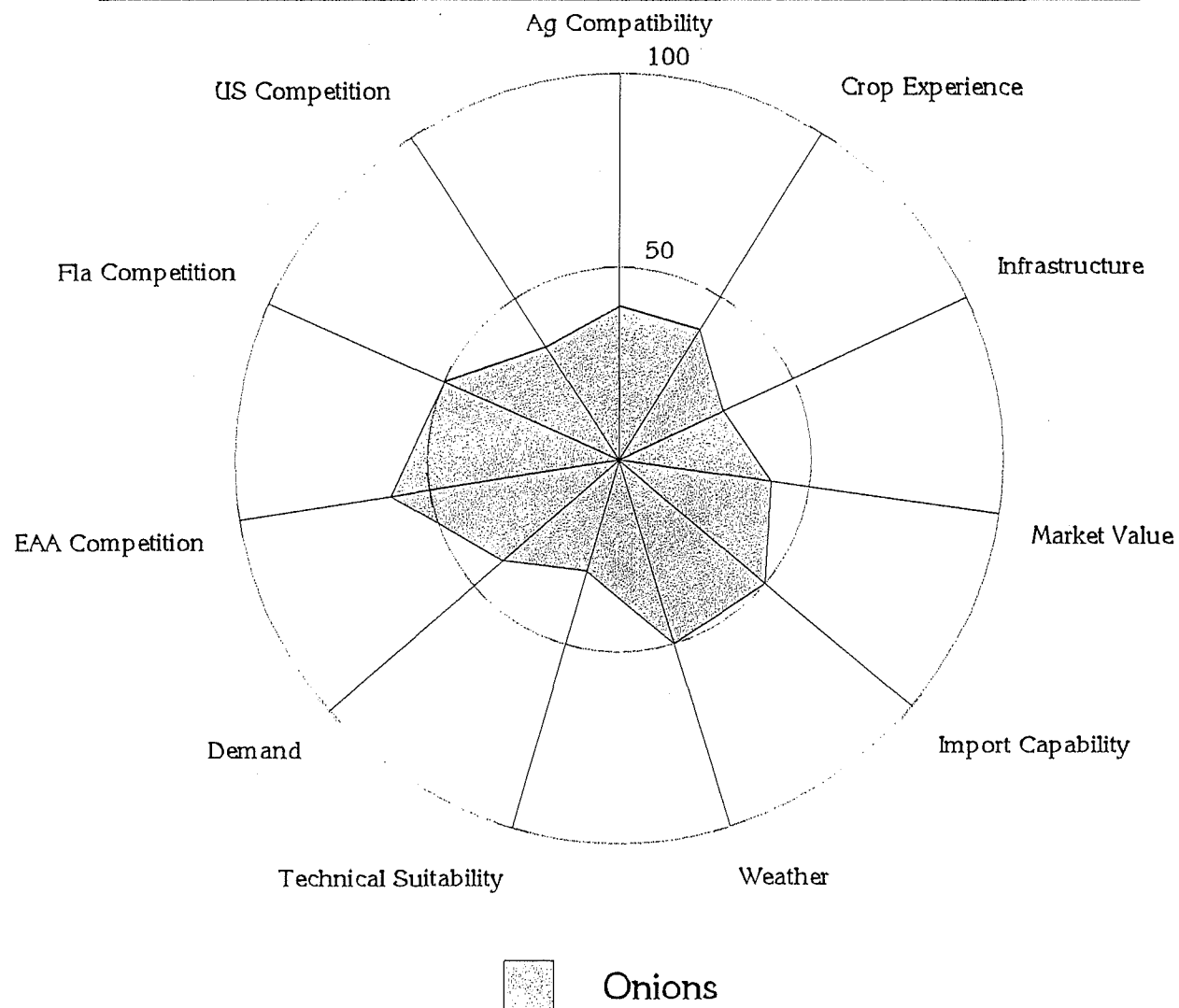
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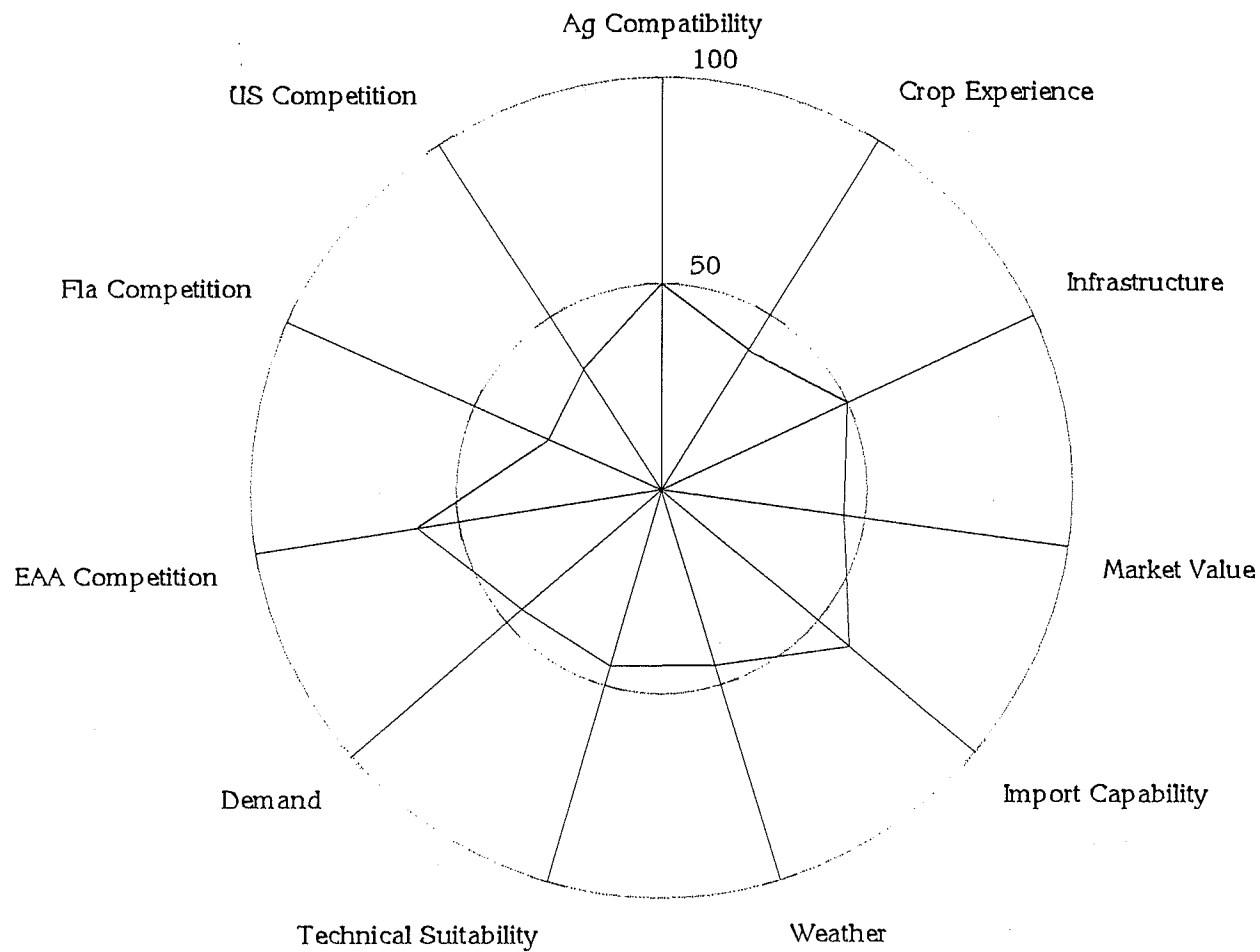
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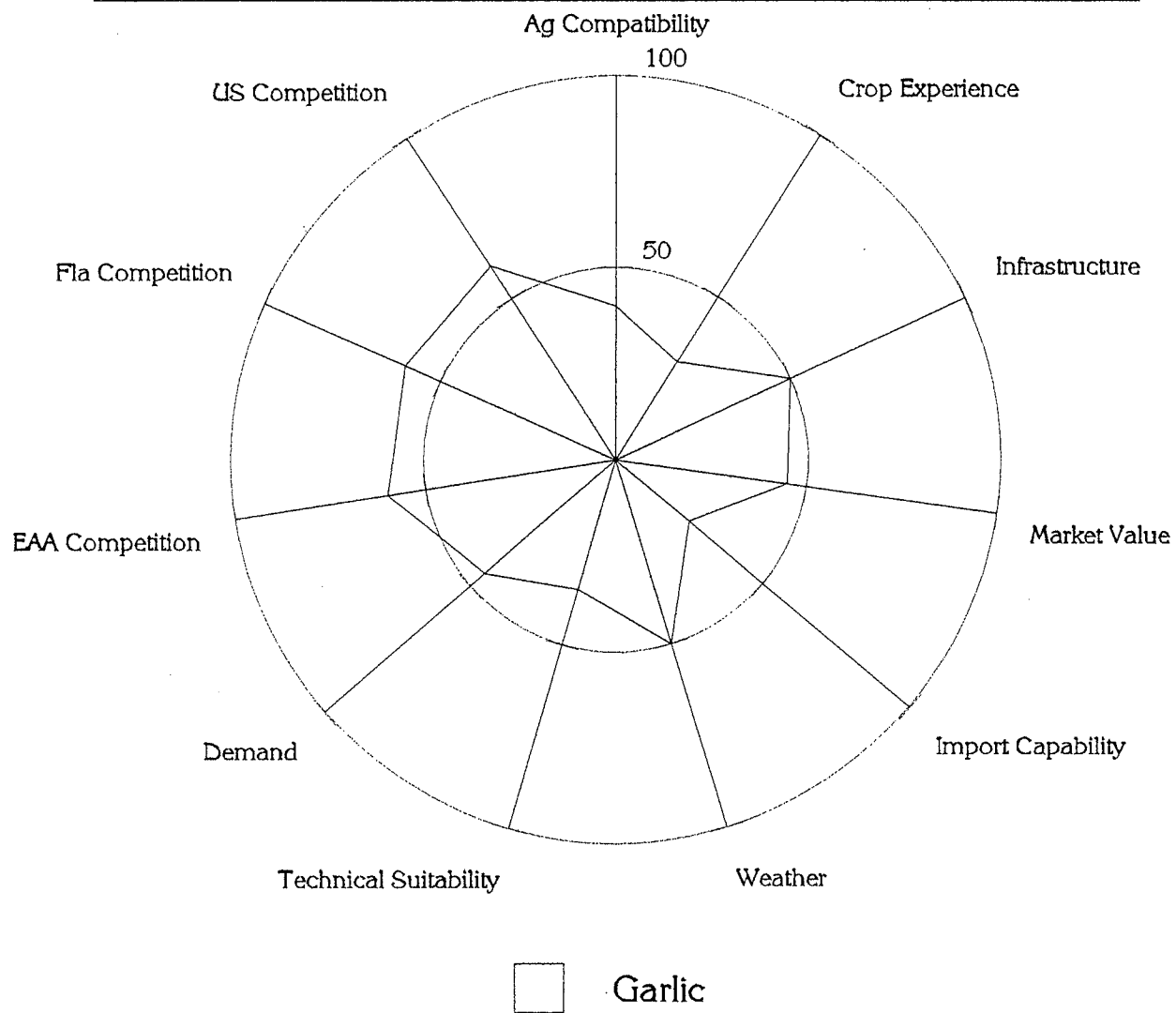


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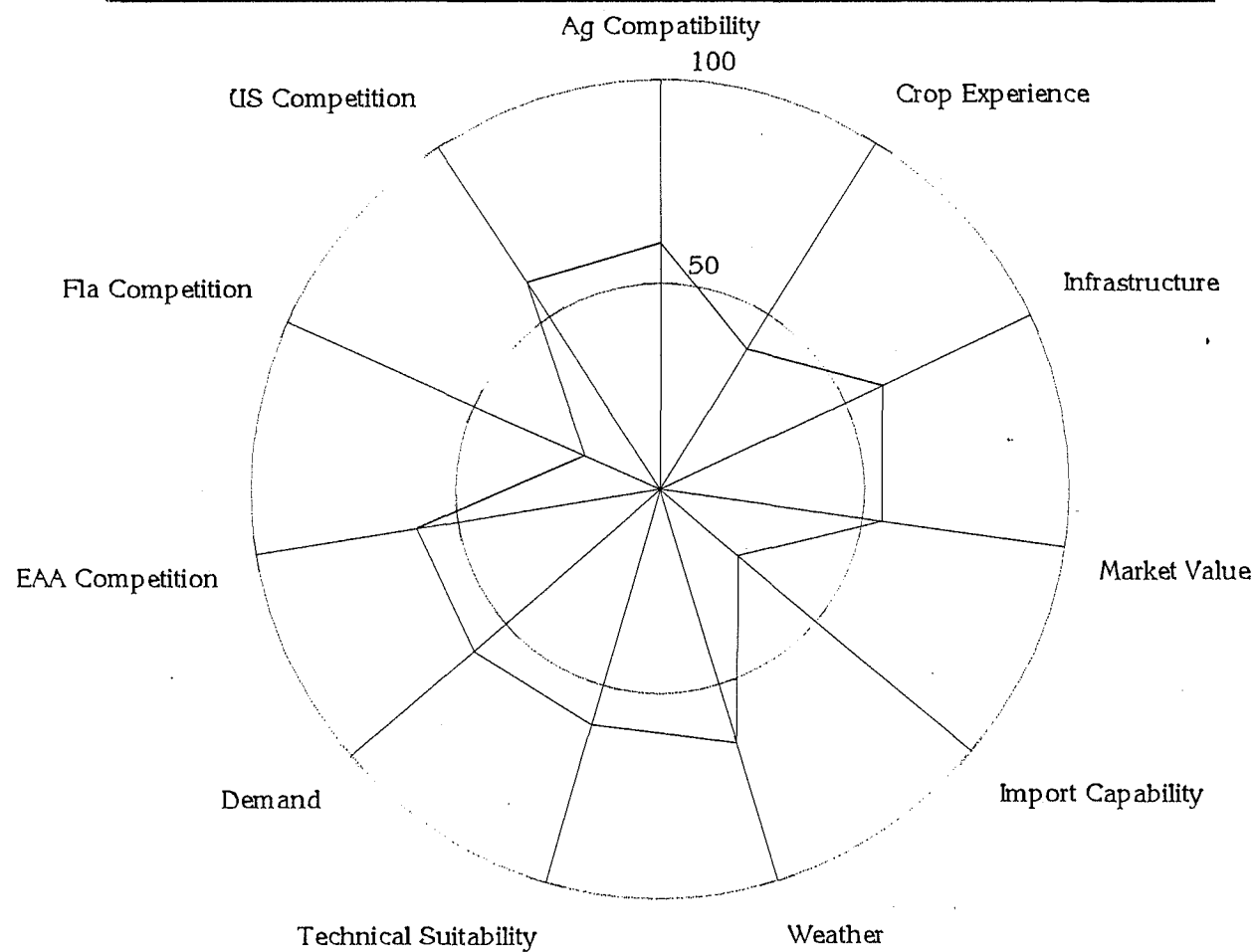


□ Okra

Production Analysis of Various Vegetable Crops in Eastern Palm Beach County

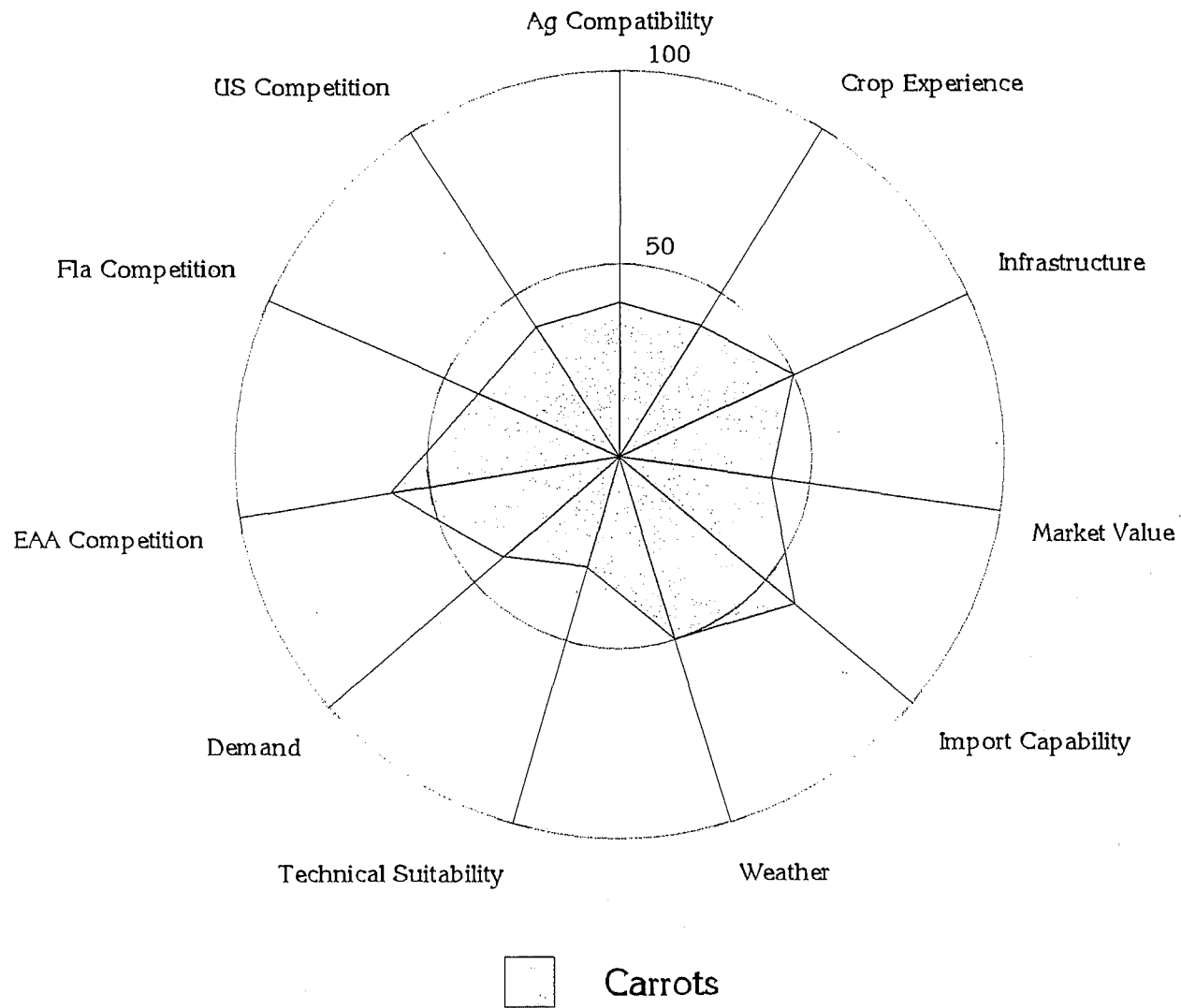


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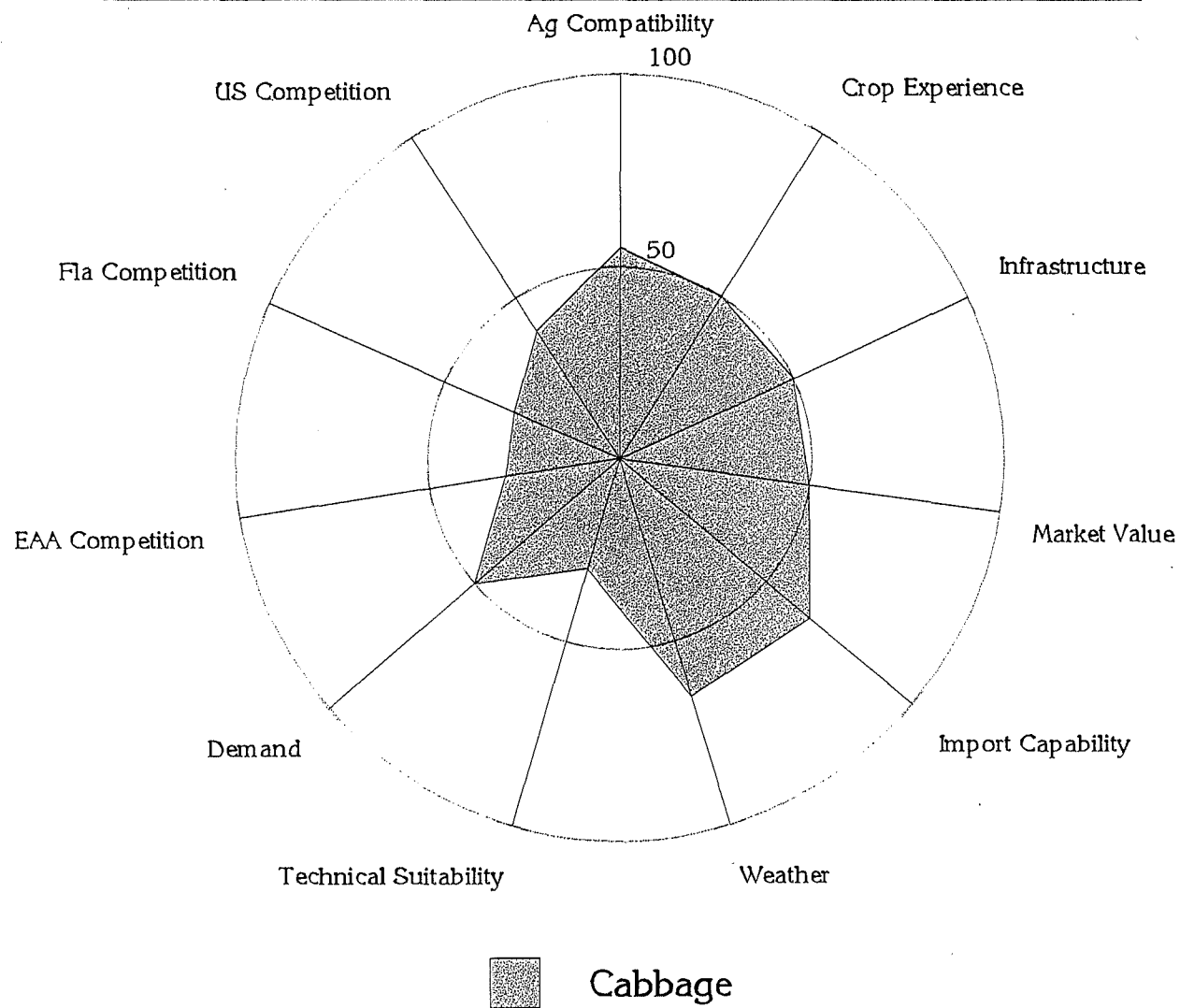


☐ Cuban Vegetables

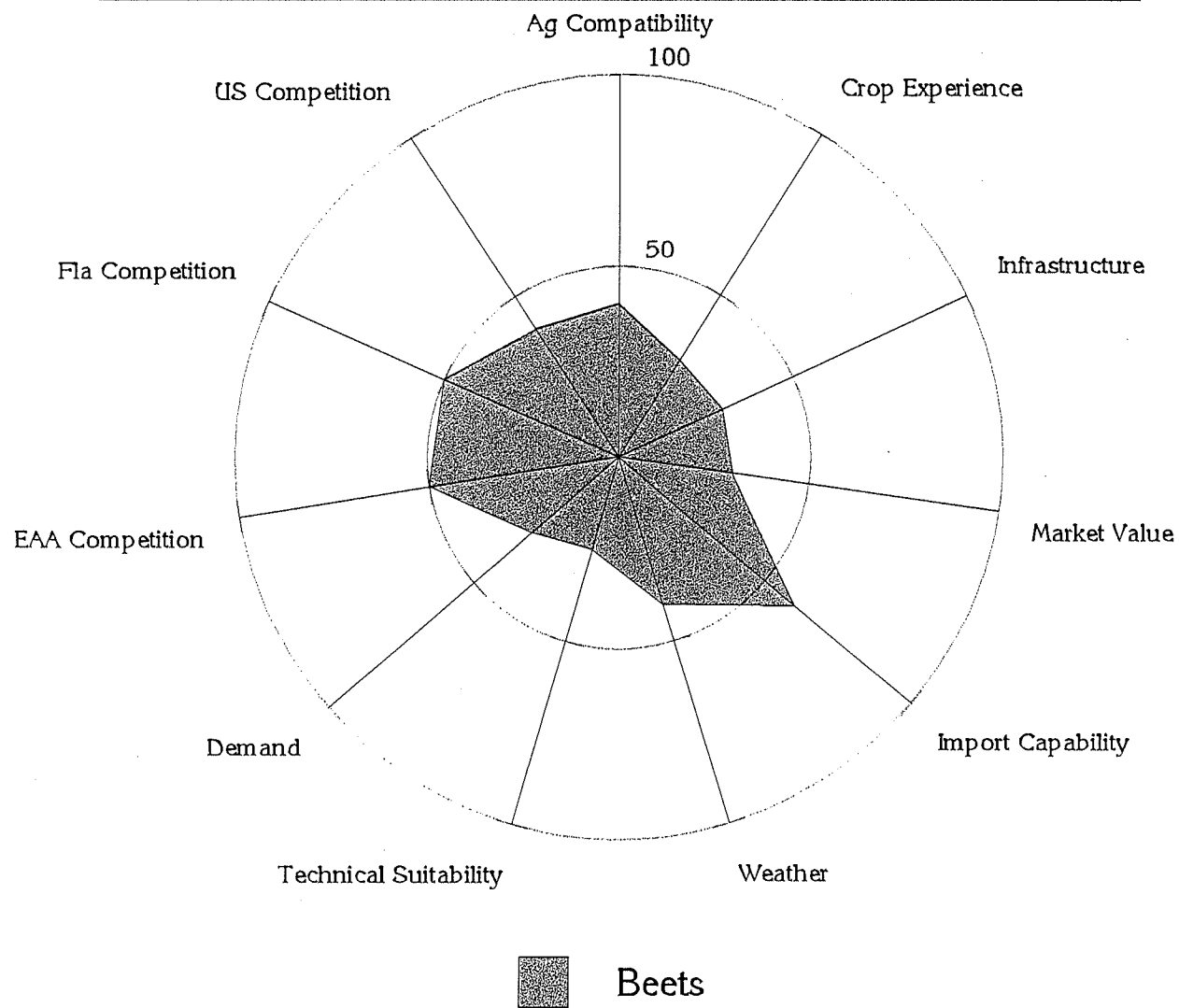
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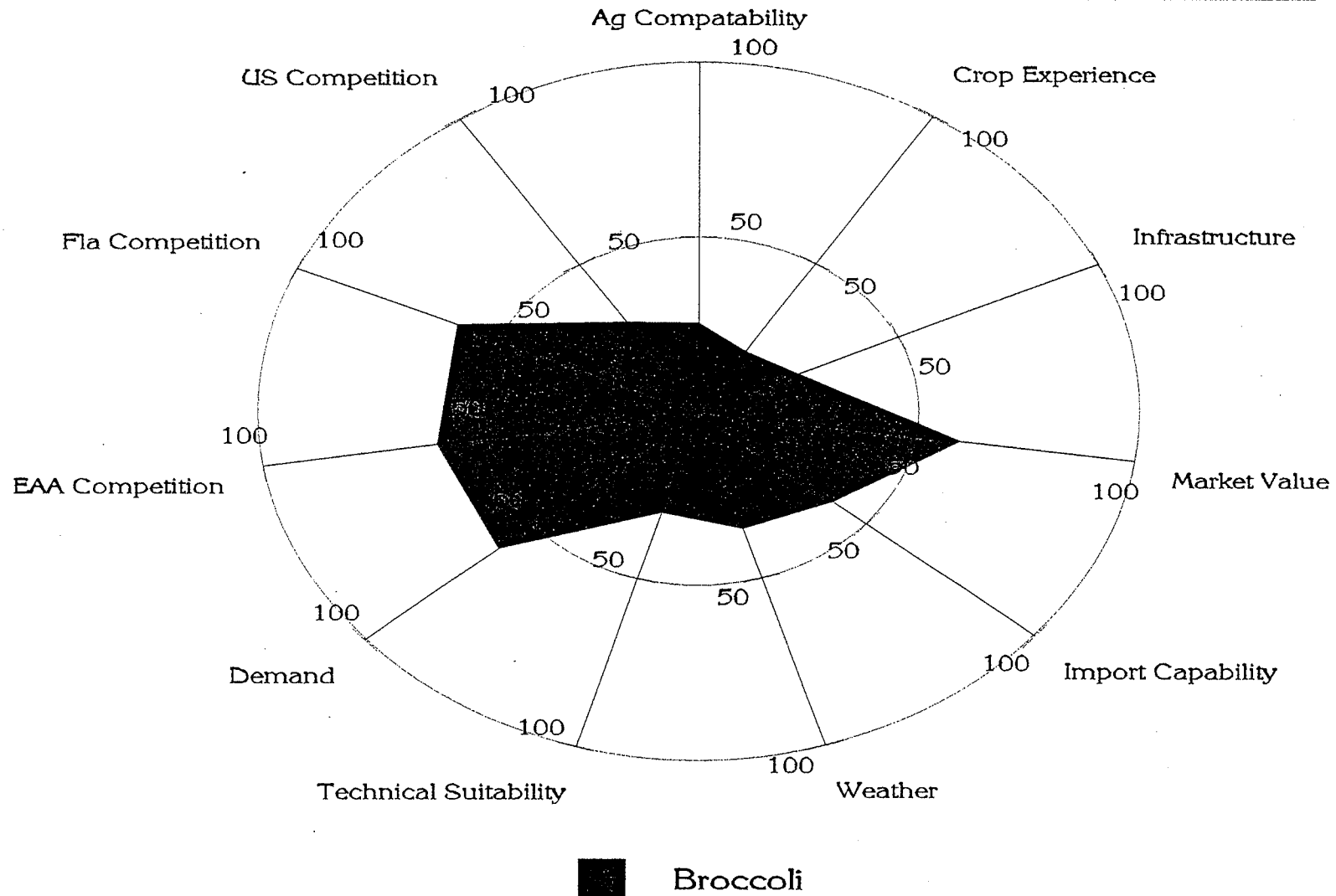
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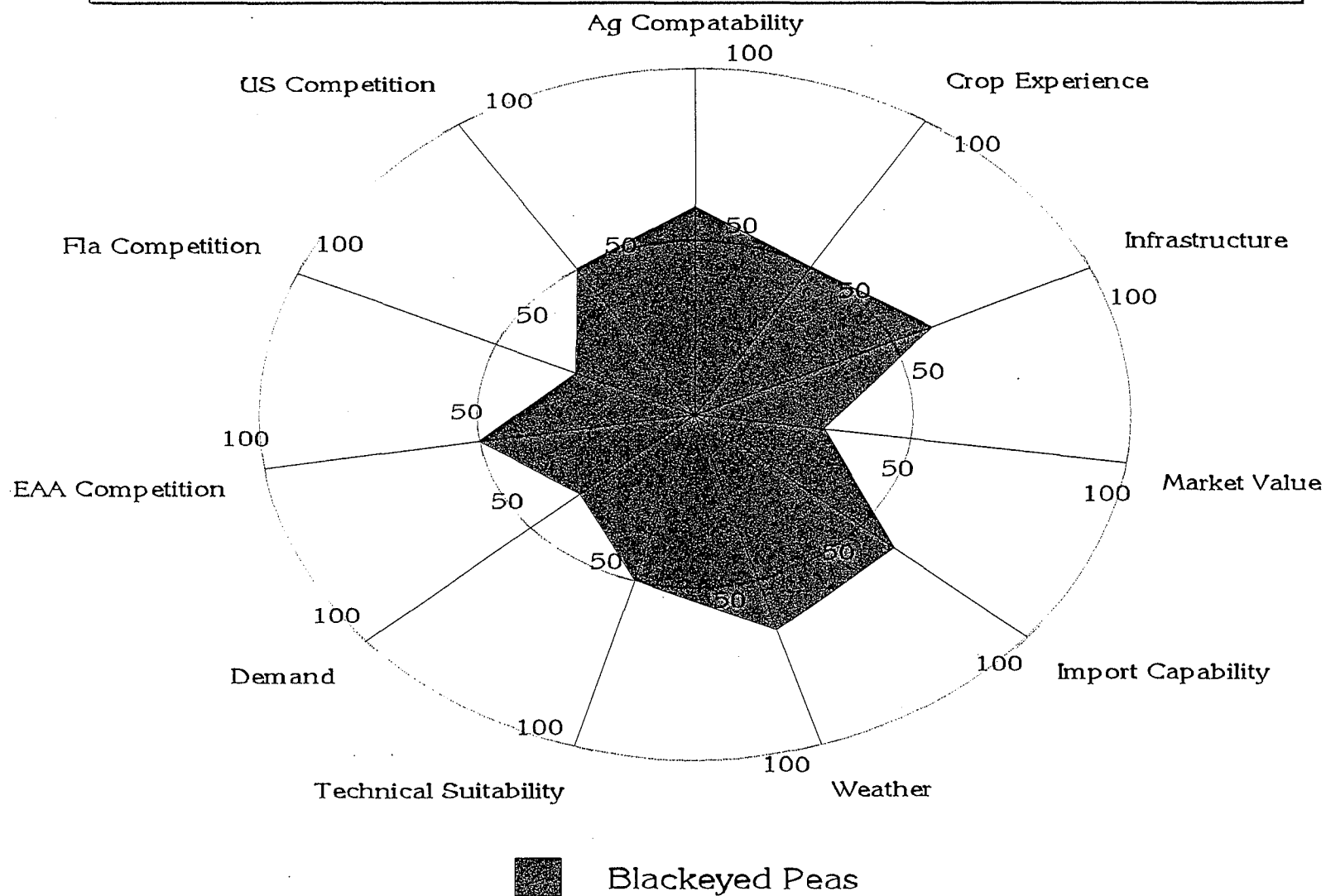
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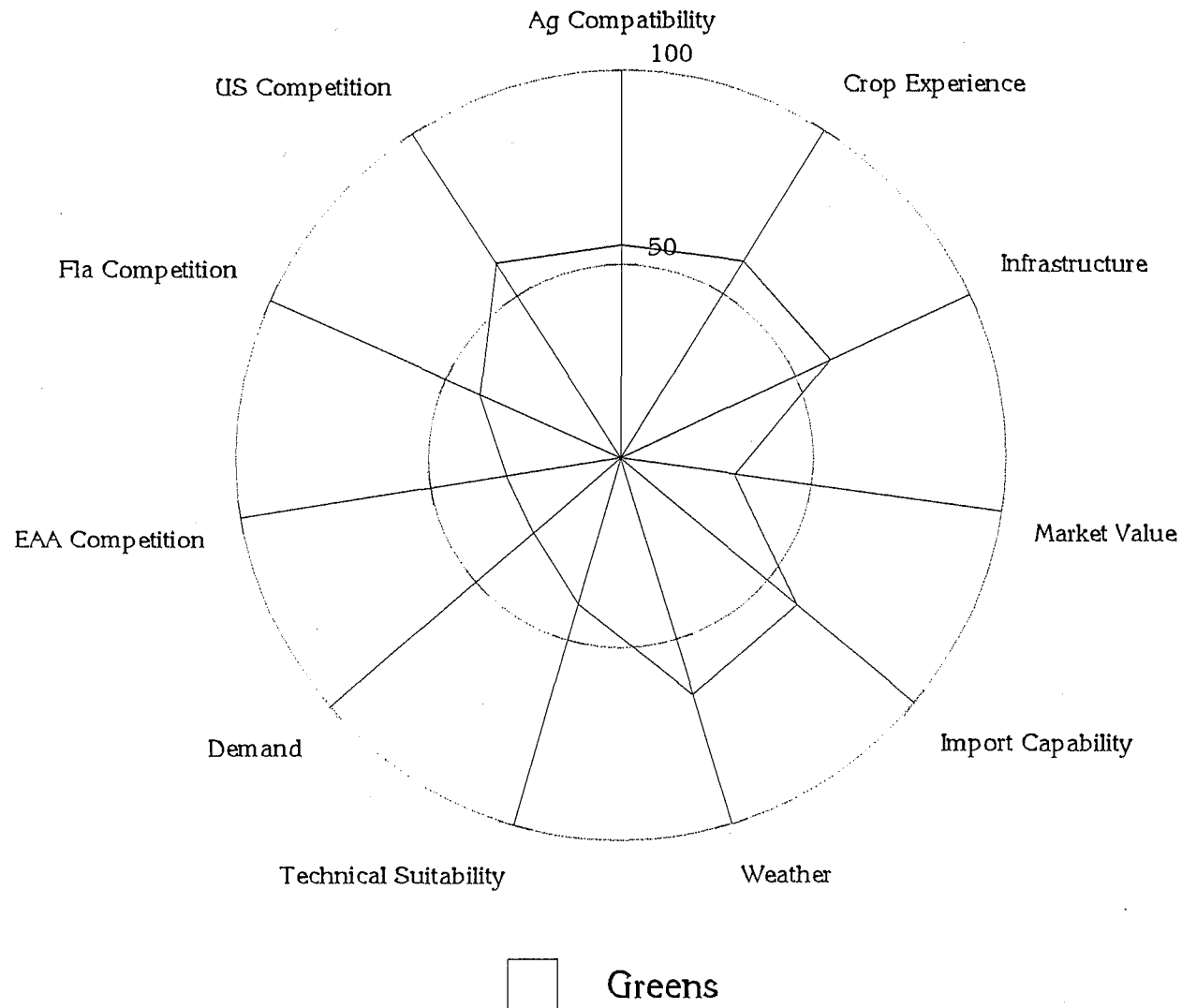
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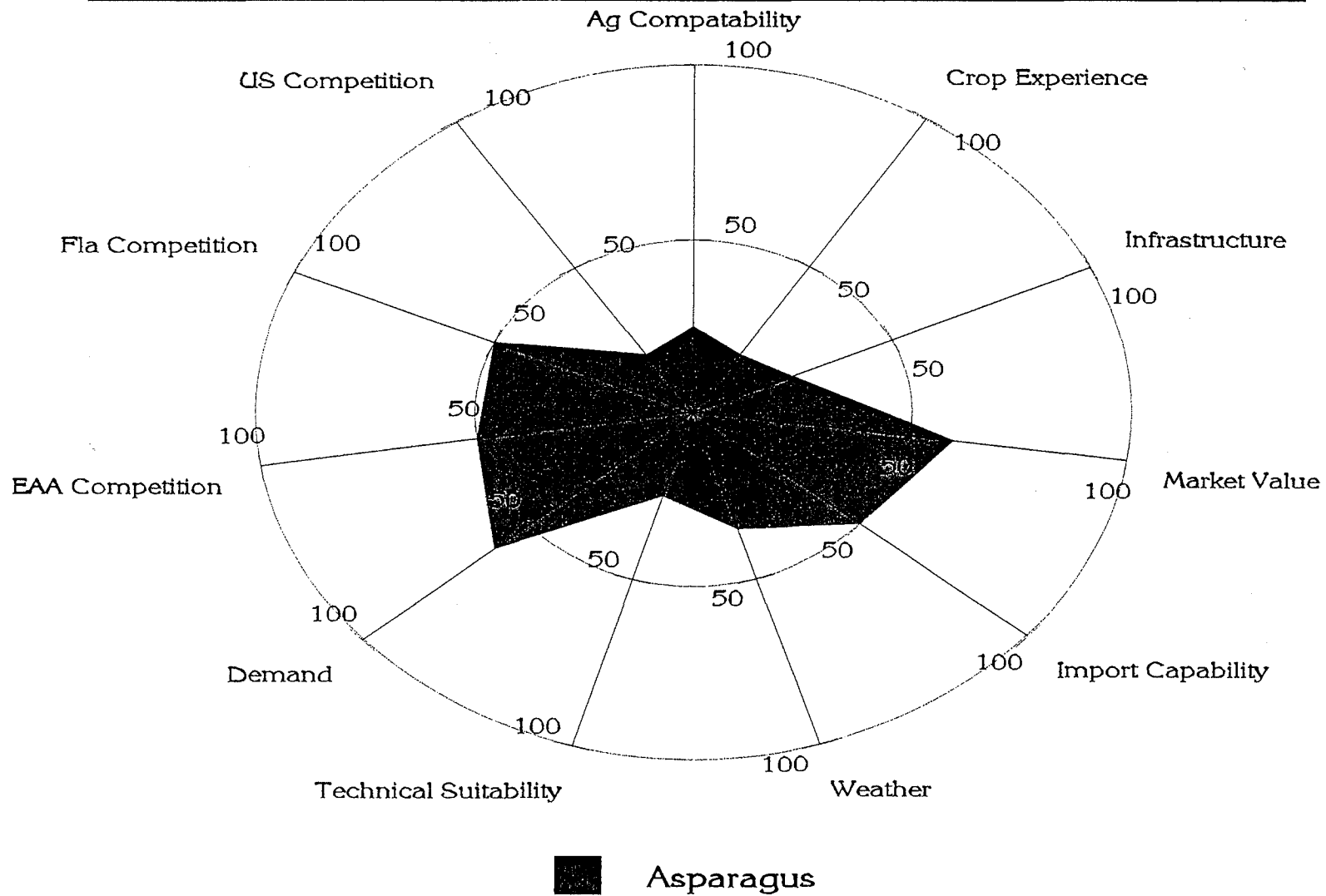
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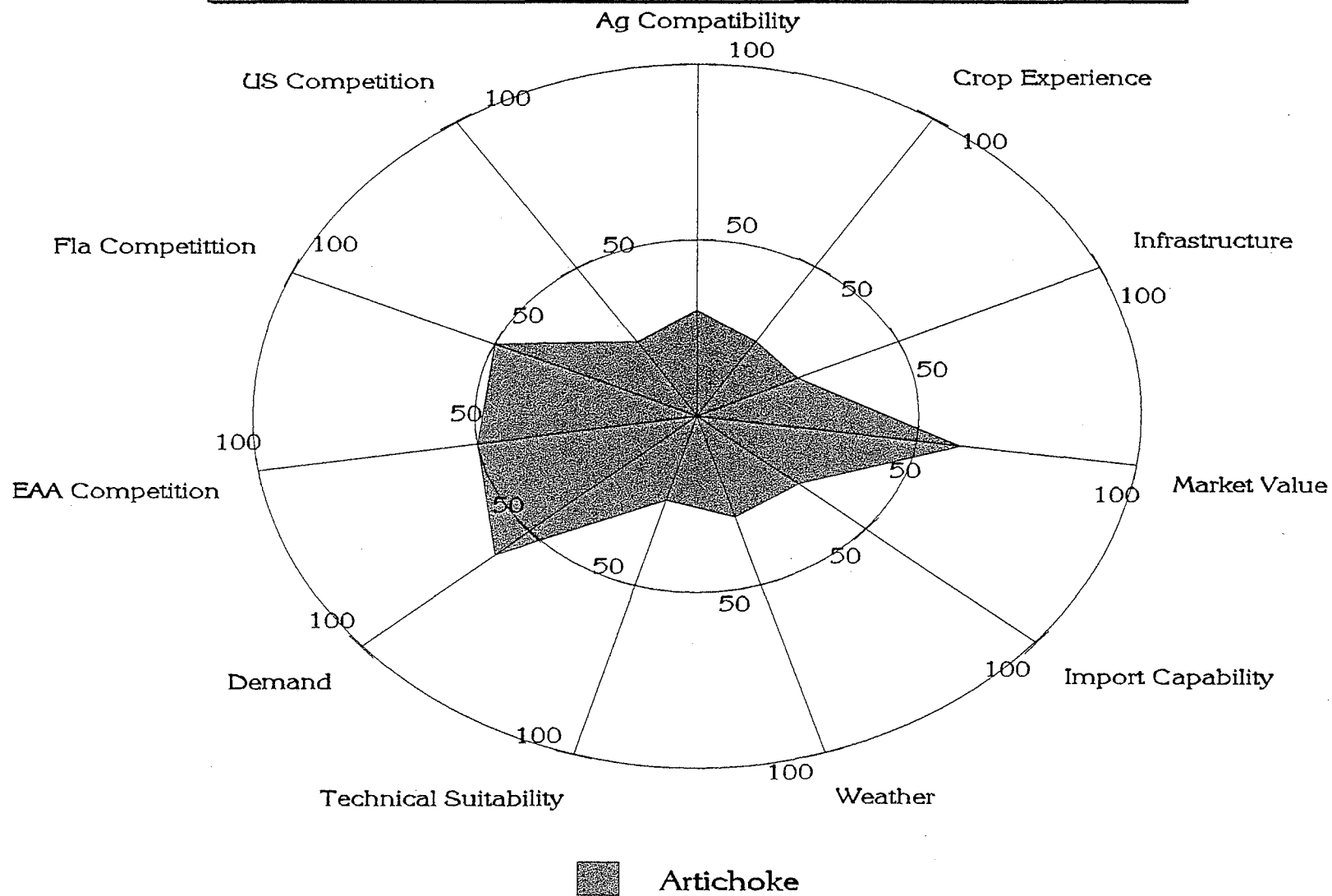
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Production Analysis of Various Vegetable Crops in Eastern Palm Beach County



Production Analysis of Various Vegetable Crops in Eastern Palm Beach County



Agricultural Index of Presently Cultivated Crops in Palm Beach County

The following list is a more detailed compilation of crops grown in the Ag Reserve and the Everglades Agricultural Area. Although some are in limited production, most of these crops are still being cultivated. It must be noted that generally these are low-consumer demand specialized crops and although some are presently only grown in the EAA, there is potential for production within the Ag Reserve.

AGRICULTURAL RESERVE [Eastern Palm Beach County]

○ Beans:

- ✧ *Bush Kentucky Wonder Beans*
- ✧ *Cranberry*
- ✧ *Popady*
- ✧ *Snapbeans*
- ✧ *Wax Beans*

○ Chinese Vegetables:

- ✧ *Amaranth*
- ✧ *Bok Choy (Baby)*
- ✧ *Bok Choy (Choy-Sum)*
- ✧ *Bok Choy (Regular)*
- ✧ *Bok Choy (Shanghai)*
- ✧ *Chinese Broccoli*
- ✧ *Chinese Celery*
- ✧ *Chinese Chives*
- ✧ *Chinese Mustard*
- ✧ *Chinese Radish*
- ✧ *Chinese Bitter Melon*
- ✧ *Chinese Winter Melon*
- ✧ *Chinese Yard Long Bean*
- ✧ *Cilantro (Coriander)*
- ✧ *Japanese Radish*
- ✧ *Korean Radish*
- ✧ *Napa Cabbage*

○ Greens:

- ✧ *Green Cabbage*
- ✧ *Greens (Collard)*

- ✧ *Greens (Mustard)*
- ✧ *Greens (Turnip)*

○ Herbs

- ✧ *Arragulla*
- ✧ *Basil*
- ✧ *Italian Parsley*
- ✧ *Dandelion*
- ✧ *Dill*
- ✧ *Oregano*
- ✧ *Rosemary*
- ✧ *Sage*
- ✧ *Spearmint*
- ✧ *Thyme*

○ Peppers

- ✧ *Green Bell Pepper*
- ✧ *Yellow Pepper*
- ✧ *Red Pepper*
- ✧ *Orange Pepper*
- ✧ *Purple Pepper*
- ✧ *Cubanelle Pepper*
- ✧ *Fingerhot Pepper*
- ✧ *Habanero Pepper*
- ✧ *Hungarian Wax Pepper*
- ✧ *Jalapeno Pepper*
- ✧ *Longshot Pepper*
- ✧ *Scotch Bonnet Pepper*

○ Squash

- ✧ *Acorn*
- ✧ *Buttercup*
- ✧ *Butternut*
- ✧ *Miniature*
- ✧ *Spaghetti*
- ✧ *Squash Flowers*
- ✧ *Straight Neck Yellow Squash*
- ✧ *Zucchini Squash*

○ Specialty Tomato

- ✧ *Regular Tomato*
- ✧ *Hydroponic Tomatoes*
- ✧ *Plum / Roman Tomatoes*

○ Cucumber

- ✧ *European Cucumber*
- ✧ *Pickling Cucumber*
- ✧ *Slicing Cucumber*

○ Eggplant

- ✧ *Chinese Eggplant*
- ✧ *Italian Eggplant*
- ✧ *Puerto Rican Eggplant*
- ✧ *Regular Eggplant*
- ✧ *Sicilian Eggplant*
- ✧ *White Eggplant*

○ Corn

- ✧ *Sweet Corn [Bi-Color]*
- ✧ *Sweet Corn [White]*
- ✧ *Sweet Corn [Yellow]*

○ Tropical Fruits

- ✧ *Avocado*
- ✧ *Banana*
- ✧ *Blueberry*
- ✧ *Carambola*
- ✧ *Loquat*
- ✧ *Longan*
- ✧ *Lychee*
- ✧ *Mango*
- ✧ *Pineapple*
- ✧ *Plantains*
- ✧ *Papaya*
- ✧ *Sugar Apple*

EVERGLADES AGRICULTURAL AREA

○ Lettuce and Miscellaneous Leaf

- ✧ *Bibb*
- ✧ *Boston*
- ✧ *Green Leaf*
- ✧ *Iceberg*
- ✧ *Red Leaf*
- ✧ *Romaine*
- ✧ *Parsley [Curley]*
- ✧ *Parsley [Plain]*
- ✧ *Kale*

Specialty Produce

Alternative Crops

There practically exists an endless variety of "specialty" crops with low-acreage requirements and high-value yields. Be advised that consumer demand, production requirements, and other unknowns may limit their practical applicability. The following is a list and short summary of different produce that are agronomically suitable for cultivating within the Ag Reserve.

- | | |
|--------------------------|---|
| ⇒Annatto: | Tropical flower with red seeds that can be used as a natural dye. This red dye is tasteless and can be used for coloring foods such as cheese, rice, noodles, and macaroni. |
| ⇒Appaloosa Beans: | Delicate flavored beans that double in size when cooked |
| ⇒Atemoya: | Grown in various areas of Florida, this tropical fruit has a pale green and bumpy skin. Its pulp is creamy white with black seeds. |
| ⇒Australian Blue Squash: | Cultivated in California, this squash has a blue-grey shell that reveals a thick, orange flesh that is soft and mild-flavored like a pumpkin. |
| ⇒Babaco: | Large papaya with a strawberry flavor. Mostly imported from New Zealand with limited production in California. |
| ⇒Baby Pineapple: | 5 inches tall, this fruit has a full pineapple taste. Once it is picked it does not continue to ripen. |
| ⇒Baby Cauliflower: | Miniature cauliflower [2" diameter] with full taste. |
| ⇒Baby Corn: | Produced in Mexico and California. Grown in white and yellow varieties, it is generally used in salads and special dishes. |
| ⇒Baby Eggplant | Only produced from May to October, demand is low for this miniature. |

- ⇒Baby French Green Bean: Available from California from February to November, it has recently gained popularity throughout the US
- ⇒Baby Green Onions: Taste similar to chives
- ⇒Baby Lettuce: Year-round production in California, it is used extensively for packaged salads.
- ⇒Baby Scallopini: Cross between a scallop and zucchini.
- ⇒Baby Soft Squash: Almost identical in taste to regular squash.
- ⇒Baby tear-drop Tomato: Available May through October. Both yellow and red varieties are grown.
- ⇒Baby Zucchini: Mostly imported from Mexico and Guatemala.
- ⇒Barbados Cherries: Limited cultivation in Florida and Hawaii. Sweet flavor for use fresh, in preserves, purees, and desserts.
- ⇒Belgian Endive: Relative of the chicory. Mostly imported but grown hydroponically in some locations.
- ⇒Black Radishes: Resembling large black turnips with a white interior, this vegetable has a sharp, pungent flavor. Generally used in salads or creamed.
- ⇒Boniato: Also known as Cuban potatoes, this is a tropical white sweet potato cultivated and imported from the Caribbean and Central America. Limited production in South Florida.
- ⇒Breadfruit: Often used as a vegetable, this imported fruit can be cooked or eaten raw. Imported from the Caribbean.
- ⇒Calabaza: Hard shelled squash mostly produced in Florida. Also called West Indian pumpkin, it is a staple for the Latin-American community.
- ⇒Canistel: Another Florida winter-grown fruit, the Canistel has a thin, glossy skin and is similar to a cooked sweet potato.

- ⇒Cassava: Also called *Yuca*, this cooking vegetable is widely grown and consumed in South America and by Latin-Americans in this country.
- ⇒Chayote: Known as vegetable pear, it has a crisp, pale flesh with a taste that blends cucumber, zucchini and kohlrabi.
- ⇒Cherimoya: Imported from various countries in South America and Europe, this fruit is also known as custard apple. It has a juicy creamy white flesh with black seeds. It is generally served chilled or served in fruit salads, drinks, or pies.
- ⇒Cucuzza Squash: Authentic Italian vegetable with a mildly sweet flavor. It is mint color and presently only grown commercially in Louisiana.
- ⇒Hoenyloupe: Cross between cantaloupes and honeydews, this melon has a very sweet flavor and contain very few seeds.
- ⇒Jaboticaba: Native of Brazil, this fruit looks very much like a grape with a maroon skin with muscadine flavor. Presently grown in areas of Florida.
- ⇒Jicama: Known as the "Mexican Potato", the Jimama grows year-round with a very thin skin and creamy flesh.
- ⇒Lemon Grass: Also known as ti de lemon, sereh, citronella root, and takrai, lemon grass is used in salad dressings, chicken, and marinades. Cultivated in California throughout the year.
- ⇒Malanga: Cuban and Hispanic staple grown primarily in Miami-Dade County or imported from various countries in South America, it has a nutty taste and resembles a taro root.
- ⇒Monstera deliciosa: Shaped like a cucumber, this fruit taste like fresh pineapple and ripe banana. Presently grown in some areas of Florida.

- ⇒Passion Fruit: Is the edible fruit of the passion flower. Grown year-round in Florida. Used as a sauce, ice cream, custard, puddings, and tropical drinks.
- ⇒Pepino melon: Also known as the melon pear or mellow fruit, it is a native of Chile, Peru, and Colombia. It is also available from New Zealand and California. This oval-shape fruit has a smooth, firm skin and its is mildly sweet.
- ⇒Plantain: Imported form Ecuador, Mexico, Colombia, and Venezuela, they are generally cooked at various stages of ripening.
- ⇒Pummelos: Known as Chinese grapefruit, the pummelos is the largest of the citrus fruits. It is sweeter than the grapefruit. It is available from California.
- ⇒Rapini: Popular in Italian and Chinese cooking, rapini has dark green leaves and a slightly bitter flavor. Grown in California.
- ⇒Rattlesnake Bean: Have a full flavor that works well with chili or served with grilled meats.
- ⇒Romanesco: Decorative cauliflower that cooks quickly and a very mild taste.
- ⇒Salad Savoy: Closely related to the kale and cabbage, the flavor of the savoy resembles cabbage, cauliflower, and broccoli. It is generally stir-fried or steamed for salads or garnish.
- ⇒Tahitian Squash: Similar to the butternut squash, it has a deep orange flesh and high sugar content. Produced in California.
- ⇒Wampee: 1" spherical round fruit, the wampee has a translucent skin and a jelly-like flesh with a tart taste.
- ⇒Winged Beans: Flavor between shell bean and pod bean, it is imported from Southeast Asia.
- ⇒Tomatillos: Also called Mexican husk tomatoes, the tomatillo is imported from Mexico or produced in California. It has a slight acidic, lemon flavor.

⇒Yellow-eyed bean: Resemble blackeyed peas with gold pigmentation, it has a mellow flavor that complements baked bean dishes and casseroles.

⇒White Sapote: Also called Mexican custard, the white sapote are available from both Florida and California. It has an edible green skin with a whitish sweet flesh that taste like papaya and banana.

greenhouse + nursery in the Ag Reserve

A viable substitute option to the present row crops within the Ag Reserve continues to be greenhouse and nursery production.

↘ Advantages to this type of farming within this area are:

1. Net income per acre is considerable higher than most row crops
2. Increased urban development will require additional greenhouse and nursery products.
3. Lesser risk factor
4. Type of agriculture more compatible with urban proximity
5. Less exposed to imports
6. Infrastructure in place

↘ Disadvantages to additional greenhouse and nursery production in the Ag Reserve:

1. Present high concentration of nurseries with Eastern Palm Beach County
2. Lower cost producers in Miami-Dade County
3. Competition from other areas in Florida

Financial Risks

RATIO	All Firms	Containers Woody Ornamentals	Flowering Plants	Central Florida Foliage	South Florida Foliage
Quick Ratio*	1.05	1.38	3.81	2.65	0.67
Leverage** Ratio	1.65	1.55	1.24	1.33	2.01

*Quick Ratio: Ability to meet short-term debts. (cash+accounts receivables/current liability)
High profitable firms had a quick ration averaging 1.30

**Leverage Ratio: Ratio between Total Assets and Net Worth. Long-term solvency indicator.
Generally, leverage factors under 2.0 are considered to represent safe financial positions.

The following charts gives a general historical financial overview of the greenhouse and nursery industry in Florida. Information obtained from:

Business Analysis of Ornamental Plant Nurseries in Florida, 1995

University of Florida

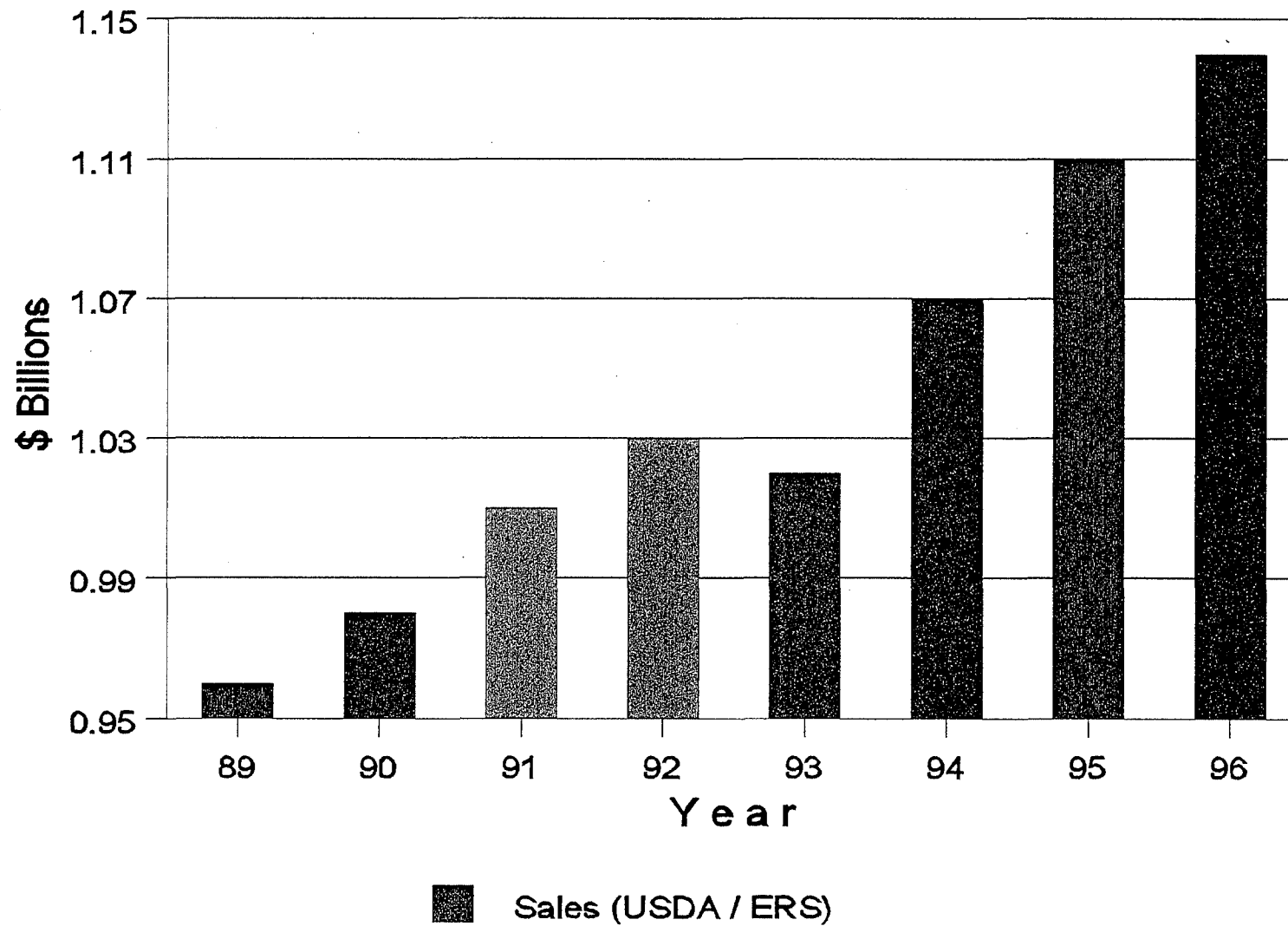
Economic Information

Report 97-3

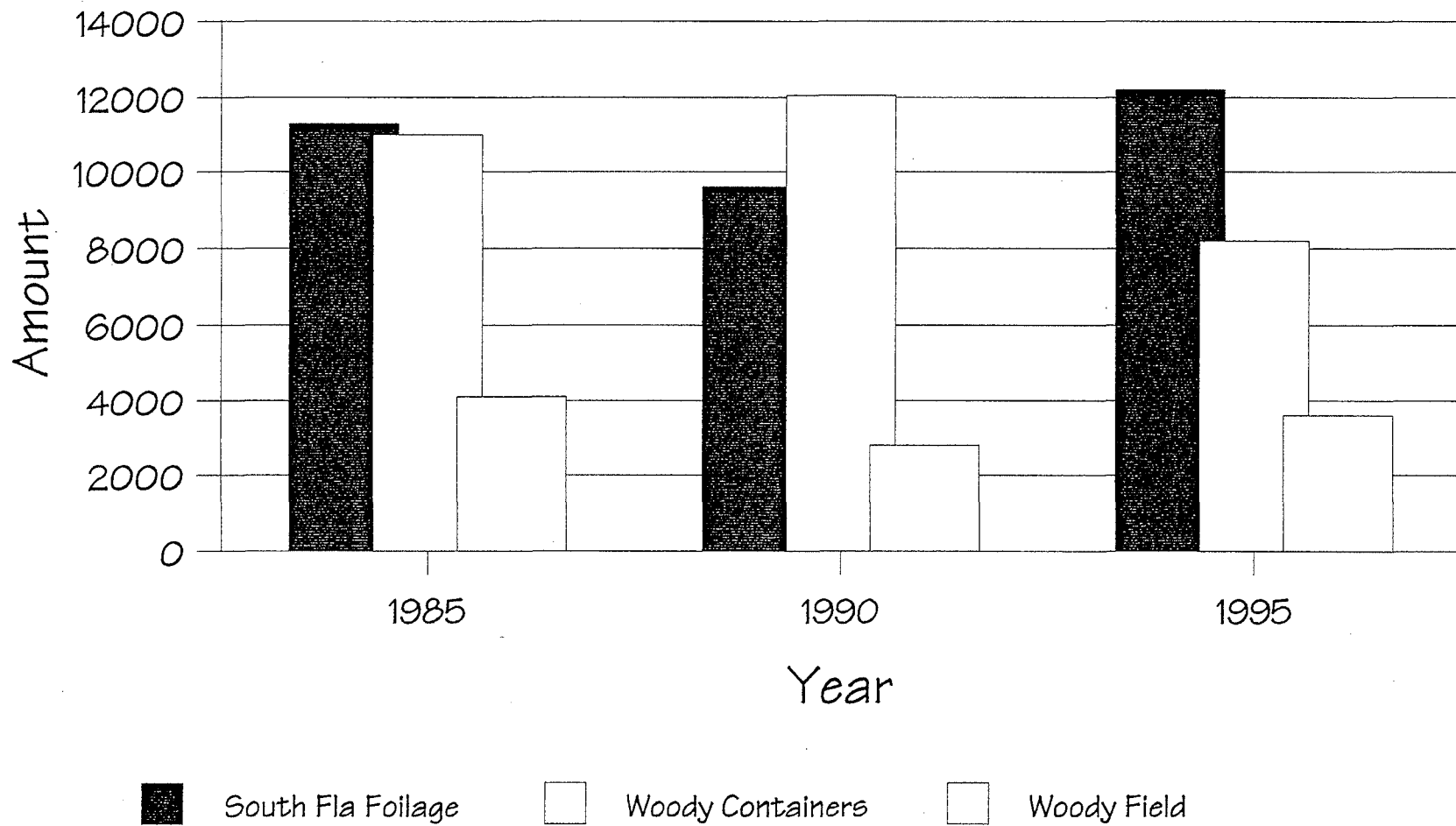
July 1997

by: Alan H. Hodges
Loretta Satterthwaite
John J. Haydu

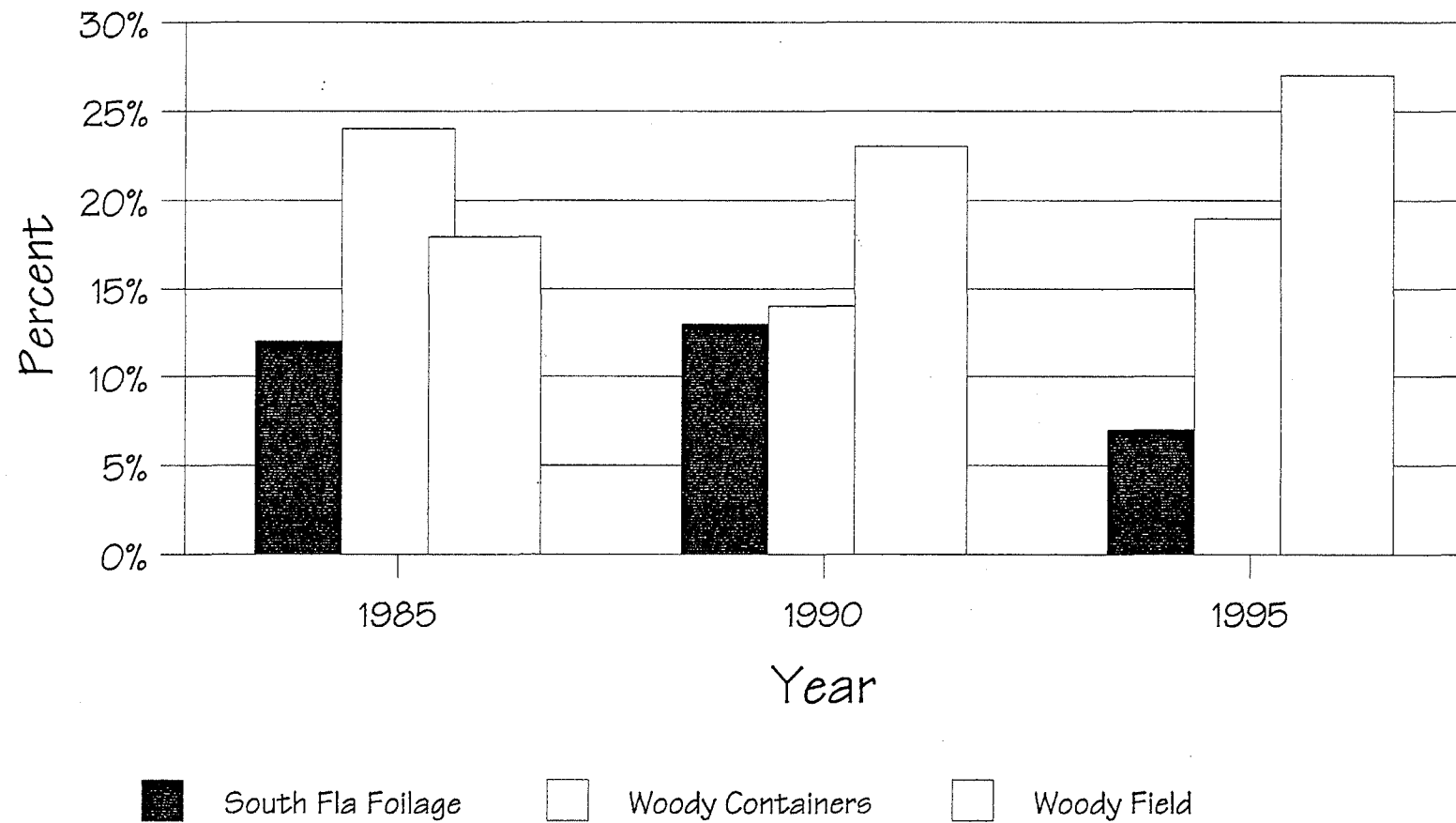
Sales of Greenhouse and Nursery Crops in Florida



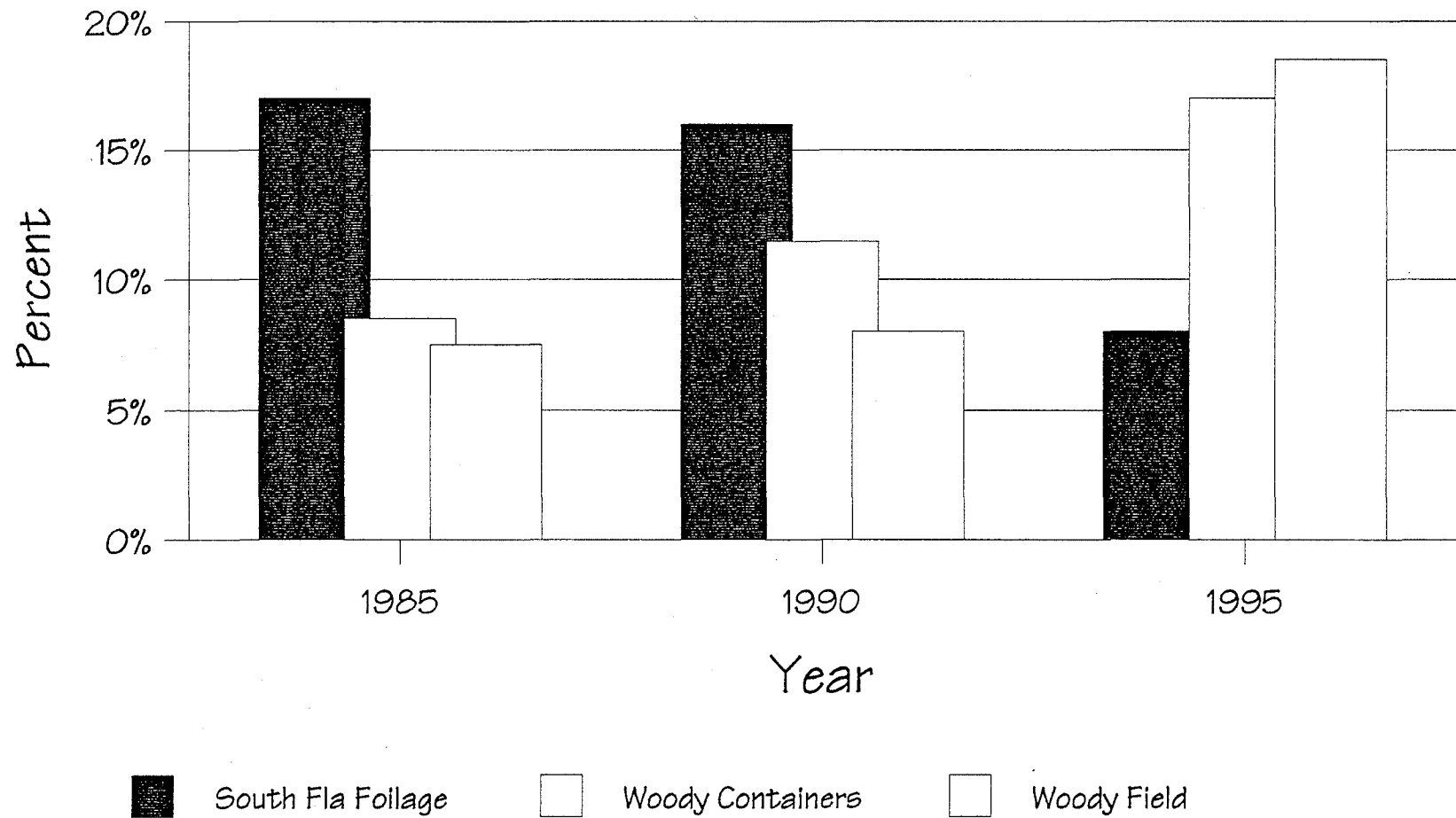
Net Income per Acre



Net Margin



Rate of Return on Net Worth



SUSTAINABLE AGRICULTURE FOR THE AGRICULTURAL RESERVE

The South Florida Ecosystem Restoration (SFER) Working Group and the Governor's Commission for a Sustainable South Florida recognize that agriculture is a critical industry, both economically and environmentally. In South Florida agriculture lands buffer natural systems from urban areas, and inhibit urban sprawl, while providing extensive employment opportunities and agricultural products. Thus, the loss or conversion of agricultural lands to urban development undermines the restoration of the South Florida ecosystem. Transforming development patterns within urban areas and designating open space outside these areas for non-urban uses are tools for a sustainable community. Designating lands in local government comprehensive plans for non-urban uses continues land in agricultural production, buffers natural systems from urban areas, preserves natural systems and inhibits urban sprawl. The SFER Working Group established a Sustainable Agriculture Task Team that is charged with preparing a Sustainable Agriculture Plan for South Florida.

This report, prepared by the Task Team, is intended as guide for use by the Palm Beach County Board of County Commissioners as they begin to prepare Phase II of the Agricultural Reserve Master Plan.

Tools for a Sustainable Agriculture

I. *PLANNING*

A. Buffer Planning

Buffer areas and widths for environmental lands, water managed areas and agriculture will be developed as part of Phase II of the Agriculture Reserve Master Planning process. The Agricultural Reserve Master Plan Phase II is due May 1999.

Thus far, research has not yielded buffer guidelines for agricultural uses. While developing standard for the 1995 Agricultural Reserve Plan amendment, standard for buffers were addressed with the acknowledgement that this area was to be preserved primarily for agricultural use if possible, and if not, to be developed only at low residential density. Thus, the standards for buffering were developed to accommodate agriculture. However, buffer guidelines for various agricultural uses (row crops, citrus, nurseries, etc.) were not available.

Currently, Palm Beach County Unified Land Development Code has established a 50' buffer for development when the development is adjacent to agriculture.

B. Bond Money

Use of bond money/master plan could be utilized to prevent fragmentation of the Agricultural Reserve area into less desirable development. The County has retained a consultant, CH2M Hill Inc. to develop a master plan for the Agriculture Reserve. At the conclusion of Phase I of

the master plan the Board of County Commissioners will make a decision on pursuing a bond referendum.

C. Agriculture and Development option with acceptable overall pattern

The County has retained a consultant, CH2M Hill Inc., to develop a master plan for the Agricultural Reserve. The purpose of the master planning effort is to preserve and enhance agricultural activity and environmental and water resources in the Agricultural Reserve, and produce a master development plan compatible with these goals.

D. Cluster Development

Currently, the Agricultural Reserve has cluster development options for 80/20 and 60/40 open space/development at one unit per acre if certain criteria can be met such as the size of the parcel and location of the parcel. Cluster development preserves a percentage of the land for agriculture including equestrian uses, open space, and water managed areas. Without the cluster options the density of the Agricultural Reserve is one dwelling unit per five acres - straight subdivision. The incentive to utilize an "open space design" such as cluster development is the increase in density from one dwelling unit per dwelling unit five acres to one dwelling unit per one acre. However, the development standards for the cluster development in the Agricultural Reserve using various build out scenarios - does not create a pattern that will preserve agricultural/open space in the long run. This is another reason the Agricultural Reserve is being master planned at this time.

II. *INCENTIVES*

A. Compensate farmers for maintaining open space

There are benefits to society for providing open space. Provide the farmer with an annually renewable lease based on keeping land in production. The method of payment would be a portion of the utility charges paid by new residents based on a cost it would have taken to run new utilities into the farm area. Another option would be to utilize the 88 cents of every dollar paid in property taxes by the farmer, but used to offset development costs, to pay him back for staying in farming and letting development pay for itself.

B. Direct payments to support agriculture that provides specific desired public benefits.

Public policies to sustain agriculture in south Florida are concerned with amenity and open-space benefits over and above the economic development and job creation that this industry provides. Exactly what the public desires and is willing to pay for in terms of the amenity and open-space benefits can be estimated by survey research. Expenditures of public funds could be made to agricultural producers who adopt practices that assure that the amenity and their farms will produce open-space benefits desired by the public.

- C. Compensate the farmer for the benefit of his land remaining as a water recharge and below ground water storage area.

There are significant costs associated with providing water for future growth. The farmland, as used by the farmer, is beneficial in providing part of that capacity. There is an opportunity for the farmer to share in the cost savings by his continuation in farming. The cost would be shared by the water management district and the county based on decreased need to provide more water.

- D. Water User Fees - (Govt.) - Develop a funding mechanism by creating a water user fee for doing what it takes to keep sustainable agriculture and the benefits of recharge areas provided by the open space. This technique will allow farmers to upgrade their own irrigation technology without having to request a land use change to a higher density in order to obtain higher land values for bank loan purposes. Since agriculture land preservation would be by a vote of the citizens, this method of user pay where the cost of water is associated with the cost of preserving the land. Agricultural land serves as better recharge area than developed urban areas. This is a method of conservation in a state where water rights cannot be purchased or sold but where conservation and water use efficiency is state policy.
- E. Conservation easements - Utilize PACE and/or Bond money to purchase easements, either short term or perpetual, for a) maintaining wildlife corridors, b) greenway connectors, c) realigned transportation, water course or flow ways, d) water recharge and storage and e) farmland. Landowners would receive an annual payment for the easement. The manner in which the AG Reserve area is platted serves to facilitate urban development. If existing farm parcels were transected by conservation easements of non-conforming, wandering corridors, the desirability of housing and commercial development would wane. Adding to this the concept of rerouting transportation and watercourses to create a vision of a rural farmland area would increase the desirability of Ag-Eco tourism.
- E. Development of environmentally friendly agricultural practices-government purchase land and lease for other uses. Agricultural lands can serve public purposes, either short term or long term, such as buffer between natural areas and urban development and as aquifer recharge areas. These values can be enhanced through the development of more environmentally friendly agricultural production practices. Environmentally friendly agriculture could be the preferred user for government lands. This could be cost prohibitive since the farmers might opt to rezone and sell at higher prices. It could, though, if done on a one-time basis, prompt some landowners to sell and lease back rather than continue to speculate on increasing land values and the uncertainty of what the government may do with the land.

III. *TAX INCENTIVES AND ESTATE TAXES*

- A. Government (state, county) participation in payment of federal estate taxes due on lands protected from development by agreement. - Where government has an interest in preventing development on agricultural lands, consideration could be given to entering long term leasing of development rights in the Ag Reserve. Compensation to landowners could be in the form of participation in the payment of some percentage of the federal estate tax that becomes due on the property so leased. The county, state or both could participate in estate tax payments

- B. Propose Federal Estate Tax credit - Recommend to the Florida Congressional Delegation that they support federal legislation, which would allow the use of federal tax, credits to be used to pay for development rights on agricultural lands. Payments could be in the form of an annual credit (some percentage forgiveness) of the federal estate tax that would become due when the property is passed to succeeding generations. Utilize existing estate planning procedures to implement.
- C. Eliminate property taxes on agricultural lands in production where there is significant development pressure. This will provide relief that would allow farmers to come closer to staying profitable. The public would benefit due to the contributions of such action; no infrastructure being built for development and land staying open for water recharge. There would be minimal impact on the tax structure due to the green belt exemption already available.
- D. Investigate and hold workshops with land owners regarding charitable land contributions.

IV. *DEVELOPMENT RIGHTS*

- A. Transferable development rights with limits on zoning changes in receiving areas. - Transferable development rights can provide owners of agricultural land with access to the value of those lands that is embodied in the development of the land. The effectiveness of the transferable development rights approach depends on there being a market for such rights. Government bodies, which regulate zoning and the applicability of the development rights, play a strong role in determining whether there is a viable market for such rights. Not only do they determine the geographical area of their applicability and the allowable increases in density, but they also regulate the supply of units that can be obtained through zoning density changes. If obtaining zoning changes through boards is a feasible and cheaper alternative than purchase of development rights, then no viable market for development rights will ever come to fruition.
Transfer of Development rights. - Development rights can be separated from a parcel of land and sold to a private party, usually a developer, and used on another property. Local government designs a TDR program and decides where development rights can be moved from and moved to. The advantage of a TDR program is that the private sector, rather than tax dollars, is paying for preservation of the parcel from which the rights are purchased. The disadvantage is that the number of new residential units in the locality is not decreased, just moved.
- B. Tier TDR's values for re-urbanization - In September 1998, the Palm Beach County Board of County Commissioners adopted a revised Transfer of Development Rights (TDR) Ordinance. The TDR program is designed to protect Environmentally Sensitive Lands and the Agricultural Reserve. The revised TDR program is the required method for increasing density within the County, unless an applicant can justify and demonstrate a need for a Future Land Use Atlas (FLUA) Amendment and demonstrate the current future land use designation is inappropriate.

The Agricultural Reserve is designated as a sending area only for transfer of development rights. In addition, in order to encourage eastward development, and a tapering off of density toward the Urban Service Area Boundary, graduated bonus densities may be applied in the eastern areas of the County.

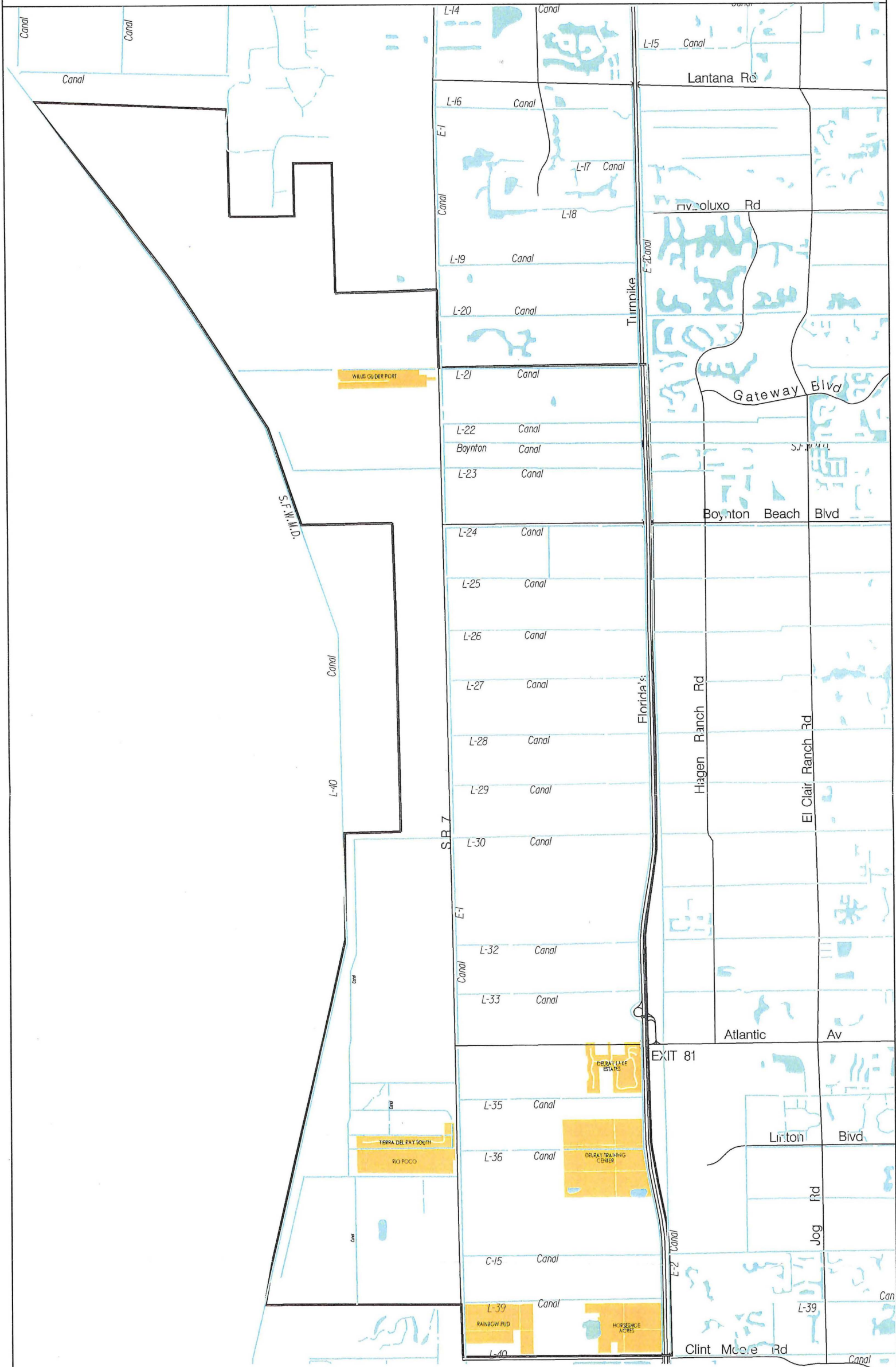
METHODOLOGIES FOR VALUING LAND

- A. Offer a variety of "fee simple" vs. easements, lease and purchase of development rights to make an attractive program. Utilize PACE and Bond funds as funding source.
- B. Purchase development rights - Under a Purchase of Development Rights Program local government purchases the development rights and then permanently retires them. The advantage to a PDR program is that the number of residential units is decreased.
- C..Farmland Protection Program - USDA joins state, local and tribal governments to acquire conservation easements or other interests from landowners. Participating landowners choose to keep their land in agriculture and agree not to convert the land to nonagricultural use. The State or local government entity must have an existing farmland protection program designed to purchase conservation easements or other interests. The land offered must be productive agricultural soil; be part of a pending offer from a government entity; be privately owned; be large enough to sustain agricultural production; be accessible to markets and have adequate agricultural support services; and have surrounding parcels that can support long-term agricultural production.

APPENDIX B

Suitability Maps

AG RESERVE - Map 2
Working Draft



DOVER, KOHL & PARTNERS
town planning



Planning, Zoning
& Building Department



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NOTE: MAP IS NOT OFFICIAL, FOR PRESENTATION PURPOSES ONLY

- Ag Reserve Boundary
- Existing & Committed Residential
Developments (labeled)
- Institutional



Scale: n.t.s.
Revision Date: 07/28/99
Filename: agresdev.dgn
Contact: s.kubber
Palm Beach County
Planning, Zoning and Building
Department
100 Australian Avenue
West Palm Beach, FL 33406

AG RESERVE - Map 3
Working Draft



DOVER, KOHL & PARTNERS
town planning



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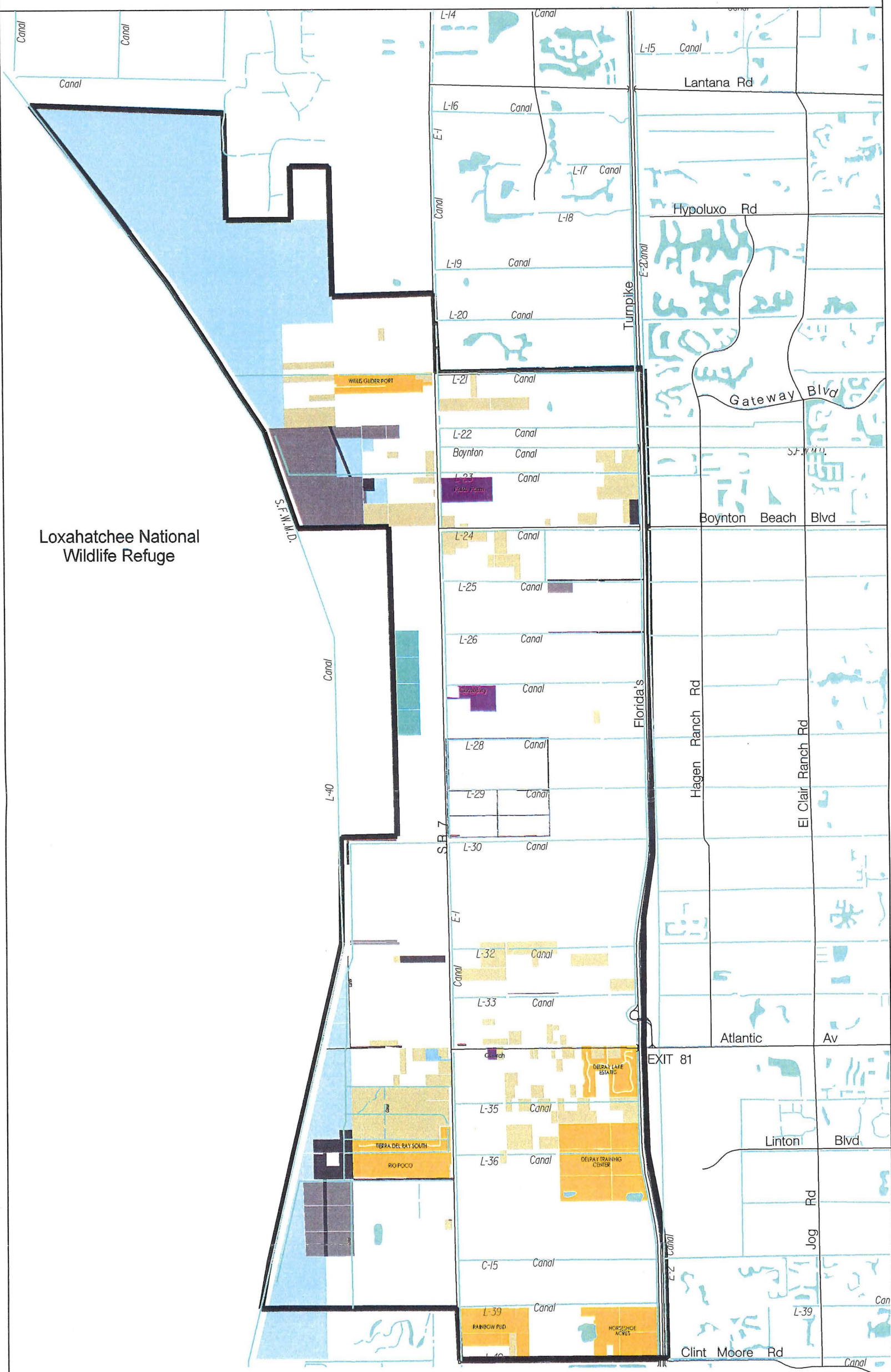
NOTE: MAP IS NOT OFFICIAL, FOR PRESENTATION PURPOSES ONLY

- Ag Reserve Boundary
- Existing & Committed Residential Developments (labeled)
- Institutional
- Private Properties less than 20 acres



Scale: n.t.s.
Revision Date: 10/ 12/ 99
Filename: agresprivprop.dgn
contact: s.kubber
Palm Beach County
Planning, Zoning and Building
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100 Australian Avenue
West Palm Beach, FL 33406

AG RESERVE - Map 4
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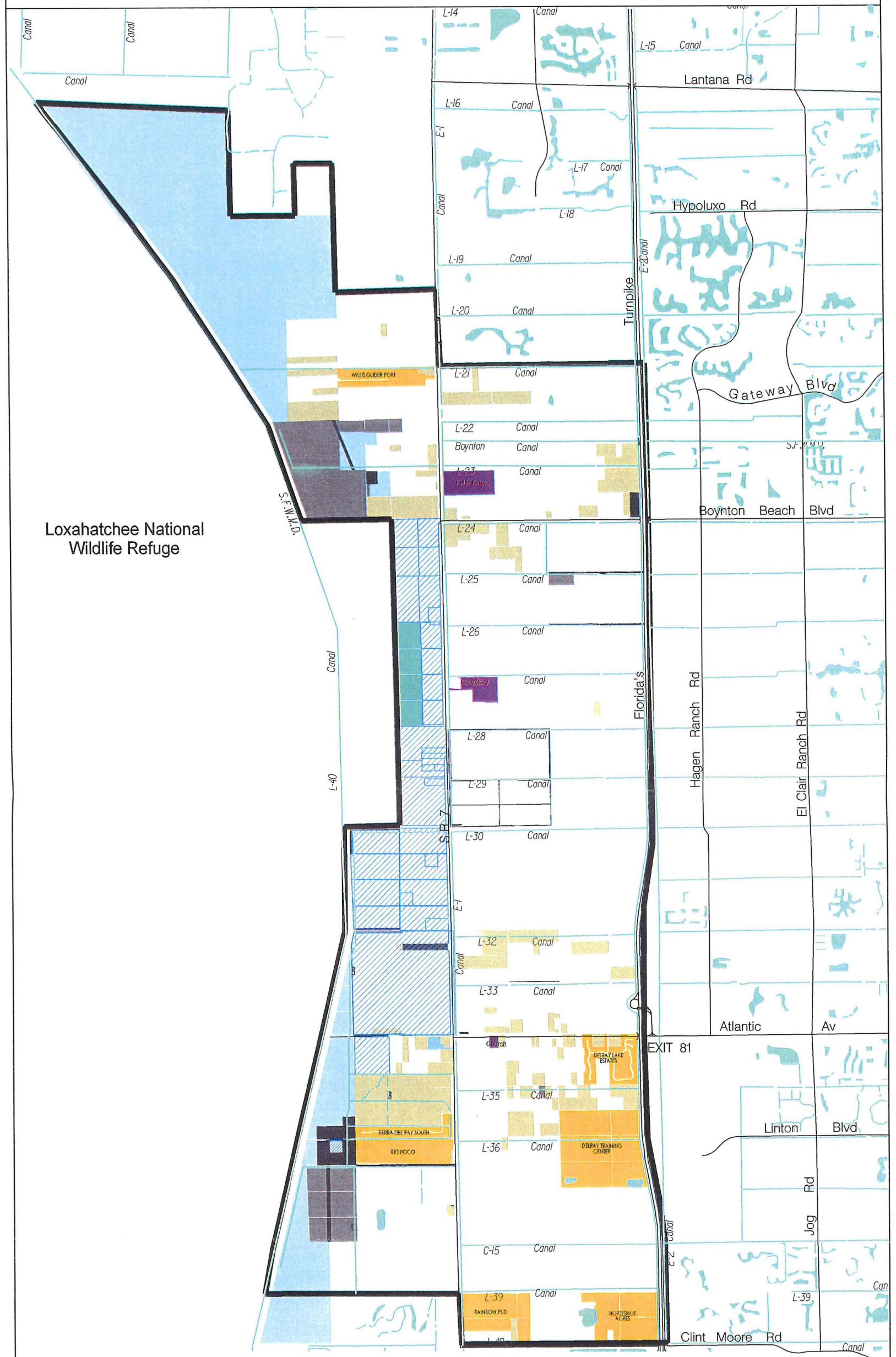
- | | | | |
|---|---|----------------------------------|---|
| Ag Reserve Boundary | — | Palm Beach County | ■ |
| Existing & Committed Residential Developments (labeled) | ■ | Federal Properties | ■ |
| Institutional | ■ | State Property (SFWMD) | ■ |
| Private Properties less than 20 acres | ■ | Utilities and Drainage Districts | ■ |



Scale: n.t.s.
Revision Date: 10/12/99
filename: agrespub.dgn
contact: s.kubber
Palm Beach County
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Department
100 Australian Avenue
West Palm Beach, FL 33406

AG RESERVE - map 5

Working Draft



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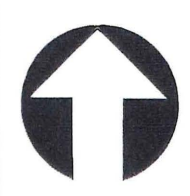


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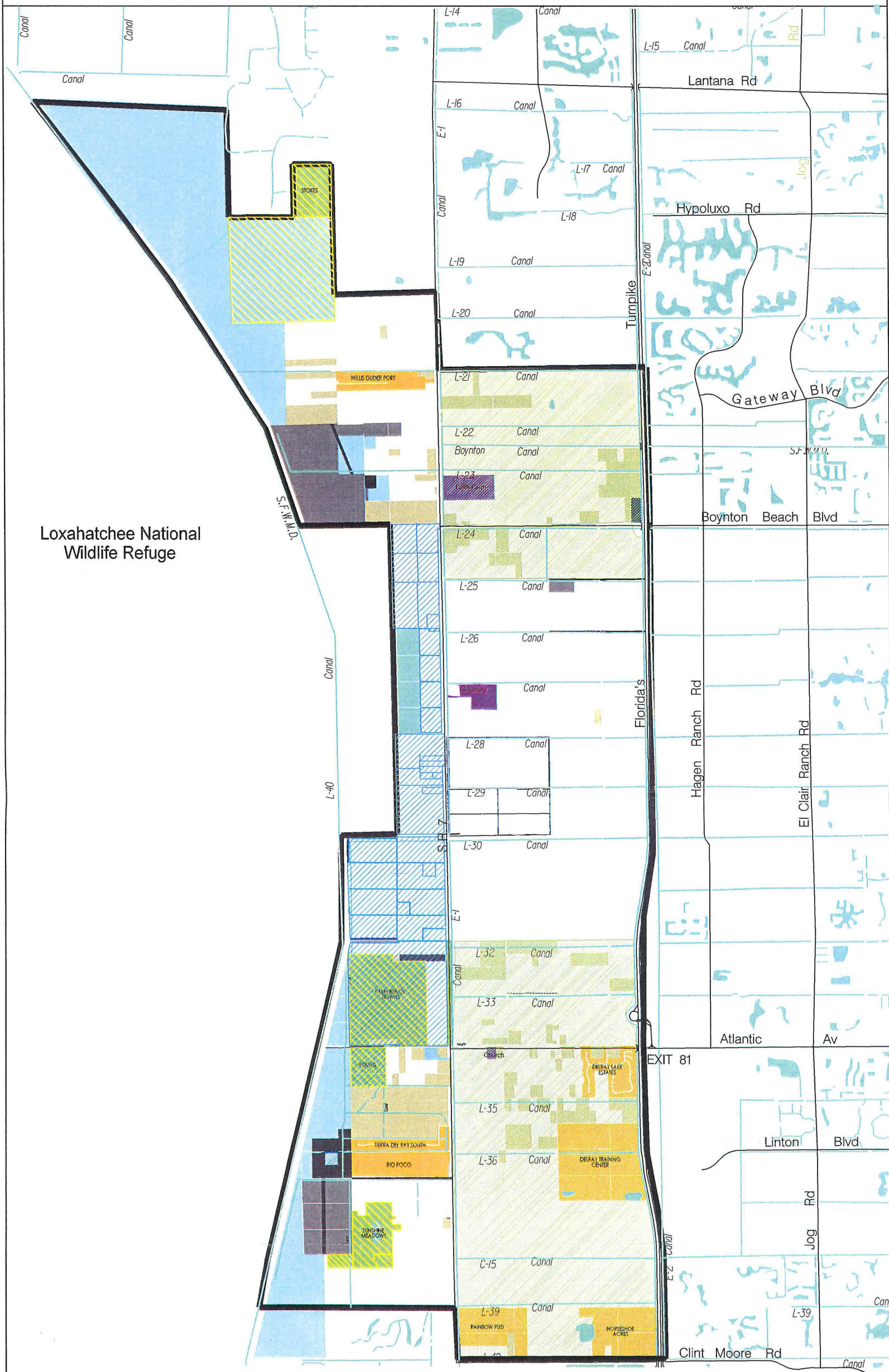
NOTE: MAP IS NOT OFFICIAL, FOR PRESENTATION PURPOSES ONLY

Ag Reserve Boundary		Palm Beach County		SFWMD Proposed WPA	
Existing & Committed Residential Developments (labeled)		Federal Properties			
Institutional		State Property (SFWMD)			
Private Properties less than 20 acres		Utilities and Drainage Districts			



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Revision Date: 10/ 12/ 99
filename: agresfvmd.dgn
contact: s.kubber
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AG RESERVE - Map 6
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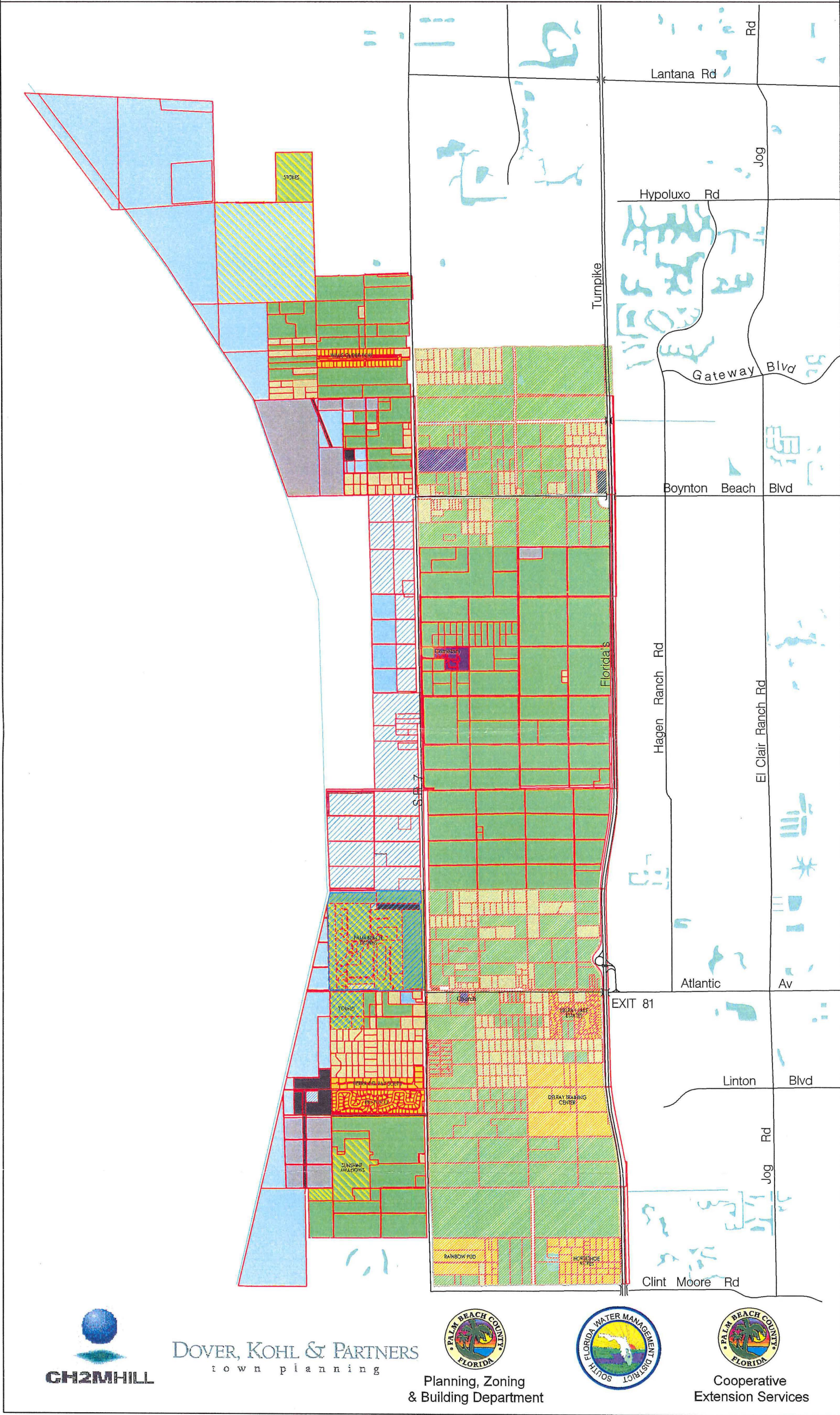
Ag Reserve Boundary	Palm Beach County	SFWMD Proposed WPA
Existing & Committed Residential Developments (labeled)	Federal Properties	Agricultural Preservation Easements
Institutional	State Property (SFWMD)	Development Potential Removed
Private Properties less than 20 acres	Utilities and Drainage Districts	Other areas not being considered for acquisition at this time



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Revision Date: 10/12/99
filename: agresdevrmv.dgn
contact: s.kubber
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SUITABILITY ANALYSIS FOR PROPERTIES
TO BE CONSIDERED FOR ACQUISITION
IN THE AG RESERVE

Working Draft



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NOTE: MAP IS NOT OFFICIAL, FOR PRESENTATION PURPOSES ONLY

Private Properties 20 acres or greater	Palm Beach County	SFWMD Proposed WPA
Developments	Federal Properties	Agricultural Preservation Easements
Institutional	State Property (SFWMD)	Development Potential Removed
Private Properties less than 20 acres	Utilities and Drainage Districts	Other areas not being considered for acquisition at this time



Scale: n.t.s.

Revision Date: 11/04/99

filename: agresp5.dgn

contact: s.kubler/krum
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100 Australian Avenue
West Palm Beach, FL 33406

APPENDIX C

Reports on Soils in the Ag Reserve



PALM BEACH COUNTY

AGRICULTURAL RESERVE / WESTERN SECTION

AGRICULTURAL REVIEW OF ACREAGE, CROPS, AND SOILS

PALM BEACH COUNTY
COOPERATIVE EXTENSION SERVICE
DECEMBER 1998

Executive Summary

In reviewing the agricultural production in the west side of the Ag Reserve, we have been able to roughly divide the area into eight (8) different zones by taking into consideration location (Sections) and acreage. As present in the following soil classification analysis, most of this acreage is represented by sand-type soils of different categories.

The 1974 Soil Survey of Palm Beach County indicates for several soil types that the are not appropriate for certain crops. That evaluation was based partly on the fact that certain crops had not been grown on these soils to that date. Since that time the soils, due to the need to have more land available for agricultural production, have been modified to make it possible to grow any crop presently grown in the county. That would also be true, in most cases, for crops that could be grown in the future. The following is a breakdown of the major soil types and their percentage in terms of total acreage for these eight zones:

<u>Soil Type</u>	<u>Estimated Percentage</u>
Boca Fine Sand	29 %
Myakka Sand	19 %
Oldsmar Sand	17 %
Riviera Fine Sand	15 %

Although low in natural fertility and susceptible to flooding without adequate water control system, most of this acreage has been under agricultural production for a considerable number of years. Modifications in water control and soil improvements have allowed an appreciable number of row crops to be produced in this area. The production capacity and profitability of this area has been determined by outside market forces rather than by the area's ability to produce an acceptable crop. Experience in farming these type of mineral soils has more than amended soil deficiencies and there is no reason to believe that agricultural production cannot be continued in the future.

The following is a rundown of the various crops grown in the area:

- | | |
|--|--|
| <input type="radio"/> Peppers | <input type="radio"/> Eggplant |
| <input type="radio"/> Squash | <input type="radio"/> Corn |
| <input type="radio"/> In-Ground Nurseries | <input type="radio"/> Citrus |
| <input type="radio"/> Tomatoes | <input type="radio"/> Cucumbers |
| <input type="radio"/> Herbs | <input type="radio"/> Specialty Chinese Vegetables |
| <input type="radio"/> Beets | <input type="radio"/> Beans |
| <input type="radio"/> Eggplant | <input type="radio"/> Squash |
| <input type="radio"/> Above Ground Nurseries | |

Based on these findings it is recommended that those parcels of property that have soils

Palm Beach County Agricultural Reserve
Western Side
Selected Soil Classifications and Descriptions

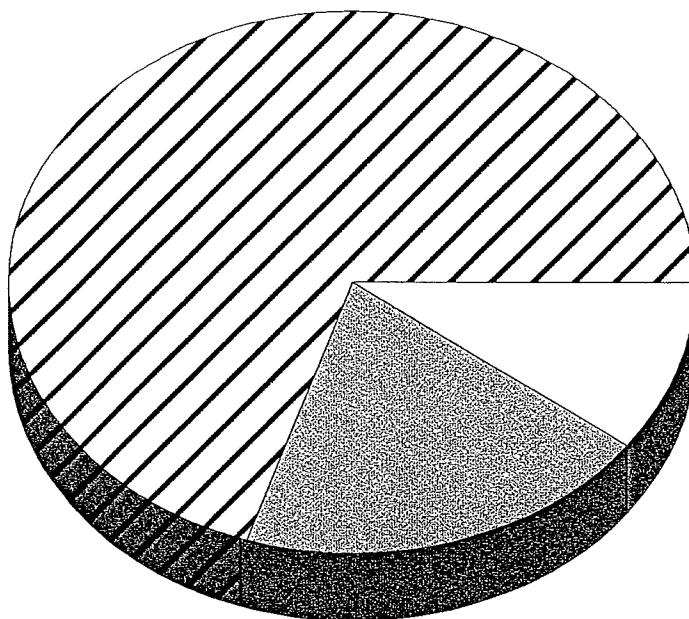





ZONE # 1: Township 45 S
Range 41 E
Section 14 (East Section)

Estimated Gross Acres: 320

<u>Soil Type</u>	<u>Est Percentage</u>
Boca Fine Sand	70 %
Riviera Sand	20 %
Tequesta Muck	10 %

Zone # 1 / Soil Classification



	Boca Fine Sand		Riviera Sand
	Tequesta Muck		

ZONE # 2 Township 45 S
Range 41 E
Section 13

Estimated Gross Acres: 640

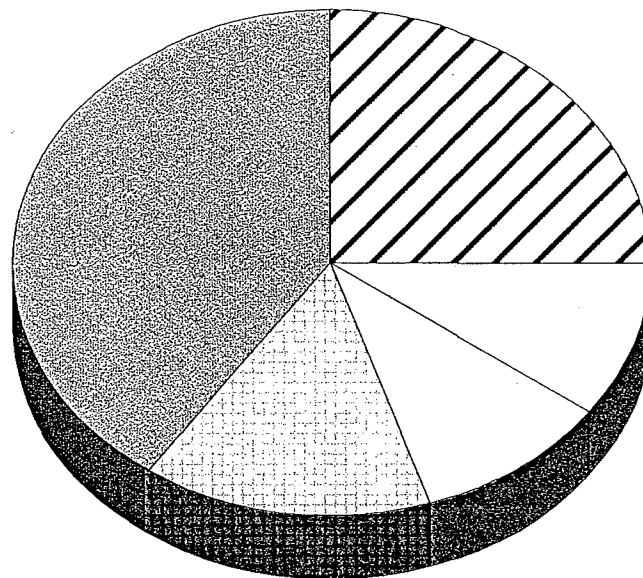
Township 45 S
Range 41 E
Section 12

Estimated Gross Acres: 160

Total Est. Zone Acres: 800

<u>Soil Type</u>	<u>Est Percentage</u>
Riviera Sand	40 %
Boca Fine Sand	25 %
Arents - Urban Land Complex	15 %
Riviera Sand	10 %
Tequesta Muck	10 %

Zone # 2 / Soil Classification



ZONE # 3: Township 45 S
Range 41 E
Section 24 (East Side)

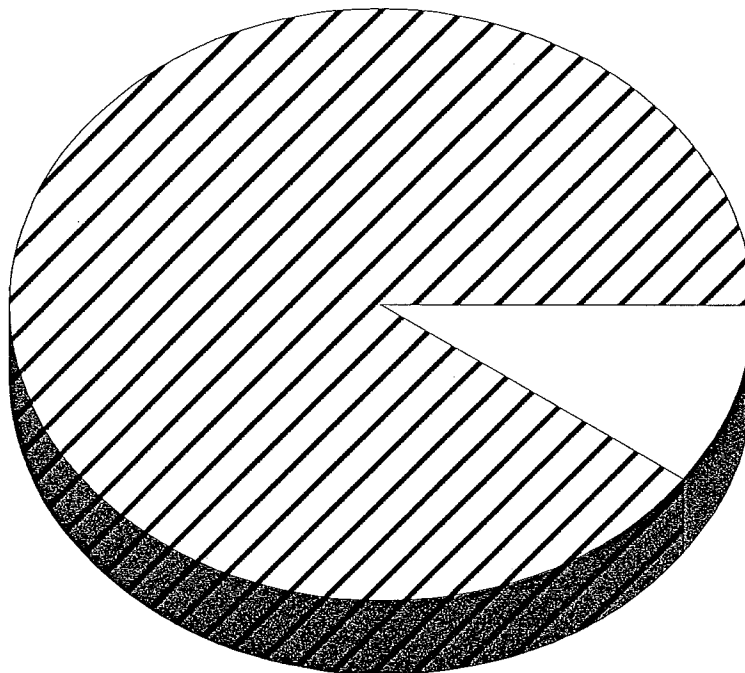
Estimated Gross Acres: 360

<u>Soil Type</u>	<u>Est Percentage</u>
------------------	-----------------------

Boca Fine Sand	90 %
----------------	------

Riviera Depression	10 %
--------------------	------

Zone # 3 / Soil Classification



Boca Fine Sand



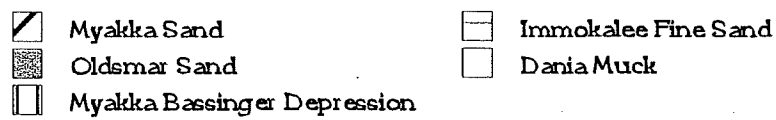
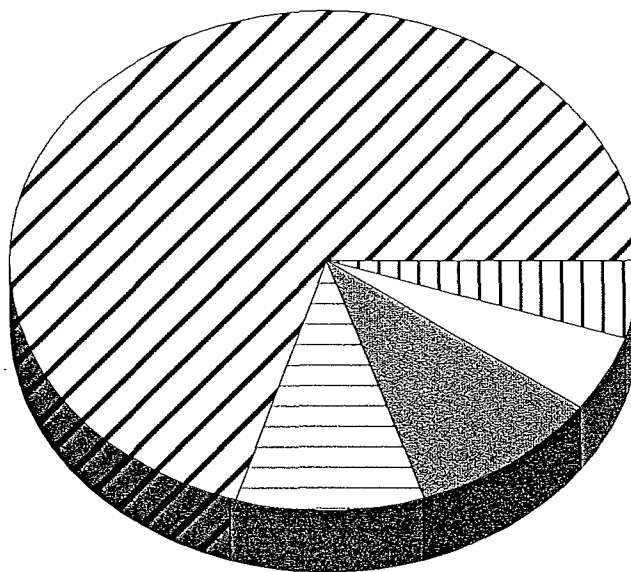
Riviera Depressions

ZONE # 4: Township 46 S
Range 41 E
Section 13 (East Side)

Estimated Gross Acres: 160

<u>Soil Type</u>	<u>Est Percentage</u>
Myakka Sand	70 %
Immokalee Fine Sand	10 %
Oldsmar Sand	10 %
Dania Muck	5 %
Myakka Bassinger Depression	5 %

Zone # 4 / Soil Classification

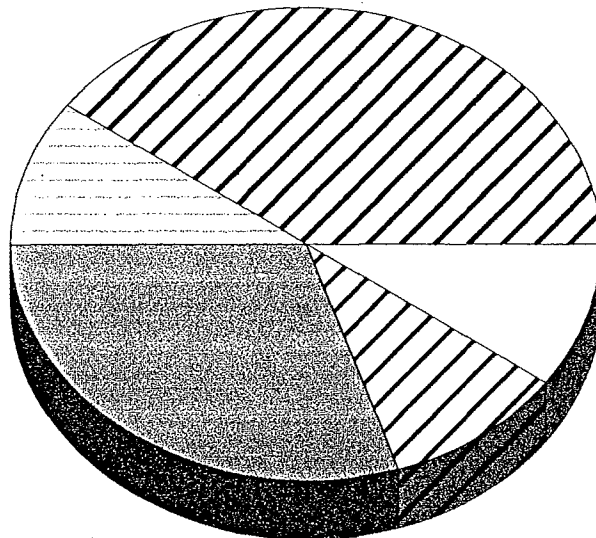


ZONE # 5: Township 46 S
Range 41 E
Section 24 (NE Section)

Estimated Gross Acres: 160

<u>Soil Type</u>	<u>Est Percentage</u>
Myakka Sand	40 %
Oldsmar Sand	30 %
Boca Fine Sand	10 %
Immokalee Sand	10 %
Rivera Sand Depression	10 %

Zone # 5 / Soil Classification



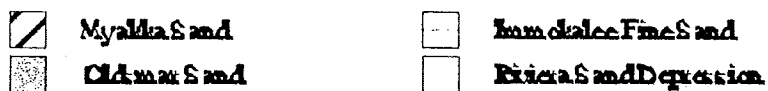
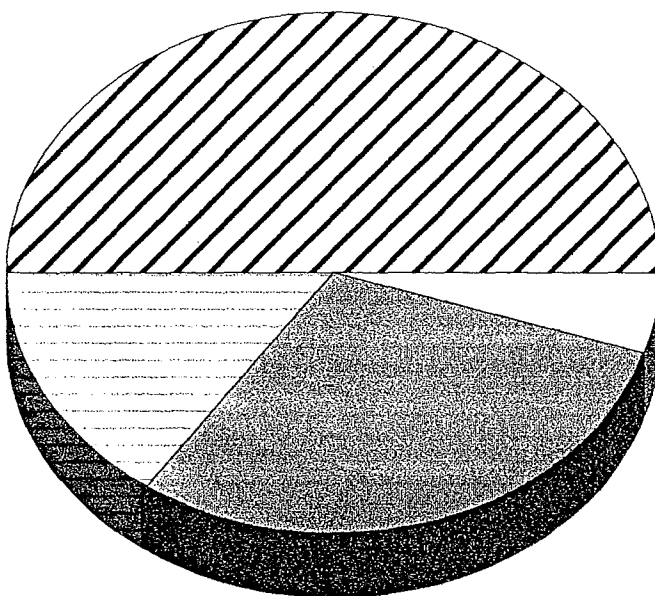
ZONE # 6: Township 46 S
Range 41 E
Section 25 (South Section)

Estimated Gross Acres: 480

<u>Soil Type</u>	<u>Est Percentage</u>
------------------	-----------------------

Myakka Sand	50 %
Oldsmar Sand	30 %
Immokalee Sand	15 %
Riviera Sand Depression	5 %

Zone # 6 / Soil Classification



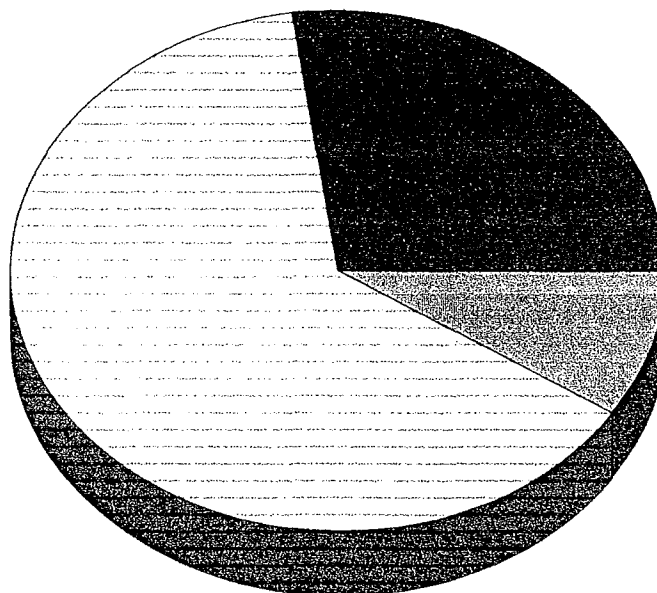
ZONE # 8: Township 46 S
Range 41 E
Section 35 (NE Corner)

Estimated Gross Acres: 100

<u>Soil Type</u>	<u>Est Percentage</u>
------------------	-----------------------

Oldsmar Sand	70 %
Hollowpaw Fine Sand	20 %
Riviera Sand Depressions	10 %

Zone # 8 / Soil Classification



Hollowpaw Fine Sand



Oldsmar Sand



Riviera Sand Depressions

SELECTED SANDY SOIL DESCRIPTIONS

Basinger Fine Sand *(Siliceous, hyperthermic Spodic Psammaquents)*

This is a nearly level, poorly drained, deep, sandy soil of broad grassy sloughs. The water table is within 10 inches of the surface for 2 to 6 months in most years and within 10 to 30" for the rest of the year.

Unless drained, Basinger fine sand is not suited to cultivated crops. A well designed, constructed, and maintained water control system that allows adequate field drainage and also provides for subsurface irrigation is a major management concern.

In a representative example, the surface layer is gray fine sand about 4 inches thick. The subsurface layer is composed of approximately 16 inches of white fine sand, followed by about 4 inches of dark grayish brown fine sand. The subsoil is dark reddish brown fine sand about 7 inches thick. A pale brown fine sand extends to a depth of 72 inches or more.

Permeability is rapid in all layers. The water holding capacity is very low. The organic matter content is very low throughout and natural fertility is low.

Boca Fine Sand *(Loamy, siliceous, hyperthermic Arenic Ochraqualfs)*

This is a nearly level, poorly drained soil that has a loamy subsoil and is underlain by fractured limestone at a depth of 24 to 40 inches. This soil is found in broad, low flat areas and in poorly defined drainageways between the Everglades and coastal ridge. Under natural conditions the water table is within 10 inches of the surface for 2 to 4 months and is below the underlying limestone during the dry periods.

Unless drained, Boca fine sand is not suited to cultivated crops. The root zone is limited by high water table and by limited depth to underlying limestone. If drained and well managed, this soil is well suited to some crops. The water control system should provide rapid removal of excess water during rainy periods. Because of the shallow depth to limestone, effective water control is difficult.

In a representative example, the surface layer is a very dark gray fine sand about 5 inches deep. The next layer is a light brownish gray fine sand about 7 inches deep. This is followed by approximately 17 inches of a light gray fine sand. The subsoil is dark grayish brown sandy clay loam about 5 inches thick with gray and brown mottles. At a depth of about 34 inches, a 2 inch layer of soft marl rests directly on limestone that contains numerous solution holes.

Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The water holding capacity is low or very low in the surface and subsurface layers and medium in the subsoil. The organic-matter content and natural fertility are low.

Hallandale Sand
(*Siliceous, hyperthermic Typic Psammaquents*)

This is a nearly level, poorly drained, sandy soil underlain by limestone at a depth of 7 to 20 inches. This soil is on broad, low flat areas between the Everglades and the coastal ridge. Under natural conditions, the water table is within 10 inches of the surface for 4 to 6 months during most years and within 10 to 30 inches the rest of the time, except during extremely dry periods. Water may cover the surface for 1 to 2 months.

Unless drained, Hallandale sand is not suited to cultivated crops. The root zone is limited by high water table and limited depth to underlying limestone. If drained, this soil is suitable for crop production. A well designed and constructed water control system helps maintain the water table at an acceptable level and provides subsurface irrigation when necessary. Limestone near the surface, however, makes construction of such a system difficult.

In a representative example, the surface layer is dark gray sand about 6 inches deep. The underlying material is very pale brown sand that rests on hard, fractured limestone boulders at an average depth of about 15 inches. The depth to the limestone is greater than 20 inches in solution holes and in fractures between boulders.

Permeability is rapid and the water holding capacity is low in the surface layer. Organic matter content and natural fertility are low.

Holopaw Fine Sand
(*Loamy, siliceous, hyperthermic Grossarenic Ochraqualfs*)

This is nearly level, poorly drained soil that has a thick sandy surface layer and a loamy subsoil at a depth of 40 to 72 inches. Under natural conditions, the water table is within 10 inches of the surface for 2 to 6 months during most years. Depressions are covered by water for 6 months or more in most years.

Unless drained, Holopaw fine sand is not suited to cultivated crops. If drained and properly managed, it is moderately well suited for crop production. A well designed and constructed water control system helps maintain the water table at an adequate level and provides subsurface irrigation, when necessary.

In a representative example, the surface layer is dark gray fine sand about 4 inches deep. The subsurface layer is about 38 inches thick with the upper 10 inches being light brownish gray fine sand; the next 10 inches is light gray fine sand that has a few yellow, brown, and gray mottles and the lower 18 inches being gray fine sand. The subsoil is grayish brown sandy loam about 7 inches thick. Below this, there is grayish brown sand to a depth of 60 inches or more.

Permeability is rapid in the surface and subsurface layers and moderately rapid in the subsoil. The water holding capacity is low to very low in the surface and subsurface layers and medium in the subsoil. Organic matter content and natural fertility are low.

Immokalee Fine Sand
(*Sandy, siliceous, hyperthermic, Arenic Haplaquods*)

This is a nearly level, poorly drained, deep, sandy soil that has a dark-colored layer below a depth of 30 inches that is weakly cemented with organic matter. Under natural conditions, the water table is within 10 inches of the surface for 2 to 4 months during wet periods, within 10 to 40 inches for 8 months or more in most years, but it is below 40 inches in dry periods.

Immokalee fine sand is moderately well suited to crop production if irrigation water is available. Intensive management and a very careful control of the water table level are necessary. A drainage system and a subsurface irrigation system that provides rapid removal of excess water in rainy periods and a means of irrigation in dry periods should be carefully designed and maintained.

In a representative example, the surface 4 inches is black fine sand. The next 7 inches is dark

gray fine sand. The subsurface layer is about 26 inches thick and in the upper 7 inches it is gray fine sand and in the lower 19 inches it is light gray fine sand. A layer of black and very dark gray fine sand is found at a depth of 37 to 45 inches. Below this is a black fine sand, weakly cemented with organic matter to a depth of about 58 inches. Loose dark reddish brown fine sand continues to a depth of 79 inches and below this is loose brown fine sand.

Permeability is rapid to a depth of 37 inches, moderate to about 79 inches, and rapid below that. The water holding capacity is medium in the weakly cemented layer and low in all other layers. Natural fertility is low.

Myakka Sand
(*Sandy, siliceous, hyperthermic Aeris Haplaquods*)

This is a nearly level, poorly drained, deep, sandy soil that has a dark colored layer, weakly cemented with organic matter, above a depth of 30 inches. Under natural conditions, the water table is within 10 inches of the surface for 2 to 4 months in most years. It is within a depth of 10 to 40 inches for 6 months or more in most years and recedes to below 40 inches during extended dry periods.

If irrigation water is available Myakka sand is moderately well suited to crop production. Very careful control of the water table is essential. A drainage subsurface irrigation system that removes excess water rapidly in rainy seasons and provides irrigation in dry seasons should be carefully designed and maintained.

In a representative example, the surface layer is black sand about 7 inches thick. The subsurface layer is gray sand and extends to a depth of about 26 inches. Black and dark reddish brown sand, weakly cemented with organic matter is found between a depth of 26 to 36 inches. Below this, dark reddish brown sand extends to a depth of 47 inches. Next is dark brown sand to a depth of 55 inches. Below this is a pale brown sand that extends to a depth of 72 inches or more.

Permeability is rapid to a depth of 26 inches, moderate to about 47 inches, and rapid below this depth. The water holding capacity is medium in the dark colored, weakly cemented surface layer and very low in all other layers. The organic matter content and natural fertility are low.

Oldsmar Sand
(*Sandy, Siliceous, hyperthermic Alfis Arenic Haplaquods*)

This is a nearly level, poorly drained, sandy soil that has a dark colored, weakly cemented layer below a depth of 30 inches and an underlying loamy layer. Under natural conditions, the water table is within 10 inches of the surface for 1 to 3 months during most years. It is within 10 to 40 inches for 6 or more months in most years and recedes to below 40 inches in extended dry periods.

Intensive management and careful control of the water table level are essential for crop production. A drainage subsurface irrigation system that rapidly removes excess water in rainy periods and provides irrigation water in dry periods should be carefully designed and maintained.

In a representative example, the surface layer is very dark gray sand about 8 inches thick. Next is a subsurface layer of sand that extend to a depth of about 34 inches. The first 5 inches is grayish brown, the next 13 inches is white, and the last 8 inches is grayish brown. The next layer is black sand weakly cemented by organic matter and about 8 inches thick. Below this is a layer of dark grayish brown sandy loam about 4 inches thick. Below the loam layer is a brown loamy sand that overlies layers of mixed sand, shell, and marl at a depth of about 50 inches.

Permeability is rapid in the sandy surface and subsurface layers, moderate in the weakly cemented sand and sandy loam layer, and rapid below this. The water holding capacity is very low to depth of about 34 inches, medium to a depth of about 46 inches, and low below that. Organic matter content and natural fertility are low.

Pineda Sand
(*Loamy, siliceous, hyperthermic Arenic Glossaqualfs*)

This is a nearly level, poorly drained, sandy soil overlying loamy soil material. It is found in broad, low flatwoods and grassy sloughs. Under natural conditions, the water table is within 10 inches of the surface for 1 to 6 months in most years and within 10 to 30 inches most of the remainder of the year. Water covers depressions for 1 to 3 months each year.

If a water control system is installed, this soil is well suited to a variety of crops. In addition to drainage and irrigation, growing cover crops in fallow periods helps maintain the organic matter content and tilth.

In a representative example, the surface layer is dark grayish brown sand about 3 inches thick. Below this is about 16 inches of yellowish brown and brownish yellow sand. The next layer is light gray sand about 15 inches thick. A grayish brown sandy loam that has vertical sandy tongues that extend from the layer above begins at a depth of about 34 inches. The underlying material is a mixture of light gray sand and shell fragments that extends below a

depth of about 44 inches.

Permeability is rapid in the sandy layers and moderately rapid in the loamy layer. The water holding capacity is very low in the sandy layers and medium in the loamy layer. Organic matter content is low, and natural fertility is low.

Riviera Sand
(*Loamy, siliceous, hyperthermic Arenic Glossaqualfs*)

This is a nearly level, poorly drained soil that has a thick sandy subsurface layer that tongues into a loamy subsoil at a depth of 20 to 40 inches. This soil is in broad, low areas. Under natural conditions, the water table is within 10 inches of the surface for 2 to 4 months in most years and within 10 to 30 inches for most of the remaining year, except during extreme dry periods.

If a water control system is installed, Riviera sand is well suited to crop production. In addition to drainage and irrigation, the growth of cover crops during fallow periods maintains organic matter content and improves tilth.

In a representative example, the surface layer is dark grayish brown sand about 6 inches thick. Below this is a subsurface layer of white sand that tongues into a loamy subsoil at a depth of 20 to 40 inches.

MUCK DESCRIPTIONS

Dania Muck
(*Euic, hyperthermic, shallow Lithic Medisaprists*)

This is a nearly level, very poorly drained, shallow, organic soil underlain by sand and limestone. This is a soil of broad marsh areas on the fringes of the Everglades. It formed in thin deposits of hydrophytic plant remains. Under natural conditions, the water table is within 10 inches of the surface for 6 to 12 months in most years, except during extended dry seasons. Water covers the surface in wet seasons.

Dania muck is not suited to cultivated crops or citrus because of wetness and shallowness to limestone.

In a representative example, the surface layer is black, well-decomposed muck about 4 inches thick. The next layer is dark reddish brown muck about 12 inches thick. Below this is a very thin sandy layer above the limestone.

Permeability is rapid in all layers. The water holding capacity is very high in the muck layers and very low or low in the thin sandy layer above the limestone. The natural fertility is moderate.

Tequesta Muck
(*Loamy, siliceous, hyperthermic Arenic Glossaqualfs*)

This is a nearly level, very poorly drained soil that has a thin organic layer on the surface overlying a mineral soil that has a sandy surface layer and a loamy subsoil. This is a soil of broad, low flats, marshes and depressions. Under natural conditions, this soil is covered by water for 4 to 6 months in most years. The water table is within 10 inches of the surface for 6 to 12 months during most years.

Unless drained, Tequesta muck is not suited to cultivated crops. If a water management system is installed, it is well suited for crop production. Simple water management systems remove excess water in wet periods and provide subsurface irrigation in dry periods.

Drainage is generally not feasible in isolated small areas that have no natural outlet. In some areas, dikes are needed to keep out water from adjacent areas.

In a representative example, there is a surface layer of black, well decomposed muck about 12 inches thick. Below this is a layer of dark gray fine sand about 13 inches thick followed by a layer of dark grayish brown fine sand about 19 inches thick. Below this is a fine sandy loam subsoil. This subsoil is grayish brown and about 28 inches thick with tongues of fine sand from the layer above. A substratum of mixed light gray sand and shell fragments is below a depth of about 60 inches.

Permeability is rapid in the organic layer, sandy surface layer, and substratum and is moderate in the loamy subsoil. The water holding capacity is very high in the organic layer, low in the sandy layer, and medium in the subsoil. Natural fertility is medium.

REFERENCE

Soil Survey of Palm Beach County Area, Florida (1974). USDA Soil Conservation Service in cooperation with University of Florida, Institute of Food and Agricultural Sciences.

Footnotes

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D. L. Anderson, professor, and R. S. Lentini, senior biological scientist, Everglades Research and Education Center, Belle Glade, Florida Agricultural Research Stations, Institute of Food and Agricultural Sciences, University of Florida.

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PALM BEACH COUNTY

AGRICULTURAL RESERVE / EASTERN SECTION

AGRICULTURAL REVIEW OF ACREAGE, CROPS, AND SOILS

PALM BEACH COUNTY
COOPERATIVE EXTENSION SERVICE

DECEMBER 1998

executive summary

As requested, this report will address a ten-section area within the Agricultural Reserve east of SR 441; just south of Boynton Beach Boulevard; just north of Atlantic Boulevard; and west of the Florida Turnpike. It will assess present acreage in agricultural production, different soils classifications, and specific crops presently being grown on this acreage.

The 1974 Soil Survey for Palm Beach County indicates that mineral sandy soil comprise most of this acreage. Based on the previous report presented on the western section of SR 441, this eastern section encompass considerable more crop diversifications and acreage in horticulture production. The following is a breakdown of the major soil types and their percentage in terms of total acreage for these eight zones:

<u>Soil Types</u>	<u>Est Percentage</u>
Myakka Sand	59 %
Oldsmar Sand	21 %

As in the eastern section, modifications in water control and soil improvements have allowed an appreciable number of row crops to be produced on this acreage. With approximately 1, 400 gross acres more than the eastern sections, this area agricultural production involves larger concurrent acreage and therefore more favorable for diversification of crops.

- | | |
|---|--|
| <input type="radio"/> Peppers | <input type="radio"/> Eggplant |
| <input type="radio"/> Squash | <input type="radio"/> Corn |
| <input type="radio"/> In-Ground Nurseries | <input type="radio"/> Citrus |
| <input type="radio"/> Tomatoes | <input type="radio"/> Cucumbers |
| <input type="radio"/> Herbs | <input type="radio"/> Specialty Chinese Vegetables |
| <input type="radio"/> Beets | <input type="radio"/> Beans |
| <input type="radio"/> Eggplant | <input type="radio"/> Squash |
| <input type="radio"/> Corn | <input type="radio"/> Above-Ground Nurseries |
| <input type="radio"/> Pasture | <input type="radio"/> Flowers |

Based on these findings it is recommended that those parcels of property that have soils made up of the two major soil types on the eastern side of State Road 7; Myakka Sand and Oldsmar Fine Sand, be considered first for purchase. Those property parcels with a large

Palm Beach County Agricultural Reserve
Eastern Side
Selected Soil Classifications and Descriptions



Agricultural Reserve / Eastern Section

Recap of Area / Acreage & Soil Classifications

ZONE	Location	Estimated Gross Acres	Estimated Acres in Ag	Est Percentage in Agriculture	Major Soils
1	Township 45 S Range 42 E Section 30	640	560	87.50%	Oldsmar Sand Boca Fine Sand
2	Township 45 S Range 42 E Section 31	640	580	90.63%	Myakka Sand
3	Township 46 S Range 42 E Section 6	640	640	100.00%	Myakka Sand Oldsmar Sand
4	Township 46 S Range 42 E Section 7	640	640	100.00%	Immokalee Fine Sand Oldsmar Sand Myakka Sand
5	Township 46 S Range 42 E Section 18	640	460	71.88%	Myakka Sand Oldsmar Sand
6	Township 45 S Range 42 E Section 29	590	530	89.83%	Myakka Sand Oldsmar Sand
7	Township 45 S Range 42 E Section 32	590	585	99.15%	Myakka Sand
8	Township 46 S Range 42 E Section 5	590	575	97.46%	Myakka Sand
9	Township 46 S Range 42 E Section 8	510	510	100.00%	Myakka Sand
10	Township 46 S Range 42 E Section 17	480	300	62.50%	Myakka Sand
TOTAL		5960	5380	90.27%	

Palm Beach County Agricultural Reserve
Eastern Side
Selected Soil Classifications and Descriptions



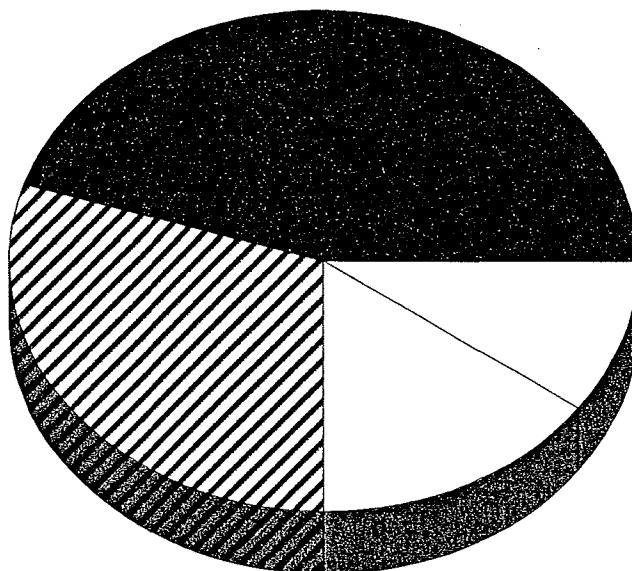
ZONE # 1: Township 45 S
Range 42 E
Section 30

Estimated Gross Acres: 320

Soil Type Est Percentage

Oldsmar Sand	40 %
Boca Fine Sand	30 %
Arentz - Urban Land Complex	15 %
Riviera Sand Depression	10 %

Zone # 1 / Soil Classification



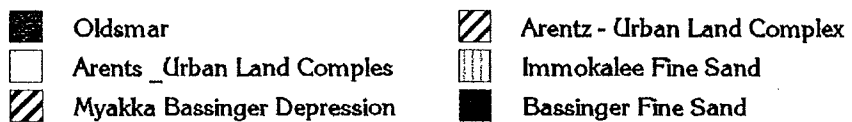
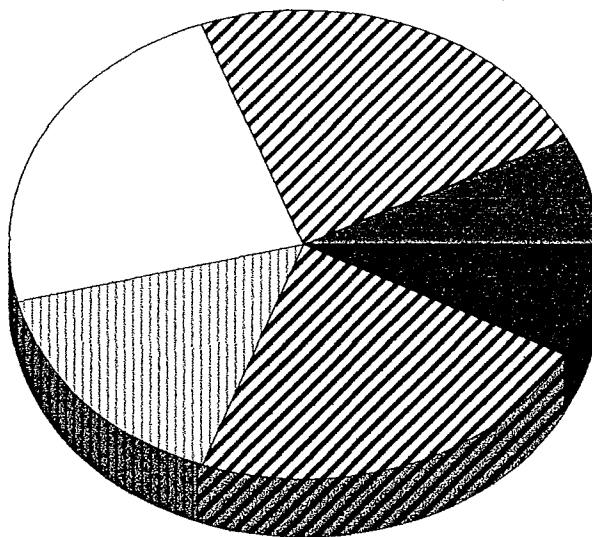
■ Oldsmar	▨ Boca Fine Sand
□ Arentz - Urban Land Complex	░ Riviera Sand Depression

ZONE # 2 Township 45 S
Range 42 E
Section 31

Estimated Gross Acres: 640

<u>Soil Type</u>	<u>Est Percentage</u>
Myakka Sand	50 %
Basinger-Myakka Sand Depression	15 %
Arents - Urban Land Complex	15 %
Immokalee Fine Sand	10 %
Basinger Fine Sand	5 %
Oldsmar Sand	5 %

Zone # 2 / Soil Classification

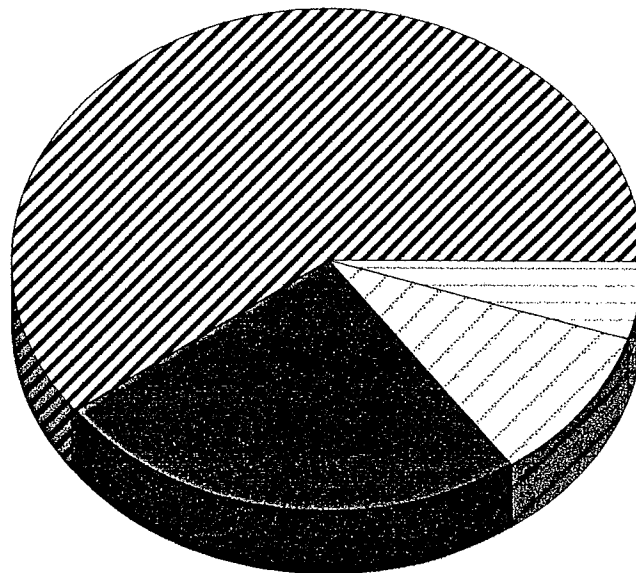






ZONE # 3: Township 46 S
Range 42 E
Section 6

Estimated Gross Acres: 640

<u>Soil Type</u>	<u>Est Percentage</u>
Myakka Sand	60 %
Oldsmar Sand	25 %
Basinger Find Sand	10 %
Immokalee Fine Sand	5 %

Zone # 3 / Soil Classification



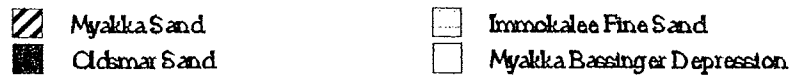
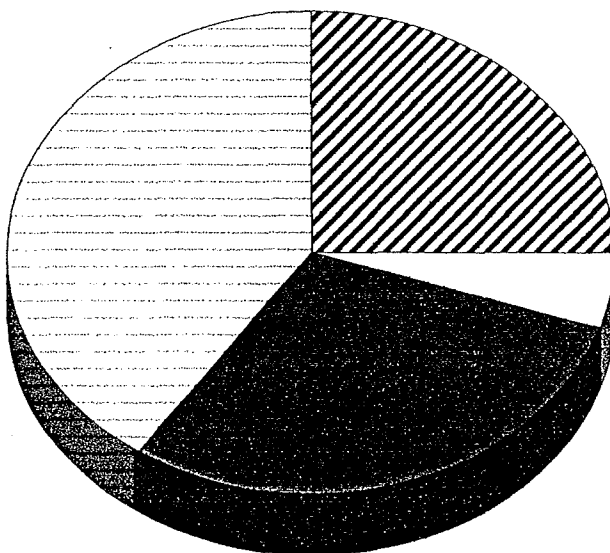
 Myakka Sand	 Oldsmar Sand
 Basinger Fine Sand	 Immokalee Fine Sand

ZONE # 4: Township 46 S
Range 42 E
Section 7

Estimated Gross Acres: 640

<u>Soil Type</u>	<u>Est Percentage</u>
Immokalee Fine Sand	40 %
Oldsmar Sand	30 %
Myakka Sand	25 %
Myakka Bassinger Depression	5 %

Zone # 4 / Soil Classification

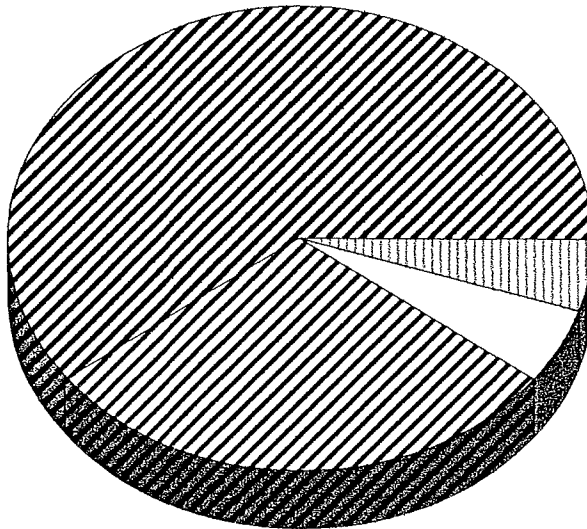


ZONE # 5: Township 46 S
Range 42 E
Section 18

Estimated Gross Acres: 640

<u>Soil Type</u>	<u>Est Percentage</u>
Myakka Sand	60 %
Oldsmar Sand	30 %
Boca Myakka Depression	5 %
Arents - Urban Land Complex	5 %

Zone # 5 / Soil Classification



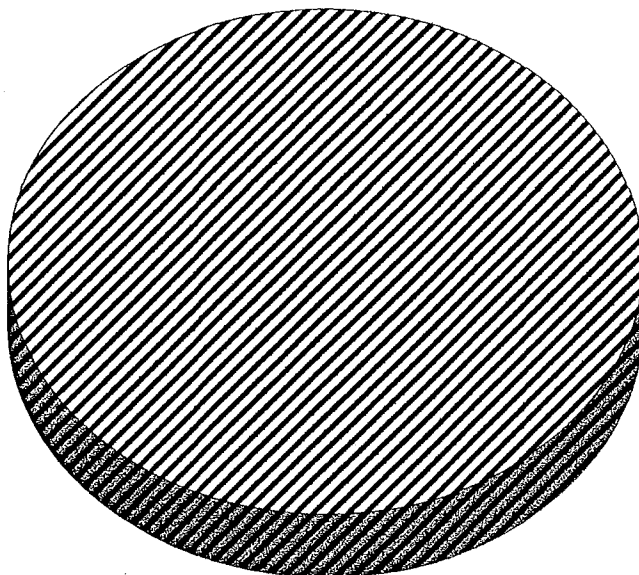
ZONE # 6: Township 45 S
Range 42 E
Section 32

Estimated Gross Acres: 590

<u>Soil Type</u>	<u>Est Percentage</u>
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Myakka Fine Sand	100 %
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Zone # 6 / Soil Classification



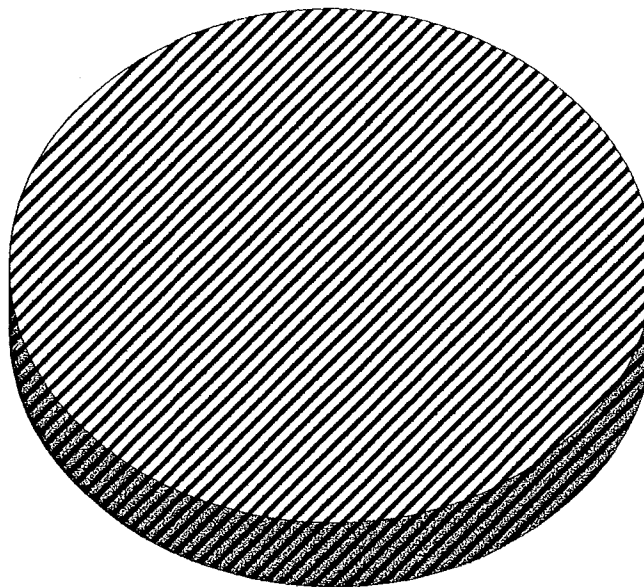
 Myakka Sand

ZONE # 7: Township 46 S
Range 42 E
Section 5

Estimated Gross Acres: 590

<u>Soil Type</u>	<u>Est Percentage</u>
Myakka Sand	100 %

Zone # 7 / Soil Classification



Myakka Sand

ZONE # 8: Township 46 S
Range 42 E
Section 8

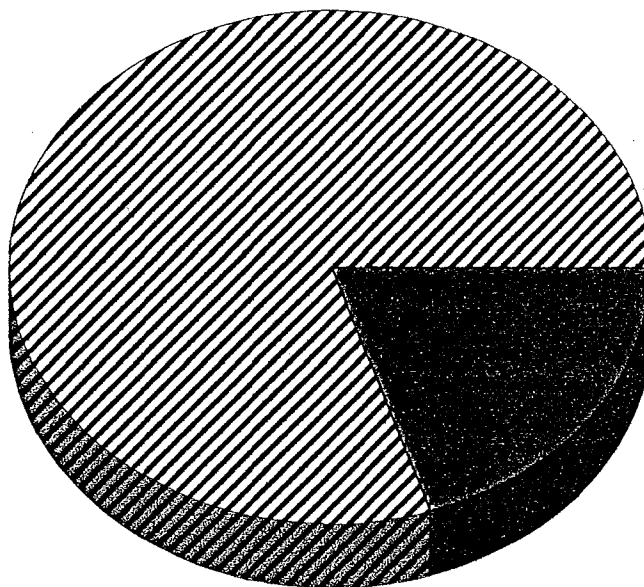
Estimated Gross Acres: 510

<u>Soil Type</u>	<u>Est Percentage</u>
------------------	-----------------------

Myakka Sand	80 %
-------------	------

Oldsmar Sand	20 %
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Zone # 8 / Soil Classification



Myakka Sand



Oldsmar Sand

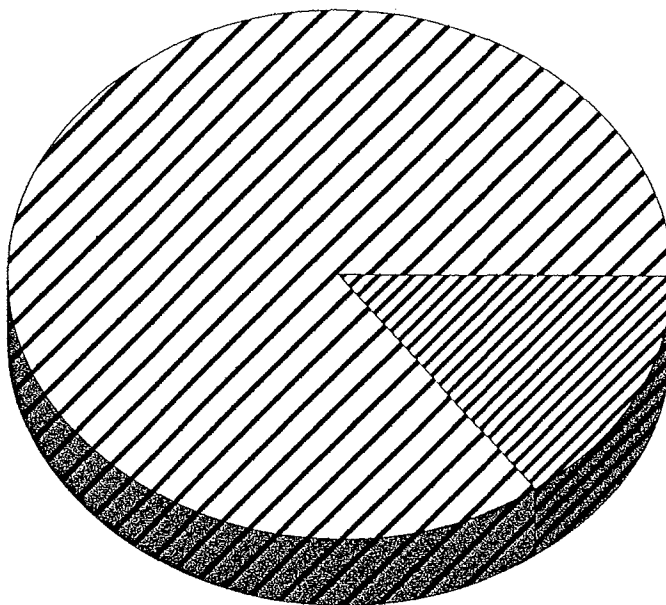
ZONE # 9: Township 46 S
Range 42 E
Section 8



Estimated Gross Acres: 480

<u>Soil Type</u>	<u>Est Percentage</u>
------------------	-----------------------

Myakka Sand	85 %
Oldsmar Sand	15 %

Zone # 9 / Soil Classification



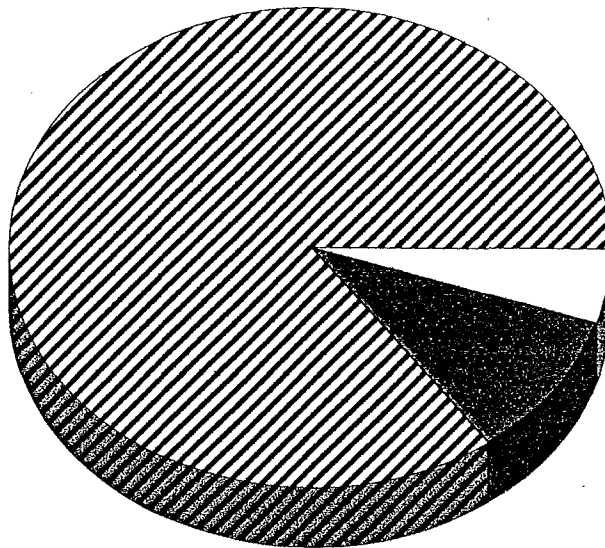
 Oldsmar	 Myakka Sand
---	---




ZONE # 10: Township 46 S
Range 42 E
Section 17

Estimated Gross Acres: 480

<u>Soil Type</u>	<u>Est Percentage</u>
Myakka Sand	85 %
Oldsmar Sand	10 %
Basinger Fine Sand	5 %

Zone # 10 / Soil Classification



 Myakka Sand	 Oldsmar Sand
 Basinger Fine Sand	

SELECTED SANDY SOIL DESCRIPTIONS

Basinger Fine Sand (Siliceous, hyperthermic Spodic Psammaquents)

This is a nearly level, poorly drained, deep, sandy soil of broad grassy sloughs. The water table is within 10 inches of the surface for 2 to 6 months in most years and within 10 to 30" for the rest of the year.

Unless drained, Basinger fine sand is not suited to cultivated crops. A well designed, constructed, and maintained water control system that allows adequate field drainage and also provides for subsurface irrigation is a major management concern.

In a representative example, the surface layer is gray fine sand about 4 inches thick. The subsurface layer is composed of approximately 16 inches of white fine sand, followed by about 4 inches of dark grayish brown fine sand. The subsoil is dark reddish brown fine sand about 7 inches thick. A pale brown fine sand extends to a depth of 72 inches or more.

Permeability is rapid in all layers. The water holding capacity is very low. The organic matter content is very low throughout and natural fertility is low.

Boca Fine Sand (Loamy, siliceous, hyperthermic Arenic Ochraqualfs)

This is a nearly level, poorly drained soil that has a loamy subsoil and is underlain by fractured limestone at a depth of 24 to 40 inches. This soil is found in broad, low flat areas and in poorly defined drainageways between the Everglades and coastal ridge. Under natural conditions the water table is within 10 inches of the surface for 2 to 4 months and is below the underlying limestone during the dry periods.

Unless drained, Boca fine sand is not suited to cultivated crops. The root zone is limited by high water table and by limited depth to underlying limestone. If drained and well managed, this soil is well suited to some crops. The water control system should provide rapid removal of excess water during rainy periods. Because of the shallow depth to limestone, effective water control is difficult.

In a representative example, the surface layer is a very dark gray fine sand about 5 inches deep.

The next layer is a light brownish gray fine sand about 7 inches deep. This is followed by approximately 17 inches of a light gray fine sand. The subsoil is dark grayish brown sandy clay loam about 5 inches thick with gray and brown mottles. At a depth of about 34 inches, a 2 inch layer of soft marl rests directly on limestone that contains numerous solution holes.

Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The water holding capacity is low or very low in the surface and subsurface layers and medium in the subsoil. The organic-matter content and natural fertility are low.

Hallandale Sand
(*Siliceous, hyperthermic Typic Psammaquents*)

This is a nearly level, poorly drained, sandy soil underlain by limestone at a depth of 7 to 20 inches. This soil is on broad, low flat areas between the Everglades and the coastal ridge. Under natural conditions, the water table is within 10 inches of the surface for 4 to 6 months during most years and within 10 to 30 inches the rest of the time, except during extremely dry periods. Water may cover the surface for 1 to 2 months.

Unless drained, Hallandale sand is not suited to cultivated crops. The root zone is limited by high water table and limited depth to underlying limestone. If drained, this soil is suitable for crop production. A well designed and constructed water control system helps maintain the water table at an acceptable level and provides subsurface irrigation when necessary. Limestone near the surface, however, makes construction of such a system difficult.

In a representative example, the surface layer is dark gray sand about 6 inches deep. The underlying material is very pale brown sand that rests on hard, fractured limestone boulders at an average depth of about 15 inches. The depth to the limestone is greater than 20 inches in solution holes and in fractures between boulders.

Permeability is rapid and the water holding capacity is low in the surface layer. Organic matter content and natural fertility are low.

Holopaw Fine Sand

Holopaw Fine Sand
(*Loamy, siliceous, hyperthermic Grossarenic Ochraqualfs*)

This is nearly level, poorly drained soil that has a thick sandy surface layer and a loamy subsoil at a depth of 40 to 72 inches. Under natural conditions, the water table is within 10 inches of the surface for 2 to 6 months during most years. Depressions are covered by water for 6 months or more in most years.

Unless drained, Holopaw fine sand is not suited to cultivated crops. If drained and properly managed, it is moderately well suited for crop production. A well designed and constructed water control system helps maintain the water table at an adequate level and provides subsurface irrigation, when necessary.

In a representative example, the surface layer is dark gray fine sand about 4 inches deep. The subsurface layer is about 38 inches thick with the upper 10 inches being light brownish gray fine sand; the next 10 inches is light gray fine sand that has a few yellow, brown, and gray mottles and the lower 18 inches being gray fine sand. The subsoil is grayish brown sandy loam about 7 inches thick. Below this, there is grayish brown sand to a depth of 60 inches or more.

Permeability is rapid in the surface and subsurface layers and moderately rapid in the subsoil. The water holding capacity is low to very low in the surface and subsurface layers and medium in the subsoil. Organic matter content and natural fertility are low.

Immokalee Fine Sand
(*Sandy, siliceous, hyperthermic, Arenic Haplaquods*)

This is a nearly level, poorly drained, deep, sandy soil that has a dark-colored layer below a depth of 30 inches that is weakly cemented with organic matter. Under natural conditions, the water table is within 10 inches of the surface for 2 to 4 months during wet periods, within 10 to 40 inches for 8 months or more in most years, but it is below 40 inches in dry periods.

Immokalee fine sand is moderately well suited to crop production if irrigation water is available. Intensive management and a very careful control of the water table level are necessary. A drainage system and a subsurface irrigation system that provides rapid removal of excess water in rainy periods and a means of irrigation in dry periods should be carefully designed and maintained.

In a representative example, the surface 4 inches is black fine sand. The next 7 inches is dark gray fine sand. The subsurface layer is about 26 inches thick and in the upper 7 inches it is gray fine sand and in the lower 19 inches it is light gray fine sand. A layer of black and very dark gray

fine sand is found at a depth of 37 to 45 inches. Below this is a black fine sand, weakly cemented with organic matter to a depth of about 58 inches. Loose dark reddish brown fine sand continues to a depth of 79 inches and below this is loose brown fine sand.

Permeability is rapid to a depth of 37 inches, moderate to about 79 inches, and rapid below that. The water holding capacity is medium in the weakly cemented layer and low in all other layers. Natural fertility is low.

Myakka Sand
(Sandy, siliceous, hyperthermic Aeric Haplaquods)

This is a nearly level, poorly drained, deep, sandy soil that has a dark colored layer, weakly cemented with organic matter, above a depth of 30 inches. Under natural conditions, the water table is within 10 inches of the surface for 2 to 4 months in most years. It is within a depth of 10 to 40 inches for 6 months or more in most years and recedes to below 40 inches during extended dry periods.

If irrigation water is available Myakka sand is moderately well suited to crop production. Very careful control of the water table is essential. A drainage subsurface irrigation system that removes excess water rapidly in rainy seasons and provides irrigation in dry seasons should be carefully designed and maintained.

In a representative example, the surface layer is black sand about 7 inches thick. The subsurface layer is gray sand and extends to a depth of about 26 inches. Black and dark reddish brown sand, weakly cemented with organic matter is found between a depth of 26 to 36 inches. Below this, dark reddish brown sand extends to a depth of 47 inches. Next is dark brown sand to a depth of 55 inches. Below this is a pale brown sand that extends to a depth of 72 inches or more.

Permeability is rapid to a depth of 26 inches, moderate to about 47 inches, and rapid below this depth. The water holding capacity is medium in the dark colored, weakly cemented surface layer and very low in all other layers. The organic matter content and natural fertility are low.

Oldsmar Sand
(Sandy, Siliceous, hyperthermic Alfic Arenic Haplaquods)

This is a nearly level, poorly drained, sandy soil that has a dark colored, weakly cemented layer below a depth of 30 inches and an underlying loamy layer. Under natural conditions, the water table is within 10 inches of the surface for 1 to 3 months during most years. It is within 10 to

40 inches for 6 or more months in most years and recedes to below 40 inches in extended dry periods.

Intensive management and careful control of the water table level are essential for crop production. A drainage subsurface irrigation system that rapidly removes excess water in rainy periods and provides irrigation water in dry periods should be carefully designed and maintained.

In a representative example, the surface layer is very dark gray sand about 8 inches thick. Next is a subsurface layer of sand that extend to a depth of about 34 inches. The first 5 inches is grayish brown, the next 13 inches is white, and the last 8 inches is grayish brown. The next layer is black sand weakly cemented by organic matter and about 8 inches thick. Below this is a layer of dark grayish brown sandy loam about 4 inches thick. Below the loam layer is a brown loamy sand that overlies layers of mixed sand, shell, and marl at a depth of about 50 inches.

Permeability is rapid in the sandy surface and subsurface layers, moderate in the weakly cemented sand and sandy loam layer, and rapid below this. The water holding capacity is very low to depth of about 34 inches, medium to a depth of about 46 inches, and low below that. Organic matter content and natural fertility are low.

MUCK DESCRIPTIONS

Dania Muck

(Euic, hyperthermic, shallow Lithic Medisaprists)

This is a nearly level, very poorly drained, shallow, organic soil underlain by sand and limestone. This is a soil of broad marsh areas on the fringes of the Everglades. It formed in thin deposits of hydrophytic plant remains. Under natural conditions, the water table is within 10 inches of the surface for 6 to 12 months in most years, except during extended dry seasons. Water covers the surface in wet seasons.

Dania muck is not suited to cultivated crops or citrus because of wetness and shallowness to limestone.

In a representative example, the surface layer is black, well-decomposed muck about 4 inches thick. The next layer is dark reddish brown muck about 12 inches thick. Below this is a very thin sandy layer above the limestone.

Permeability is rapid in all layers. The water holding capacity is very high in the muck layers and very low or low in the thin sandy layer above the limestone. The natural fertility is moderate.

Tequesta Muck
(*Loamy, siliceous, hyperthermic Arenic Glossaqualfs*)

This is a nearly level, very poorly drained soil that has a thin organic layer on the surface overlying a mineral soil that has a sandy surface layer and a loamy subsoil. This is a soil of broad, low flats, marshes and depressions. Under natural conditions, this soil is covered by water for 4 to 6 months in most years. The water table is within 10 inches of the surface for 6 to 12 months during most years.

Unless drained, Tequesta muck is not suited to cultivated crops. If a water management system is installed, it is well suited for crop production. Simple water management systems remove excess water in wet periods and provide subsurface irrigation in dry periods.

Drainage is generally not feasible in isolated small areas that have no natural outlet. In some areas, dikes are needed to keep out water from adjacent areas.

In a representative example, there is a surface layer of black, well decomposed muck about 12 inches thick. Below this is a layer of dark gray fine sand about 13 inches thick followed by a layer of dark grayish brown fine sand about 19 inches thick. Below this is a fine sandy loam subsoil. This subsoil is grayish brown and about 28 inches thick with tongues of fine sand from the layer above. A substratum of mixed light gray sand and shell fragments is below a depth of about 60 inches.

Permeability is rapid in the organic layer, sandy surface layer, and substratum and is moderate in the loamy subsoil. The water holding capacity is very high in the organic layer, low in the sandy layer, and medium in the subsoil. Natural fertility is medium.

REFERENCE

Soil Survey of Palm Beach County Area, Florida (1974). USDA Soil Conservation Service in cooperation with University of Florida, Institute of Food and Agricultural Sciences.

Footnotes

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D. L. Anderson, professor, and R. S. Lentini, senior biological scientist, Everglades Research and Education Center, Belle Glade, Florida Agricultural Research Stations, Institute of Food and Agricultural Sciences, University of Florida.

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US Fresh Vegetable Imports / 1994-98

Chart 1

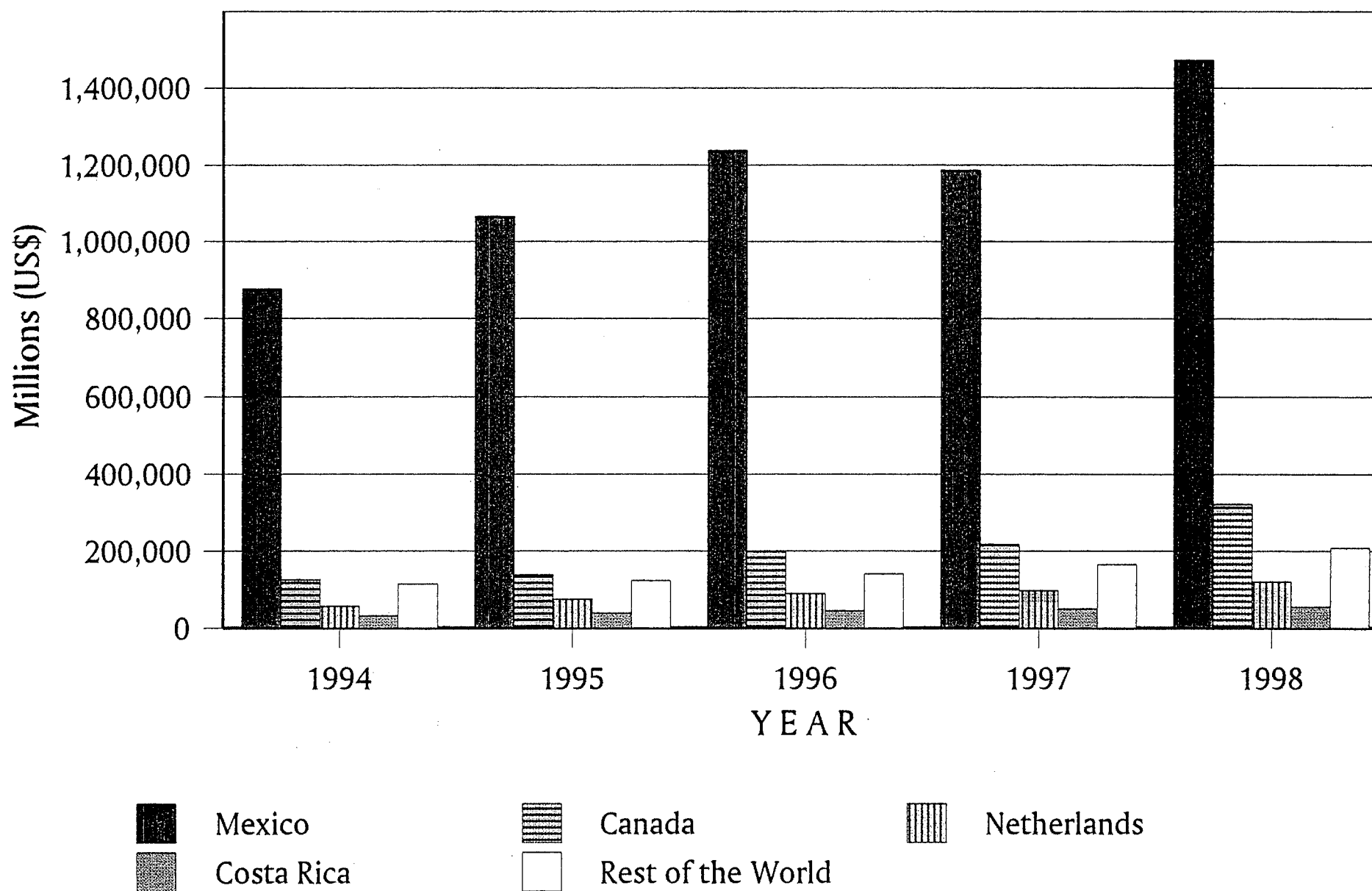


Chart 1

APPENDIX D

Service Provider Input



13081 MILITARY TRAIL
DELRAY BEACH, FLORIDA 33484

Board of Supervisors
C. Stanley Weaver
Kermit Dell
John I. Witworth III
Secretary/Manager
William G. Winters
Assistant Manager
Ronald L. Crone
Attorney
Perry & Schone, P.A.

November 24, 1999

Via Facsimile 954-698-6010

Mr. Tim Sharp
CH2MHILL
800 Fairway Drive
Suite 350
Deerfield Beach, Florida 33441

Re: Ag Reserve Master Plan Phase II

Dear Mr. Sharp:

Lake Worth Drainage District has been involved from the inception of the Ag Reserve issue. In fact, Lake Worth Drainage District hosted the first discussions on the Ag Reserve at its offices approximately five years ago.

Lake Worth Drainage District is committed to its taxpayers to provide the best flood protection and water supply it can offer.

This program can have a positive (and possibly negative) affect on our ability to provide our services. This is why Lake Worth Drainage District feels it should take a lead role on the shaping of the Ag Reserve Master Plan. It makes sense to use the experts that have been managing the waters in the Ag Reserve for over 85 years; Lake Worth Drainage District.

The Report itself states that Lake Worth Drainage District is the second most prominent and important feature of the Ag Reserve (Page 15).

Page 26 of the Report states that the South Florida Water Management District is offering to be the lead agency in the evaluation of the Plan. Lake Worth Drainage District strongly urges both Palm Beach County and South Florida Water Management District to allow Lake Worth Drainage District to be one of the leads in this project. Both, its staff and consultants offer historical and technical expertise in the Ag Reserve area.

Lake Worth Drainage District believes that it only makes good sense to have the agency that has managed the area to manage its future through the proper transition. Lake Worth Drainage District is eager to help mold and shape a Plan that will benefit both existing and future taxpayers.

LAKE WORTH DRAINAGE DISTRICT

Mr. Tim Sharp
CH2MHILL
November 24, 1999
Page No. 2

Please note that the Lake Worth Drainage District was asked to make comments in reference to the Report on November 23, 1999 with a deadline for comments of November 24, 1999. Unfortunately, these are only staff comments and it is the belief that the Board of Supervisors would like to have more input on the Report itself.

The following are staff's comments to the draft Ag Reserve Master Plan Phase II Report:

Comment #1: The maps reflect erroneous canal descriptions; for example, the C-15 Canal callout is not correct. The proper designation is the Lake Worth Drainage District L-38 Canal. Other canals do not appear to be displayed as they currently exist within the Ag Reserve area.

I would suggest contacting Patrick A. Martin, P.E., Director of Engineering, at Lake Worth Drainage District for clarification of the canal network.

Comment #2: Page 17, first sentence should read:

"These canals essentially serve two purposes – flood protection for the local residences and water supply for both the local farmers and the numerous major wellfields, both County and Municipalities.

Further down in the same paragraph, it is stated :

"...capture heavy rainfall inundation, and these levels also serve as a constant source of...", which should read:

"...capture heavy rainfall inundation, and these levels also serve as a constant source of recharge to the wellfields and curtail seepage from the neighboring Wildlife Refuge."

Comment #3: Page 26, paragraph 3, it is stated:

"...require evaluation to determine its viability, an investigation...", which should read:

LAKE WORTH DRAINAGE DISTRICT

Mr. Tim Sharp
CH2MHILL
November 24, 1999
Page No. 2

"...require evaluation to determine its viability, an investigation Lake Worth Drainage District offers to lead with South Florida Water Management District's modeling assistance."

Comment #4: Map is illegible.

Comment #5: Page 33

Lake Worth Drainage District takes issue with the comments contained herein. Lake Worth Drainage District is supportive in developing a comprehensive Ag Reserve Master Plan. The Lake Worth Drainage District has always been concerned that the Plan does not properly address or accommodate the drainage and water supply needs for the Ag Reserve for both existing and future uses. Lake Worth Drainage District offers to lead further investigation with the modeling assistance of South Florida Water Management District.

Comment #6: Page 49 - Change L-32 to L-30.

Lake Worth Drainage District does not have the Master Plan map; and therefore, is unable to comment in response to the contents of this paragraph.

Lake Worth Drainage District has only been provided with excerpts of the draft Plan; and therefore, is without benefit of the entire Plan for comment.

Sincerely,

LAKE WORTH DRAINAGE DISTRICT



Ronald L. Crone
ASSISTANT MANAGER

RLC:fac

c: Verdenia Baker, Assistant County Administrator for Palm Beach County, Via Facsimile



**Proposed Ag Reserve Residential Units,
Commercial and Industrial Space Numbers
for Potential Development Area Map**

14,000 total new residential units (or less, depending upon land acquisitions)
500,000 square feet in retail
600,000 square feet in offices (all)
330,000 square feet in industrial park

Area 1 (between canals L-21 and L-24, Turnpike and State Road 7)

1,680 Single Family Units
1,440 Townhouse/Small House
600 Apts/Townhouses
3,720 Total Units
125,000 Sq Ft Retail
93,757.5 Sq Ft Offices above Shops
112,485 Sq Ft Office Park

Area 2 (between canals L-24 (Boynton Beach Blvd.) and L-28, Turnpike and State Road 7)

1,840 Single Family Units
720 Townhouse/Small House
600 Apts/Townhouses
3,160 Total Units
125,000 Sq Ft Retail
93,757.5 Sq Ft Offices above Shops
112,485 Sq Ft Office Park
165,000 Sq Ft in Industrial Park

Area 3 (between canals L-28 (Boynton Beach Blvd.) and L-32, Turnpike and State Road 7)

-0- Single Family Units
-0- Townhouse/Small House
-0- Apts/Townhouses
-0- Total Units
-0- Sq Ft Retail
-0- Sq Ft Offices above Shops
-0- Sq Ft Office Park



Area 4 (between canals L-32 and L-36, Turnpike and State Road 7)

1,040 Single Family Units
1,680 Townhouse/Small House
1,320 Apts/Townhouses
4,040 Total Units
250,000 Sq Ft Retail
187,515 Sq Ft Offices above Shops
-0- Sq Ft Office Park
165,000 Sq Ft in Industrial Park

Area 5 (between canals L-36 and L-39, Turnpike and State Road 7)

2,080 Single Family Units
360 Townhouse/Small House
-0- Apts/Townhouses
2,440 Total Units
-0- Sq Ft Retail
-0- Sq Ft Offices above Shops
-0- Sq Ft Office Park

Area 6 (between canals L-39 and L-40 (Clint Moore Road), Turnpike and State Road 7)

640 Single Family Units
-0- Townhouse/Small House
-0- Apts/Townhouses
640 Total Units
-0- Sq Ft Retail
-0- Sq Ft Offices above Shops
-0- Sq Ft Office Park

For your convenience, a potential development area map has been attached showing the designated areas.

T:\PLANNING\AGRESERV\taz_92999.wpd

October 22, 1999

Tim Sharp
CH2M Hill, Inc.
800 Fiarway Drive, Suite 350
Deerfield Beach, Florida 33441

Dear Mr. Sharp:

Fire-Rescue has reviewed the Agricultural Reserve map dated January 5, 1999 as it relates to our existing and proposed facilities. It appears from this preliminary review that two additional fire stations will be required to service the Ag Reserve area, if developed similar to this proposal.

Keep in mind that the roadway network, traffic patterns, ingress and egress into residential developments, the use of calming devices, and the location and intensity of commercial hubs may affect our ability to respond to surrounding properties within adopted level of service standards.

We look forward to the work session scheduled for October 29th to discuss these issues and their impact on the delivery of fire-rescue services.

Sincerely,

Kathleen Owens



**Palm Beach County
Library System**

3650 Summit Boulevard
West Palm Beach, FL 33406-4198
(561) 233-2600
FAX: (561) 233-2622



**Palm Beach County
Board of County
Commissioners**

Maude Ford Lee, Chair
Warren H. Newell, Vice Chairman

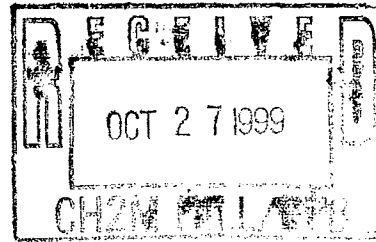
Karen T. Marcus
Carol A. Roberts
Mary McCarty
Burt Aaronson
Tony Masilotti

County Administrator

Robert Weisman

"An Equal Opportunity
Affirmative Action Employer"

October 25, 1999



Mr. Tim Sharp
CH2M Hill, Inc.
800 Fairway Drive - Suite 350
Deerfield Beach, FL 33441

Re: Palm Beach County Agricultural Reserve

Dear Mr. Sharp:

We have received the packet of information provided by the County's Planning staff and reviewed the data furnished by your office. As requested, we offer the following information regarding the impact of Ag Reserve development on Library levels of service.

The Library System completed phase I of its expansion program in the Spring of 1997. In the first phase of expansion, a total of twelve facilities were constructed or expanded throughout the Library Taxing District. Within a 10-mile radius of the Ag Reserve, those facilities include -

- Greenacres Branch - 17,000 sq. ft.
3750 Jog Road, Greenacres, FL
- West Boynton Branch - 8,000 sq. ft.
9451 Jog Road, Boynton Beach, FL
- West Atlantic Avenue Branch - 16,500 sq. ft.
7777 West Atlantic Avenue, Delray Beach, FL
- Southwest County Regional - 24,000 sq. ft.
20701 95th Avenue South, Boca Raton, FL

As many of our libraries are approaching capacity, planning for the next phase of expansion is currently underway. The first construction project will increase square footage at the West Boynton Branch from 8,000 to 17,770. In addition, we predict new branches will be needed in the general areas of -

- Hypoluxo Road and Lyons Road/SR 7
- Woolbright Road and SR 7
- Clint Moore Road and Lyons Road/SR 7

Siting and sizing criteria for library facilities will address the projected growth, not only within the Ag Reserve, but also those areas to the north, south, and east of the Ag Reserve. Additional services will be

Page Two

planned as the population increases and the characteristics of that population growth reveal the appropriate location for placement of library facilities. As development occurs, however, we would welcome the opportunity to evaluate any sites designated as public use for potential library locations.

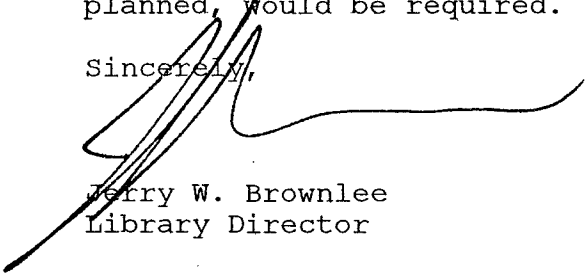
Steve Morales, Senior Planner with Palm Beach County, advises that the existing population estimate for the total Ag Reserve area for the year 2015 is approximately 25,000. Further, that the Planning staff has projected, as a result of the 14,000 proposed Ag Reserve residential units, an estimated 25,000-27,000 population.

Assuming that the Ag Reserve will remain in unincorporated Palm Beach County and therefore in the Library Taxing District, residents will have access to the following services of our Library System:

- Main Library, 2 Regional Libraries, and 14 Neighborhood Branches.
- Bookmobile Service for those in nursing homes, housing projects, and communities which are distant from a branch library.
- Books-by-Mail Service for those who are homebound, disabled, or lack transportation to the bookmobile or to a branch library.
- Telephone reference service, available six days a week at all library locations.
- Electronic access to the Library's catalog, newspapers and magazines. Also, SEFLIN Free-Net and the Internet are available 24 hours a day to all residents with home or office computers and a modem.

In conclusion, it would appear at this time that the anticipated development of the Ag Reserve, in itself, will not impact Library levels of service to the point that additional facilities, other than those already planned, would be required.

Sincerely,



Jerry W. Brownlee
Library Director

cc: Jean Creamer, Asst. County Administrator



**METROPOLITAN PLANNING ORGANIZATION
OF
PALM BEACH COUNTY**

160 Australian Avenue, Suite 201, West Palm Beach, Florida 33406 Tel. (561) 684-4170

Memorandum

DATE: October 21, 1999

TO: Ms. Linda Hoppes
PBC Planning Department

FROM: Paul Larsen
Metropolitan Planning Organization of PBC

RE: Agricultural Reserve Area Transportation Model Test

Please find attached the general information regarding the results of the model tests performed testing the land use scenario provided on the 2020 Long Range Plan transportation network. If I have left anything unanswered or if there are any questions/discussion required prior to submittal to your consultant, please contact me and arrange a meeting.

Post-It® Fax Note 7671		Date 10/25	# of pages 7
To TIM STARP	From Linda Hoppes		
Cn./Dupl.	Cu.		
Phone #	Phone #		
Fax #	Fax #		

Post-It® Fax Note 7671		Date 10/25	# of pages 7
To	Tim Sharp	From	Linda Hoppe
Co./Dept.		Co.	
Phone #	Re-Send	Phone #	
Fax #		Fax #	

**AGRICULTURAL RESERVE AREA
TRANSPORTATION NETWORK REVIEW
OCTOBER, 1999**

At the request of the Palm Beach County Planning Department, the MPO performed tests of the proposed land use on most recently adopted long range transportation model for the review of impact on the proposed network.

The Planning Department provided the MPO with the socio-economic information to satisfy the needed model file input. The dwelling unit information was provided in single and multi-family categories. Each was factored by respective 1990 single family and multi-family persons per household factors to develop population estimates. The factors were derived from a review of the county's overall occupied single and multi-family 1990 inventory. There was no seasonal vacancy applied to the dwelling unit inventory for this test.

The employment estimates were developed from the gross floor area estimates provided using the following factors.

Category	Factor
Industrial	0.05emp/1,000sqft
commercial	2.50emp/1,000sqft
service	3.50emp/1,000sqft

See Table 1 for population and Table 2 for employment input data. Table 3 depicts the production side data input variables as required by the lifestyle model.

The adopted 2020 long range plan was used as the base network. The network was modified slightly by adding or relocating traffic zone centroid connectors in the area of interest to the highway network where the traffic zone is bounded on multiple sides by highway facilities. This was accomplished prior to the base network test.

Following the base network test the recommended socio-economic data was used to replace the 2020 LPR information for the TAZ's specified in the tables. TAZ's not listed in the attached tables but lying in the agricultural reserve area were adjusted to reflect 1996 base year information as a do-nothing scenario for these TAZ's.

The tests included the following.

- 1 - 2020 base as is
- 2 - with AG Reserve at 1996 base as a do nothing
- 3 - with AG Reserve SE data
- 4 - without Flavor Pict Rd
- 5 - without Linton Blvd
- 6 - without Flavor Pict Rd and Linton Blvd

SUMMARY

The results indicate that the proposed AG Reserve scenarios do not have a significant impact on the 2020 long range plan highway demands (Table 4). The tests without Flavor Pict Rd have little impact on the east-west arterials. This is principally due to the fact that as the development scenarios that were represent 4 square miles of land surrounding what would be the Flavor Pict extension west of the turnpike to SR-7 that have little to no associated travel demand.

The only facilities experiencing level of service problems are Boynton Beach Blvd east and west of the turnpike interchange and SR-7 north of Clint Moore Rd to Atlantic Ave. The SR-7 segment was already at capacity in the 2020 LRP and the model tests with the AG data did not exacerbate this condition. The Boynton Beach segment was at or just below capacity at 1.0 in the 2020 LRP and all AG tests pushed this over 1.0. Keep in mind that the model depicts peak season traffic conditions.

The Flavor Pict extension west of Hagan and the portion of Lyons Road between Atlantic Ave and Boynton Beach Blvd should also be considered in terms of access management or general public access for recreation purposes. Considering that any development in this particular area is contingent the relocation of development away, the corridors as depicted on the current thoroughfare map should be preserved.

TABLE 1					
AGRICULTURAL RESERVE AREA REVIEW - SEPT. 1999 (MPO of PBC)					
DWELLING UNITS AND POPULATION ESTIMATES					
TAZ	SF UNITS	TWNHS	APTS	TOTAL UNITS	POPULATION
746	120	840	300	1,260	2,466
748	80	600	300	980	1,924
748	80	360	300	740	1,468
749	580	360	300	1,220	2,749
750	960	0	0	960	2,563
751	240	0	0	240	641
753	VACANT COUNTY TO BUY			0	0
764	VACANT COUNTY TO BUY			0	0
768	VACANT COUNTY TO BUY			0	0
768	VACANT COUNTY TO BUY			0	0
768	180	360	200	720	1,491
769	360	240	300	900	1,987
760	320	480	420	1,220	2,664
761	200	600	400	1,200	2,434
782	1,000	0	0	1,000	2,670
783	200	0	0	200	634
785	520	180	0	700	1,730
788	360	180	0	540	1,303
787	EXISTING UNITS			0	0
880	640	0	0	640	1,709
1028	720	0	0	720	1,922
1030	760	0	0	760	2,029
Total	7,280	4,200	2,520	14,000	32,206
PPH - Derived from 1990 census files - 2.669 for single family units and 1.904 for multi family excluding MHP.					

TABLE 2							
AGRICULTURAL RESERVE AREA REVIEW - SEPT. 1999 (MPO of PBC)							
EMPLOYMENT ESTIMATES							
TAZ	SQFT			EMPLOYMENT			
	INDUSTR	RETAIL	OFFICE	INDUS.	COMM	OFFICE	TOTAL
745				@0.5/sqft	@2.5/sqft	@3.5/sqft	
746	0	62,500	159,364	0	156	558	714
748	0	62,500	48,879	0	156	164	320
749	0	62,500	48,879	0	156	164	320
760	165,000	62,500	159,364	83	156	558	797
761	0	0	0	0	0	0	0
753	0	0	0	0	0	0	0
754				0	0	0	0
755				0	0	0	0
756				0	0	0	0
768				0	0	0	0
769	0	62,500	48,879	0	156	164	320
780	165,000	62,500	48,879	83	156	164	403
781	0	62,500	48,879	0	156	164	320
782	0	62,500	48,879	0	156	164	320
783	0	0	0	0	0	0	0
788	0	0	0	0	0	0	0
766	0	0	0	0	0	0	0
767	0	0	0	0	0	0	0
880	0	0	0	0	0	0	0
1028	0	0	0	0	0	0	0
1030	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
TOTALS	330,000	600,000	600,002	185	1,260	2,100	3,515

			TABLE 3				

AGRICULTURAL RESERVE AREA REVIEW - SEPT. 1989 (MPO of PBC)

LIFESTYLE MODEL INPUT VALUES - ZDATA1A			
--	--	--	--

TAZ	H_HH0C	H_HH1C	V_HH0C	V_HH1C	W_HH0C	W_HH1C	P_HH0C	P_HH1C
745	597	663	900	989	808	773	830	1657
748	485	516	897	750	489	588	642	1282
748	351	389	532	572	358	456	490	978
749	579	641	998	1072	871	885	917	1832
780	455	505	928	989	626	797	856	1708
751	114	126	232	250	168	199	214	427
763	0	0	0	0	0	0	0	0
784	0	0	0	0	0	0	0	0
785	0	0	0	0	0	0	0	0
758	0	0	0	0	0	0	0	0
788	341	379	640	581	384	464	498	994
759	427	473	720	775	485	618	683	1324
760	579	641	929	1000	826	797	856	1709
761	569	631	882	949	594	757	812	1622
762	474	628	987	1041	651	830	891	1779
763	95	106	199	208	130	166	178	368
765	332	368	627	675	422	638	577	1183
788	256	284	472	508	318	406	435	868
767	0	0	0	0	0	0	0	0
880	303	337	619	688	417	531	570	1139
1028	341	379	698	749	489	598	642	1281
1030	380	400	736	791	485	631	677	1352
Totale	6,839	7,361	11,664	12,588	7,866	10,013	10,747	21,459
		14,000		24,219		17,868		32,206

H HHOC - households without children present

H_HH1C - households with children present

V_HHOC - vehicles in households without children present

V HH1C - vehicles in households with children present

W_HH0C - workers in households without children present

W HH1C - workers in households with children present

P_HHOC - population in households without children present

P_HH1C - population in households with children present

TABLE 4								
AGRICULTURAL RESERVE AREA REVIEW - SEPT. 1993 (MPO of PBC)								
MODEL TEST RESULTS (1,000'S)								
	2020		2020 W			WO		WO
	LANES		BASE	BASE	LOAD	FLAVOR	WO	FLAVOR
			BASE	BASE	LOAD	PICT	LINTON	LINTON
BR-7	6	S OF LANTANA RD	42	45	44	44	41	42
	6	S OF HYPOLUXO RD	38	38	46	46	39	46
	6	S OF BOYNTON BEACH BLVD	48	45	44	43	44	43
	6	S OF FLAVOR PICT RD	48	45	44	43	44	43
	6	S OF ATLANTIC AVE	60	61	48	60	61	61
	6	N OF CLINT MOORE RD	66	66	64	66	64	66
LYONS RD	4	S OF LANTANA RD	18	18	18	18	18	18
	4	S OF HYPOLUXO RD	26	24	27	26	26	26
	2	S OF BOYNTON BEACH BLVD	7	7	7	8	8	8
	2	S OF FLAVOR PICT RD	8	7	3	6	4	6
	2	S OF ATLANTIC AVE	10	9	8	9	9	9
	2	N OF CLINT MOORE RD	14	10	13	13	13	13
FLORIDA TURNPIKE	6	N OF HYPOLUXO	104	103	105	101	103	104
	6	N OF BOYNTON BEACH BLVD	87	86	100	88	85	88
	6	N OF ATLANTIC AVE	81	80	84	82	82	83
	6	S OF ATLANTIC AVE	88	80	88	88	86	89
LANTANA RD	4	E OF BR-7	23	21	24	26	24	26
	4	E OF LYONS	31	28	34	32	34	33
HYPOLUXO RD	4	E OF BR-7	8	13	14	11	10	12
	4	E OF LYONS	21	18	27	26	26	26
	4	E OF TPK	28	26	32	31	33	34
BOYNTON BEACH BLVD	4	E OF BR-7	24	16	22	23	22	23
	4	E OF LYONS	30	31	34	38	34	36
	4	W OF TPK	42	32	45	48	45	47
	4	E OF TPK	49	43	50	51	48	51
FLAVOR PICT RD	2	E OF BR-7	4	1	2	NA	2	NA
	2	E OF LYONS	6	1	6	NA	5	NA
ATLANTIC AVE	4	E OF BR-7	21	16	21	22	23	23
	6	E OF LYONS	27	24	27	30	30	31
	6	W OF TPK						
	6	E OF TPK	43	38	48	48	46	48
LINTON BLVD	2	E OF BR-7	3	2	3	4	NA	NA
	2	E OF LYONS	6	3	6	7	NA	NA
CLINT MOORE RD	4	E OF BR-7	22	22	21	21	20	20
	6	E OF LYONS	44	41	48	46	46	48

Parks and Recreation

The Palm Beach County Department of Parks and Recreation expressed the need for at least one district park 50 acres in size and one community park of at least 15 acres. These parks are primarily needed to provide active recreational facilities. These parks should be built adjacent to a high school and middle schools respectively, for the most efficient use of land and cost economy. The Department of Parks and Recreation said that if the suggested State Park does not materialize, then a regional County park in the Ag Reserve will be necessary, preferably located adjoining the County's Indian Mound Park. Acquisition of +/- 100 acres of adjoining uplands to the east of this property will be needed to develop this park in the future.



TO: Tim Sharp, CH2Mhill

FROM: Janice M. Alger, Administrative Officer *MA*
Palm Beach County Sheriff's Office

DATE: November 4, 1999

RE: Follow-up to October 29, 1999 Workshop: Ag Reserve Growth Projections

Please find below estimates of the costs anticipated to provide law enforcement services in the Ag Reserve area in question, pertaining to the bond option as discussed. Please contact me at 561-688-3273 if there is any additional information you require.

BOND OPTION:

14,000 Units; 33,460 population
35 Palm Beach County Sheriff's Office positions

Direct Service Law Enforcement personnel: \$3,333,960

Administrative / Clerical support: \$212,332

Capital: \$2,500,000

TOTAL: **\$6,046,292**

Please note, as indicated in my February 1, 1999 memorandum to David Green, that these figures are calculated at 98-99 costs, not at buildout; and there will be additional county costs associated with the provision of law enforcement services (ie. fueling facility)

Cc: Assistant Director Edward Brooks
Lt. Al Musco

OFFICE OF THE SHERIFF

3228 Gun Club Road • Post Office Box 24681 • West Palm Beach, Florida 33416-4681 • (561) 688-3000 • <http://www.pbso.org>

SFWMD SERVICE PROVIDER NOTES (Henry Bittaker):
AG. RESERVE MASTER PLAN 11/8/99

TO: Tim Sharpe, CH2M-Hill
Joe Kohl, Dover-Kohl
CC: Linda Hoppes, Palm Beach County

Here's a few notes (and caveats) about our needs in the Ag. Reserve as part of our joint Ag. Reserve Master Plan development efforts.

ITEM 1: Restudy's needs for Ag. Reserve Water Preserve Areas.

[FROM RESTUDY]: *This feature includes an above-ground reservoir with a total storage capacity of approximately 20,000 acre-feet located in the western portion of the Palm Beach County Agricultural Reserve. Aquifer storage and recovery wells with a capacity of 75 million gallons per day and associated pre- and post-water quality treatment located adjacent to the reservoir will also be part of this feature. The initial design for the reservoir assumed 1,660 acres with water levels fluctuating up to 12 feet above grade. The final size, depth and configuration of these facilities will be determined through more detailed planning and design to be completed as part of the Water Preserve Areas feasibility Study. The initial design of the wells assumed 15 well clusters with a capacity of 5 million gallons per day as well as chlorination for pre-treatment and aeration for post-treatment. The source of water to be injected is surficial ground water adjacent to the reservoir. The level and extent of treatment and number of the aquifer storage and recovery wells may be modified based on findings from a proposed aquifer storage and recovery pilot project.*

The purpose of this feature is to supplement water supplies for central and southern Palm Beach County by capturing and storing excess water currently discharged to the Lake Worth Lagoon. These supplemental deliveries will reduce demands on Lake Okeechobee and Loxahatchee National Wildlife Refuge. It is assumed that this facility could also be designed to achieve water quality improvements in downstream receiving waters, depending upon pollutant conditions in the watershed.

The facilities will be filled during the wet season with excess water from the eastern portions of the Lake Worth Drainage District and possibly from Acme Basin B. Water will be returned to the Lake Worth Drainage District Canals to help maintain canal stages during the dry season. If water is not available in the reservoir or the aquifer storage and recovery wells, existing rules for water delivery to this region will be applied.

SIZE: 1660 acres, 12' water, 75mgd ASR wells (15 x 5mgd)

Need to have square/round in shape to minimize levee expense

Levee likely 22-24' high; water level to vary 0'-12'. NOTE: 1660 acre footprint would include all levees, ASR wells, seepage canals, etc.

CAVEAT: Size may change according to outcome of Water Preserve Area Feasibility Study results that will be available no earlier than April, 2000.

ITEM 2: Ag. Reserve WPA location vs. State Park location

Joe Kohl has a map depicting our current, September Governing Board adopted, WPA boundaries. We are aware of the proposal for a state park that overlaps with these adopted boundaries, and the recent desire of Palm Beach County Planning staff to have the final Ag Reserve Master Plan portray the state park in the southern 1/3 of section 13, Township 46S, Range 41E. This would cause a move of our proposed Water Preserve Area north into section 1, T46S, R41E and onto land currently owned by the federal government as part of the Loxahatchee National Wildlife Refuge. From very preliminary discussions with staff here at the district, this conceptual planning proposal for the portrayal purposes of the master plan effort appears to be viable, contingent upon the federal government agreeing and being able to provide/sell the necessary lands in section 1 to the District so that our Water Preserve Area reservoir does not have to either shrink in size or become strangely shaped in order to be accommodated. This caveat needs to be explicitly discussed in the Ag Reserve Master Plan document.

STATE PARK SIZE: 200-400 acre with uplands & parking.

AG RESERVE MASTER PLAN: PBC staff proposing to take south 1/3 of section 13 for park and move SFWMD WPA into Loxahatchee NWR land in section 1.

CAVEAT: Federal government must be willing & able to provide/sell section 1 land to SFWMD for Water Preserve Area reservoir.

CAVEAT: Final location of SFWMD WPA could change depending on actual land purchases, land availability, possible land trades with Loxahatchee NWR and final WPA Feasibility Study.

ITEM 3: Ag. Reserve WPA's recreational co-use potential with state park

We have had preliminary staff discussions about the feasibility of allowing our Water Preserve Areas to be used for recreational purposes if a state park is located next to our reservoir. Below is a preliminary list of potential uses that might be able to be accommodated with the appropriate interagency agreements addressing typical issues such as liability, maintenance, cleanup responsibilities, access control, etc. One recreational use that is so far identified as likely inappropriate is the proposal for an equestrian trail around the top of our 22'-24' levees, due primarily to water quality contamination considerations. Other uses that might be allowable, include:

On Top of Levee - walking/bicycle trail, picnic area, observation/info tower.

In Reservoir - carry-in canoes, small sailboats, rowboats (when water available); NO boat trailer/car access; swimming, fishing

Outside of Levee - walking/bicycle trail, picnic area, possible
canoeing on "scenic-enlarged" seepage canals

CAVEAT: Any recreational uses of the WPA must be able to be
accommodated within the normal design and operation of the WPA,
and subject to an interagency agreement on the terms and conditions
of such co-uses



Water Utilities Department

Administration

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October 28, 1999

Mr. Tim Sharp
CH2M Hill, Inc.
800 Fairway Drive- Suite 350
Deerfield Beach, Florida 33441

Re: Ag Reserve Potential Development

Mr. Sharp:

Based on the information received with Frank Duke's October 8th letter, Palm Beach County Water Utilities has adequate capacity to provide service to the Ag Reserve. Our Delray Water Treatment Plant No. 3 will provide water service with assist, if required, from our Water Treatment Plant No. 9 in Sandlefoot Cove. Wastewater treatment will be provided by our Southern Region Water Reclamation Facility on Hagen Ranch Road. All service connections and infrastructure construction will be provided through developer agreements in accordance with our established policies and procedures.

If you need more information please call 641-3429.

Sincerely,

A handwritten signature in dark ink, appearing to read "Fred Rapach".

Fred Rapach
Policy and Program Coordinator

Cc: Gary Dernlan, P.E., Director
Lawton McCall, Director Engineering

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APPENDIX E

Illustrated Land Uses for the Ag Reserve

Illustrated Land Uses for the Agricultural Reserve



The purpose of this document is to illustrate land uses that are, or should be, allowed in Palm Beach County's Agricultural Reserve. The intent is not to be 100% inclusive, but simply to show a few ideas for the implementation of the Ag Reserve Master Plan.

Nurseries are an agricultural land use that has economic viability in Palm Beach County.



Equestrian facilities should continue to be promoted in the Ag Reserve to help sustain its viability. As equestrian activity and interest expands, more services will be needed.



Agricultural worker's housing should look like real houses, not mobile homes

Residential Land Use

Given the inevitable increase in residential development in the Ag Reserve, additional guidelines or code changes are needed to prevent streets from looking like the picture on the right. When the garages and wide driveways take up most of the front yard, the street scene does not look neighborly.



In contrast, front porches, sidewalks, and fences or hedges create a friendly and hospitable neighborhood. Chances of seeing and talking with neighbors is increased in this scenario.



Notice the details in this photograph that create a rural character: big shade trees along the street; a soft edge between the pavement and the front yard; trees and bushes surrounding the house; and the house has open porches made of wood. These are some of the features developers should emulate.



Residential Land Use



New houses are being built in Florida that follow southern tradition. The house shown here is in Celebration, FL and is built close to the front property line with its garage in the back. The sideyard garden is fenced off from the street.



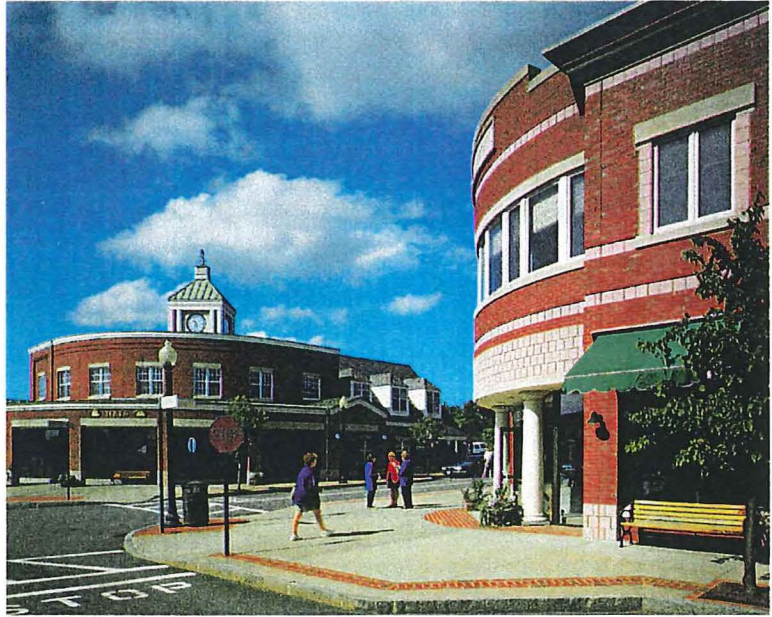
When well designed and landscaped, even the desirable rowhouses of Savannah, GA can look less urban.



These rowhouses have been recently built in Maryland and serve as good examples for Florida. The Mixed-use Centers proposed for the Ag Reserve should use rowhouses as an "architectural" buffer between single family houses and commercial uses.

Mixed Land Use

The Agricultural Reserve Master Plan is recommending that commercial and office uses should be mixed with residential uses in two specific areas. The form of these mixed-use centers should be like traditional towns or villages.



The benefit of the mixing land uses within walking distances provide more choices:

- some people may choose to walk to some of their daily needs, therefore reducing traffic congestion and increasing their daily exercise;
- some people may choose to live within walking or bicycling distance of work, thus providing more free time to spend with friends and family; and,
- some people may chose to own one less vehicle and save a lot of money.



To mix uses, buildings have to be close to one another. Landscape buffers are not needed to separate uses. Florida has a long tradition of building apartments and offices above shops as seen here along Park Avenue in Winter Park, FL. Access to public open space is also very important in mixed-use centers to give residents a variety of scenery throughout their day.



Mixed Land Use



Positioning buildings up to the street edge increases visibility to the stores which helps the merchants attract customers. The verandas on the second level make apartment living or offices more enjoyable.



To encourage people to walk, certain pedestrian "comforts" have to be provided. These include: providing shelter from sun and rain, wide sidewalks free of obstructions, and buildings with storefront windows to make the walk more interesting. On-street parking is needed to serve as a "safety barrier" between moving cars and the pedestrians.



This form of retail is not suggested for the Ag Reserve. Large retail centers, or "big box" retailers should not be allowed in the Ag Reserve.

Civic Land Use



Civic buildings for places of worship can have a rural character by using simple architectural detailing and building massing. Landscaping and shade trees also help.

The new schools proposed for the Ag Reserve should borrow architectural details from old country schools.



The Corner Store



The corner store can provide daily needs and should ideally be within a five minute walk from everyone's home. These should be allowed throughout the developed areas of the Ag Reserve, but only with strict architectural and site planning guidelines. The photograph below shows how in Charlotte, NC the corner store can sit next to house and not be a nuisance because the architecture is similar to the houses on the street.

In contrast, the building would not be a welcome neighbor if it was one story tall with a bright orange plastic roof, set back from the street with a parking lot and gas pumps in front!

