

**REPORT AND RECOMMENDATIONS OF THE COLLIER COUNTY  
RURAL LANDS ASSESSMENT AREA OVERSIGHT COMMITTEE  
FOR THE IMMOKALEE AREA STUDY**



**Prepared on behalf of the Committee by:  
WilsonMiller, Inc.  
May 2002**

## FORWARD

**“Science never appears so beautiful  
as when applied to the uses of human life,  
nor any use of it so engaging as  
agriculture & domestic economy.”**

**THOMAS JEFFERSON, 1798**

Over the past 2½ years, the Rural Lands Assessment Area Oversight Committee has had the opportunity to participate in guiding the work that has resulted in the Goals, Objectives and Policy (GOP) Amendments to Collier County’s Growth Management Plan included in this report. During the period, the Committee spent countless hours reviewing and commenting on data, analyses, and complex concepts, and most importantly, providing valuable input into and guiding the development of the tools and strategies that form the foundation for the GOPs that follow.

Along the way, during their “educational process”, the Committee received reports and presentations from numerous experts in agriculture, ecology, stewardship, planning, and economics. I would like to express my sincere appreciation and acknowledge their valuable assistance, and although space limitations preclude the reproduction of their entire body of materials, excerpts of the information provided have by including in this report.

I would also like to acknowledge the participation of the WilsonMiller Team, County Staff and the members of the interested public, all of whom provided valuable input each step of the way.

Lastly, I would like to express my sincere appreciation to the members of the Rural Lands Assessment Area Oversight Committee, for their dedication to the process and the study, and their willingness to participate in such a comprehensive planning effort. Without the Committee, this collaborative process would not have been possible.

The report that follows is a summary compilation of 2½ years of work, condensed into what I hope is a manageable summary of the process, findings, results and recommendations of the study effort. On April 29, 2002, the Rural Lands Oversight Committee voted unanimously to forward the accompanying Goals, Objectives and Policy Amendments to the Board of County Commission.

Ron Hamel, Chairman  
Rural Lands Assessment Area Oversight Committee

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## **SECTION I - INTRODUCTION**

On June 22, 1999, the State of Florida Administration Commission adopted Final Order No. AC-99-002, which directed Collier County to conduct a Rural and Agricultural Area Assessment. The Final Order provided for the County to conduct the Assessment in phases. Accordingly, Collier County divided the Assessment into two geographical areas, the Rural Fringe Area and the Eastern Lands Area, also known as the "Immokalee Area Study." The Immokalee Area Study (Study) represents that part of the Assessment mandated by the Final Order that includes approximately 195,000 acres of rural lands in northeastern Collier County surrounding Immokalee. The Study Area Map (Appendix "A") shows the boundary of the Study area, which is designated Agricultural/Rural on the Collier County Future Land Use Map, and includes the majority of lands in Collier County in agricultural production. The Final Order requires that the County adopt Growth Management Plan (GMP) Amendments resulting from the Study by November 1, 2002.

During the Study process, Collier County was directed to temporarily prohibit specific uses that were allowed under existing zoning and GMP districts, and was required to adopt certain remedial amendments to the GMP. Collier County has fulfilled these obligations under the Final Order.

The Final Order established the purpose of this Assessment to be:

- "1. Identify and propose measures to protect prime agricultural areas. Such measures should prevent the premature conversion of agricultural lands to other uses.*
- 2. Direct incompatible uses away from wetlands and upland habitat in order to protect water quality and quantity and maintain the natural water regime as well as to protect listed animal and plant species and their habitats.*
- 3. Assess the growth potential of the Area by assessing the potential conversion of rural lands to other uses, in appropriate locations, while discouraging urban sprawl, directing incompatible land uses away from critical habitat and encouraging development that utilizes creative land use planning techniques including, but not limited to, public and private schools, urban villages, new towns, satellite communities, area-based allocations, clustering and open space provisions and mixed use development. The Assessment shall recognize the substantial advantages of innovative approaches to development which may better serve to protect environmentally sensitive areas, maintain the economic viability of agricultural and other predominantly rural land uses, and provide for the cost-efficient delivery of public facilities and services."*

A four-stage planning process was approved by the Collier County Board of County Commissioners and overseen by a citizen committee (Committee). The process included the collection and analysis of data on natural resources and manmade features, preparation of future land use scenarios, evaluation of selected alternatives, and the preparation of amendments to the Collier County Growth Management Plan.

The Committee reached consensus on an expanded set of objectives for the Study based upon the requirements of the Final Order, summarized as follows:

- Prepare a comprehensive long range plan for the future of the Study Area through a collaborative and community based effort of the residents, property owners, and other stakeholders in the study area with the support and participation of appropriate local, regional, state, and federal agencies and non-governmental organizations.
- To accurately inventory important environmental resources and develop long term strategies to protect listed species habitat in the study area. Policies will be designed to direct incompatible uses away from listed species habitat in order to protect water quality and quantity and to protect listed animal and plant species and their occupied habitats.
- To identify prime agricultural lands and propose measures to protect agricultural uses and prevent the premature conversion of agricultural land to other uses.
- To assess the potential conversion of rural lands to other uses, in appropriate locations, while discouraging urban sprawl, directing incompatible land uses away from listed species habitat and encouraging development that utilizes innovative land use planning techniques.
- To maintain the economic viability of agricultural and rural land uses, create strategies to diversify the rural economic base, and provide for the cost-efficient delivery of needed public facilities and services for rural residents.
- To ensure that the residents, property owners, and stakeholders within the study area take a leadership role in creating a long term, sustainable, and economically viable strategic plan for the future of the study area.
- To obtain appropriate Comprehensive Plan policy and map amendments to ensure the protection of listed species habitat, protection of private property rights, and properly direct the future growth of eastern Collier County.

This report is a summary of that process, which occurred over an approximate 2 ½ year time frame and resulted in a unanimous recommendation of the Committee on a set of Growth Management Plan Goals, Objectives and Policies.

The Immokalee Area Study has created the Collier County Rural Lands Stewardship Overlay, a plan that provides the means to achieve the Final Order objectives. Upon adoption by the Board of County Commissioners, the Overlay will be implemented by policy and through the creation and adoption of the Rural Lands Stewardship District of the Land Development Code.

## **SECTION II - PUBLIC PARTICIPATION AND CITIZEN OVERSIGHT**

The Final Order states: *“Public participation will be the hallmark of this planning effort. The participation must be wide in scope with broad community input. State and Regional agencies are hereby directed to participate and assist in the effort. The County shall ensure community input through workshops, public opinion surveys, and committees as necessary to undertake various tasks in the study.”*

The Study was a collaborative community-based planning process involving county residents, area property owners, and representatives of community and governmental organizations under the direction of a citizen oversight committee. The Study was jointly funded by a group of property owners in the Study area (Eastern Collier Property Owners) and by Collier County. The professional consulting team was led by WilsonMiller, Inc, and included certified planners, ecologists, biologists, GIS experts, economists, agricultural experts, civil engineers, landscape architects, water resource specialists and transportation planners. The Collier County staff served as process facilitators, coordinated public input and provided technical support. A Technical Advisory Committee (TAC) consisted of nine state and federal agencies coordinated by the Department of Community Affairs and provided periodic reviews and comments on technical work products. Experts from a variety of fields were invited to provide testimony and input during the study process. A list of the professional team members, county staff, and TAC members is included in Appendix “B”.

The primary means to involve and inform the public and solicit community input during the Assessment was the creation of a Board of County Commissioners (BCC) appointed citizen oversight committee. The BCC established the Rural Lands Assessment Area Oversight Committee (Committee) with a diversified membership representing all aspects of the community including business, agricultural, environmental, and civic interests. Their first meeting was held on October 13, 1999, at which time, the description of the Committee’s duties was provided by County staff, and the proposed scope of the Study presented. The Committee discussed scope of work, process and goals at several meetings culminating in an approved strategy in January 2000. The Committee has met thirty (30) times, their most recent meeting was held on April 29, 2002, at which time they unanimously adopted a recommended set of Growth Management Plan Goals, Objectives, and Policies. The Committee operated under the Sunshine laws. All meetings were advertised, open to the public and “General Public Comment” was an item on every agenda. The members of the Committee as of May 2002 are:

Chairman Ron Hamel, Executive V.P./General Manager, Gulf Citrus Growers Assoc.  
Vice Chair Fred N. Thomas, Jr., Executive Director, Collier County Housing Authority  
Michael Bauer, Florida Audubon/Corkscrew Swamp Sanctuary  
Joseph Boggs, Professional Surveyor and Mapper  
Floyd Crews, Owner, Southwest Florida Service and Supply  
Rodney D. Harvey, Realtor, Naples Realty Services, Inc.  
James Horner, Retired College Professor and Administrator  
James S. Howard, Senior V.P., First Union National Bank

Grady Miars, Project Manager, Bonita Bay Group, Inc.  
 Ann Olesky, Business Owner, Lake Trafford Marina  
 Kathy Prosser, The Conservancy of Southwest Florida  
 David Santee, Agency Manager, Florida Farm Bureau  
 Neno Spagna, Ph.D., Planning Consultant  
 Sonya Tuten, Business Owner, AgTronics Irrigation Computer Technician

Additionally, the following citizens served on the Committee during the Study process:

Barbara Berry, former County Commissioner  
 David Guggenheim, former representative of The Conservancy of Southwest Florida  
 Dick Botthof, Banking (retired)  
 Andrew Mackie, Corkscrew Swamp Sanctuary  
 Dawn Jantsch, Naples Area Chamber of Commerce  
 Wes Wilkins  
 Jim Rideoutte, Accountant (Retired)  
 Richard Smith  
 Stephen Bortone, The Conservancy of Southwest Florida

In addition to the Committee meetings, an extensive number of supplemental presentations and workshops were held with non-governmental organizations and governmental agencies that expressed an interest in the Study. The following is a partial list of these presentations:

9/21/00	Leadership Collier, Naples
9/23/00	Florida Chapter of American Planning Association, Tampa
10/12/00	The Urban Land Institute Smart Growth Forum, Bonita Springs
2/6/01	The Leadership Institute, Naples
2/20/01	Florida Chamber Growth Management Short Course, Orlando
5/11/01	Immokalee Chamber of Commerce, Immokalee
5/25/01	Association of Florida Community Developers, Orlando
8/23/01	The Nature Conservancy, Naples
9/26/01	Collier County Board of County Commissioners Workshop
10/11/01	Department of Community Affairs field visit, Naples
11/6/01	Western Everglades Coalition at the Conservancy, Naples
11/9/01	Leadership Florida, Corkscrew Swamp Sanctuary, Naples
1/7/02	Western Everglades Coalition at the Conservancy, Naples
1/15/02	Florida Chamber Growth Management and Environmental Short Course, Orlando
1/17/02	Leadership Collier, Growth Management Session
1/25/02	Big Cypress Basin Board of the South Florida Water Management District, Naples
2/22/02	Pelican Bay Rotary Club, Naples
4/11/02	Rural Lands Stewardship Council, Tallahassee
4/18/02	Collier County Environmental Advisory Board sub committee
4/19/02	Department of Community Affairs, Tallahassee

An interactive Assessment web site was created ([www.nasites.com/collier/](http://www.nasites.com/collier/)) and maintained by Collier County for the Assessment to keep the public informed and to publish all documentation relative to the Study. Documents, including all Committee presentation materials, correspondence, reports, agendas, and meeting minutes, are published on the web site.

The Committee held two public visioning workshops on June 6<sup>th</sup> and June 18<sup>th</sup>, 2001, facilitated by Dr. Jerry Schoenfeld of Florida Gulf Coast University. Members of the public and Committee members provided input as to their vision of what the assessment should accomplish, and the process established and prioritized specific recommendations on tools, techniques and strategies to be considered in the Study.

On September 26, 2001, the Board of County Commissioners conducted a ½ day televised public workshop specifically for the Immokalee Area Study. A detailed presentation was made on the status of the Rural Lands Area Assessment/Immokalee Area Study. Video, multi media, and live presentations were made, with a question and answer period and public input following. These materials were subsequently rebroadcast on Collier County's public information television channel. The presentation slides are included in Appendix "C".

Statewide public input also played a significant role in the Immokalee Area Study. As the Study was getting underway, Governor Bush convened a select committee of diverse citizens from across Florida to study the current issues facing our state in growth management and community planning. After nearly a year of study and public workshops throughout Florida, a Final Report was issued in February 2001. One of the chapters of the report deals specifically with rural land use planning, and is highly relevant to this Study. The Report states:

*"The Commission recognizes the long-term value of retaining rural lands for agriculture, open space and conservation uses. A thriving rural economy with a strong agricultural base, healthy natural environment, and viable rural communities is an essential part of Florida's present and future vision. Rural areas also include the largest remaining intact ecosystems and best examples of remaining wildlife habitats as well as a majority of privately owned land targeted by local, state and federal agencies for natural resource protection.*

*The growth of Florida's population and the demand for low density and moderately priced housing to serve it create increasing pressure to develop rural lands. Florida's growth management policies have not successfully controlled, and have in many instances accelerated rather than reversed this trend.*

*There is a direct relationship between land values and the ability of rural landowners to keep their properties in agricultural production. Florida's agricultural economy is land rich and cash poor. The value of agricultural lands as collateral for borrowed capital needed to support agricultural operations is based in large part on the underlying development rights for non-agricultural uses. These underlying development rights have been reduced over time as a byproduct of ineffective land use policies.*

*Regulatory controls do not stop growth or permanently assure the protection of habitats or ecosystems. Where permanent protection and management has been achieved, this has occurred primarily through programs such as voluntary land conservation easement and acquisition programs, and incentives based on cooperation by landowners, such as resource conservation easements.*

*Even with the best efforts at urban infill, the pressures for development will impact almost every rural county. Florida lacks a comprehensive growth management policy, which proactively and realistically addresses both the pressures of population growth and the unique characteristics and multiple needs of rural Florida.*

*The Commission recommends that land acquisition agencies be more aggressive in their use of conservation easements, that development rights be acquired and that the viability of Florida's agricultural economy be maintained and protected through innovative development strategies in rural areas and the use of incentives that reward landowners for good stewardship of land and natural resources. Along with incentives for maintaining agriculture and good natural resource stewardship, such stewardship should be rewarded through a new program of agricultural land conservation and natural resource conservation agreements.*

*The fundamental basis of the State's rural policy should be the restoration of rural land values, enhancement of the ability of land owners to obtain economic value from their property, and protection of private property rights."*

The Governor's Growth Management Study Commission identified the need for a new incentive based strategy for the protection, enhancement, and diversification of rural land and the rural economy -- a strategy that would provide balance among the competing needs: conserving natural resources, promoting rural economic diversification, protecting property rights, supporting the agricultural economy and accommodating future rural population growth. This led to the adoption of new legislation during the 2001 session to promote rural land stewardship (Chapter 163.3177(11), F.S.), included for reference in Appendix "D". The Immokalee Area Study accepted the challenge of developing a new strategy and generated an innovative planning concept based on the principles of rural land stewardship as defined therein.

As a result of public input and analysis, the primary strategy selected by the Oversight Committee was based upon rural land stewardship, using the principles described in Chapter 163.3177(11), F.S., which became effective on July 1, 2001. Rural land stewardship was evaluated in the first scenario, and carried through each scenario as a preferred technique. Unlike traditional approaches to environmental preservation and transfer of development rights, rural land stewardship is able to differentiate among a wide variety of physical and use characteristics of land, all within a sophisticated and interactive technological model.

Incentive-based stewardship uses a formula that generates credits based on specific natural resource characteristics of the land. The greatest incentives are given to selectively eliminate the most intensive permitted uses on land with the most valuable natural resource assets. The program is incentive driven, but designed to work in concert and complement existing local, state and federal regulatory programs.

The Growth Management Plan Goals, Objectives and Policies contained herein, along with the Land Development Code district will implement the Rural Lands Stewardship system recommended by the Committee. The Policies explain in detail the Rural Lands Stewardship system and other strategies identified to meet the intent of the Final Order. The report will summarize each step of the planning process that led to the recommended Growth Management Plan Stewardship Overlay.

### SECTION III – STUDY AREA CONTEXT

#### AGRICULTURE.

(Excerpted from and with acknowledgement to Dallas Townsend)



The first significant modern agricultural activity in Southwest Florida was the cattle industry that was started in the area well before 1900. Initially, the cattle industry utilized native range and, little land development activity occurred during that time.

It wasn't until 1928 when the Tamiami Trail (US 41) was completed and the Atlantic Coast Line Railroad reached Everglades City from Immokalee along with State Road 29 that commercial vegetable production began in Collier County. Prior to that time, there simply was no road infrastructure by which the produce could be transported to the market from the interior areas.

Citrus production prior to 1920 was limited to a small grove that was planted at Deep Lake, the Roberts Ranch Grove in Immokalee, a grove in Felda, and small groves along the coast near Fort Myers and along the Caloosahatchee River.

Crops were produced only during the late winter and spring months because the area was too wet for fall production. There was no irrigation and almost no water control ditching. During World War II, pine and palmetto flatwoods became utilized for vegetable production. These areas made them useful for crop production because they were elevated above the swamps, sloughs and ponds and did not have subsurface rock except at the deeper zones. This allowed farmers to dig ditches and build dikes around the fields to keep water from running into the field, and excess water was pumped over the dike and out of the field. Farmers were then able to produce fall, winter and spring crops.

The County Agricultural Cooperative Extension Department was created in 1950. Under this organization's direction, and with the assistance of the University of Florida Agricultural Experimental Station and the USDA Soil Conservation Service, the first soils map in Southwest Florida were produced for Collier County.

Vegetable growers used the soils map to select the best flatwoods soils because it was necessary to move fields on a frequent interval due to the build up weeds and diseases. It was very rare that vegetables would be produced on the same field for more than two years. After

being used for vegetable production for approximately two years, a field would be abandoned and the cattle industry would then plant improved pasture grass on the old field.

By the late 1960's, it was apparent that suitable undeveloped pine and palmetto flatwoods areas were becoming scarce. As a result, growers began to experiment with soil fumigation and plastic mulch culture to control weeds and diseases. By the late 1970's, growers had almost universally adopted the soil fumigation and plastic mulch culture of growing vegetables. As a result, very little clearing of flatwoods has occurred in Collier County since 1980.

The citrus industry began to move into Collier County about 1960 with a few small groves in the Immokalee area. The citrus grove development was given a dramatic boost by the freeze of 1962, which destroyed a large acreage of citrus in Central Florida. In addition, the research by the University of Florida had shown that the flatwoods soils could produce good citrus groves if adequate water control was achieved. Another surge in development of the citrus industry in Southwest Florida occurred in the 1980's when devastating freezes again occurred in Central Florida.

Today, the major agricultural industries in Collier County are citrus, vegetables, and beef cattle. Improved agriculture and associated water retention areas occupy approximately 113,000 acres or 58% of the study area, and grazing leases occupy an additional 33%. Total acreage in agriculture has remained steady in the past 15 years. Citrus acreage increased from 10,063 acres in 1986 to 35,302 acres in 2000, primarily through the conversion of cattle pastures, not natural areas. Land in lease status for row crops, primarily vegetables, vary each year, and is currently 28,063 acres.

To understand the long-term prospects for continued agricultural use, agricultural experts Thomas Spreen of the University of Florida and Fritz Roka of the UF Agriculture Extension Office presented a workshop discussion of the economics, expansion potential and long-term viability of agricultural use in the County. This information assisted the Oversight Committee and team in developing a better understanding of both the current conditions and factors influencing agriculture as well as projecting future scenarios.

The workshop revealed the following information:

- Collier County ranks 9<sup>th</sup> among Florida counties for citrus production; Florida is the 2<sup>nd</sup> largest citrus producer in the world, after Sao Paulo state, Brazil.
- The citrus industry in Collier County is relatively young, the freezes in the central part of the state in the 1960's and 1980's stimulated a southward move in citrus production.
- The majority of orange production in Collier County is processed into orange juice. There are no processing plants in Collier County, which makes producers in this area vulnerable, as the citrus processing sector is consolidating.
- Florida is the primary domestic supplier of fresh vegetables in the US market in the period from November to May. Vegetable producers face tough competition from Mexico and are at significant economic risk from international market forces. It is often difficult for growers to achieve a product and price ratio that is economically viable.

- The beef cattle operations in Collier County are primarily breeder cows. This is a low-input-low-return business, but provides a reliable income stand-by for landowners. Even small increases in costs could jeopardize the viability of beef cattle in Collier County.

## **NATURAL RESOURCES**

During the past several years of study and analysis associated with Collier County's comprehensive planning process, it became apparent that Collier County lacked an accurate, cohesive and reliable set of natural resource data from which to make well-informed decisions about the future of the Study area. Although there existed numerous sources of data, no one had ever compiled, consolidated and refined it into a useable and consistent format for planning. Land cover is a fundamental consideration in land use planning, and alternatives proposed to address requirements in the Final Order could not be thoroughly and fairly evaluated until accurate, up-to-date landcover, natural resource, and other data were compiled for the study area, and incorporated into an appropriate planning tool. As the first stage of the Study, WilsonMiller performed a comprehensive data gathering and mapping effort, inventoried information on the existing conditions of the study area, with a focus on the location, type and quality of existing natural resources and land uses. A major component involved detailed land cover mapping on digital aerial imagery. The principal work product is an integrated and accurate foundation of existing data and analysis incorporated into Collier County's first Geographic Information System (GIS) based planning tool.

The data sets compiled from local, state, federal, and private sources reflected in the Stage 1 report represent the most extensive, updated data available for the Study area. The land use and landcover mapping was verified using scientific statistical procedures, and its accuracy exceeds federal standards for vegetation mapping. As such this constitutes the best available information for planning purposes. A summary of Stage 1 findings are included herein; the complete report can be found on the county website.

In accordance with the Final Order, Collier County established interim Natural Resource Protection Areas (NRPAs) that included 40,895 acres or 21% of the study area. The NRPA designation generally covers two systems, the Camp Keais Strand and the Okaloacoochee Slough. The interim NRPA boundary does not include Corkscrew Marsh (approximately 7156 acres) or the majority of the Okaloacoochee State Forest (approx. 4842 acres). Approximately 5,000 acres of uplands (1/4 of total uplands in the study area) and 3,000 acres of agricultural lands were included in this interim NRPA designation. The Big Cypress Area of Critical State Concern (ACSC) occupies approximately 63,700 acres (33%) of the study area. The uses in this area are strictly regulated by state law pursuant to The Big Cypress Conservation Act of 1973, Chapter 380.055, F.S.

Six federally listed species have been documented within the study area, and an additional 10 state-listed species have been recorded. The list includes several wading bird species, reptiles such as the gopher tortoise and American alligator, and mammals such as the Big Cypress fox squirrel, Florida black bear, and Florida panther. Updated land cover map and listed species occurrence points were used, along with additional analysis, to define areas with the highest

habitat values. Special emphasis was placed on defining the large continuous areas of natural vegetation that serve as both natural habitat and as wildlife corridors

### **RESIDENTIAL**

Collected data shows that in 2000, the Study Area had a population of 1,091 persons in 368 dwelling units, and experienced nominal growth from 1990 to 2000, adding only 106 persons and 38 units during that period. The Immokalee Urban Area, which lies in the center of the Study Area, experienced more rapid growth during the decade, from 13,604 Persons in 4,489 units in 1990 to 17,953 Persons in 5,956 units in 2000. Substantially faster growth occurred in the area lying west of the Study, in northeastern Golden Gate Estates and Orangetree, which grew from 1,041 persons in 396 units in 1990 to 5,377 persons and 2,072 units in 2000, a five fold increase in population during the decade. This demonstrates that while the Study area has yet to experience population growth pressures, adjacent urban and estate areas are experiencing significant population growth.

In summary, the Immokalee Study Area has experienced minimal change since 1985. There has been no significant agricultural land converted to non-agricultural uses, population growth has been minimal, and urban growth pressures have had no impact on the land. Only 3% of the land area has been converted from natural vegetation to agricultural since 1985. The vast majority of the area is used for agricultural purposes, ranging from row crop production and citrus cultivation to cattle grazing. An analysis of parcel size shows that the entire study area contains only 138 parcels of 40 acres or less. This indicates that subdivision of land or conversion to urban use is not occurring.

## **SECTION IV - DATA COLLECTION AND ANALYSIS**

The first stage of the Immokalee Area Study involved the collection, updating, correcting, and compilation of data sets necessary to characterize the existing conditions of the study area. The primary tasks were to 1) collect and compile available local, state, and federal data for the study area, in the form of publications, maps, electronic GIS data files 2) to produce updated, scientifically accurate maps of land use and landcover within the study area at scales suitable for local planning; and 3) integrate the various data files and digital maps into GIS for analyzing and overlaying various data sets. The available data sets, publications, and maps obtained for the Stage 1 report are summarized in Table 1.

WilsonMiller prepared a county-scale land use/landcover (LULC) map, since previously existing LULC maps were outdated, not mapped at local scales, or exhibited positional and/or classification errors. These data sets, which now represent the best available information on the study area, were used for subsequent stages of the Study. GIS allowed the team to sort, query, analyze, and integrate these large data sets in a variety of ways, and to summarize complex spatial relationships in map or table formats. GIS and the extensive data sets enabled the development of rational planning alternatives, analysis of their potential benefits and impacts based upon specific criteria, and the iterative design and testing of various planning alternatives.

The heart of the Stage 1 data collection effort was the production of an updated, accurate land use/landcover (LULC) map that delineated the location of natural and man-made features within the study area. This was accomplished by extensively updating and correcting the 1997 SFWMD land use map for the area, and field verifying the updated map via a scientifically-accepted statistical procedure. The classification system used for LULC mapping was the Florida Land Use, Cover and Forms Classification System (FLUCCS), (FDOT, 1999) on a Level III order of detail. An in-depth account of the mapping procedures is provided in the Stage 1 Report, available publicly since early 2001 on the Collier County web site.

The mapping base for all updated LULC mapping was the 1995 USGS digital ortho quarter-quad (DOQQ) false color imagery, which was the most recent rectified digital imagery available at the time of the Stage 1 work. The DOQQ imagery was chosen as a map base because it is digitally rectified aerial photography (corrected for spatial distortion), which allows map lines and other digital data sets to be accurately overlaid on the imagery in GIS. Additionally, in contrast to a simple thematic map, the aerial photography map base allows technical reviewers, county staff, state and federal agencies, and the public to see the landscape features that were mapped and classified.

The updated LULC mapping was compiled at a scale of 1"=1000', or a 1:12,000 map scale. The accuracy of the LULC map was assessed in the field according to published scientific statistical procedures utilized by the US Department of Interior, National Biological Service (NBS) and National Park Service (NPS) (US Department of Interior, 1994). The NBS/NPS mapping accuracy standard for national parks is 80% correct classification. The Stage 1 LULC mapping achieved a statistical accuracy estimate of 91% correct classification. This result greatly exceeded the NBS/NPS standards for mapping accuracy, and to our knowledge represents the most accurate LULC map of such a large area (~195,000 acres) in the state of Florida.

An important distinction exists between the terms “landcover” and “land use”. Landcover refers to the physical and vegetative features present on the land surface, without regard to how these features are utilized by humans. For example, a state park area with pine flatwood habitat would be classified as “pine flatwood” landcover. Land use defines areas where certain human activities occur. In the previous example, the land use for the same area would be “recreation” or “preservation.” Some landcover and land use designations overlap and essentially cannot be separated. Examples include agricultural and residential areas, where the physical features present (e.g., row crops or houses) are synonymous with a human activity. These distinctions must be considered when interpreting the data (e.g., acreage tables) for planning purposes.

The following subsection will summarize each of the primary theme maps from Stage 1, which are included in Appendix “E”. Please note that all acreages shown on these maps are approximate. The total acreage of the Study Area was adjusted following Stage 1 by approximately 766 acres as a result of mapping refinements during the course of the study and inclusion of additional acreage. The total acreage used in the final area calculations is 195,846 acres.

## **THEME MAP DESCRIPTIONS**

### **Landcover Map**

The thematic landcover map for the study area (Appendix “E”, Exhibit 1) summarizes the vegetation and physical features of the study area as they occur on the landscape. Vegetated, non-cultivated areas used as permitted agricultural stormwater retention areas are included in the “Wetlands” landcover category, even though the actual land use is agricultural.

### **Existing Natural Vegetation Map**

Appendix “E”, Exhibit 2 is derived from the landcover map, and shows only those areas with natural vegetation landcover. The purpose of the map is to highlight the spatial distribution of natural vegetation within the study area. As with the landcover map, wetland areas used for agricultural stormwater retention are included in this landcover map, although they are an integral part of the agricultural infrastructure.

### **Soils Map**

Appendix “E”, Exhibit 3 displays the spatial distribution of non-hydric and hydric soil map units within the study area. Generally speaking, non-hydric soils are associated with uplands, and hydric soils with wetlands. Soil map units mapped by USDA-NRCS necessarily contain some mix of soil types (non-hydric versus hydric) at the scale of a soil survey map. Therefore, these maps should be considered to be general guide to the location of non-hydric and hydric soils, and are not precise indicators of jurisdictional wetlands. As mapped, non-hydric soil map units comprise 44% of the study area hydric soil map units comprise 56%. Hydric soil map units are most prevalent in the major slough systems (Camp Keais and Okaloacoochee) and the

southern portions of the study area. Only the wettest hydric soils are associated with major flowways within the study area.

### **Existing Land Use Map**

The map of existing land uses (Appendix “E”, Exhibit 4) details where various human activities occur within the study area. These uses of the land must be taken into account during the development of planning alternatives, just as the landcover must be considered. Grazing leases exist on nearly all natural vegetation and rangeland areas within the study boundary.

### **Agricultural Land Use Map**

Agricultural land uses are broken down into sub-categories that include row crops, citrus groves, pasture, and grazing lease areas on Appendix “E”, Exhibit 5. It is important to note that the distribution of various agriculture types can vary substantially over time as agronomic and economic factors change. This map reflects conditions as of November 2000.

### **Agricultural Surface Water Management System Map**

Appendix “E”, Exhibit 6 illustrates the relationships between the agriculture drainage infrastructure (canals, reservoirs, agricultural water retention areas) and the general surface hydrology of the study area. It is obvious that existing surface water management is an integral part of the overall existing land use.

### **Oil And Gas Map**

Southwest Florida is one of two known onshore areas within the State that produces oil and gas. Oil and gas resources have been explored for and produced from fields located beneath the Study area, and also beneath the current conservation areas outside of the Study area, since the 1930s. These existing uses are expected to continue. The resources are located beneath the surface and cover very large areas, however the related surface facilities are relatively small in size, as evidenced by pads such as those shown on Appendix “E”, Exhibit 7.

### **Existing and Proposed Preservation Lands Map**

Within the study area, the two main existing preservation areas are the Corkscrew Swamp and the Okaloacoochee Slough State Forest (Appendix “E”, Exhibit 8). Existing preservation lands total 12,933 acres, or 7 percent of the study area. Proposed public acquisitions within the study area are the Corkscrew Regional Ecosystem Watershed (CREW) lands around Corkscrew Swamp and the Camp Keais Strand. Proposed public acquisitions total 27,754 acres, or 14 percent of the study area. Two large public preservation areas occur along the southern boundary of the study area: the 27,000-acre Florida Panther National Wildlife Refuge (FPNWR), and the northwest corner of the 727,000 Big Cypress National Preserve (BCNP).

### **Interim NRPAs and Special Study Areas Map**

Appendix “E”, Exhibit 9 depicts the location and extent of the interim Natural Resource Protection Areas (NRPAs) and special study areas as approved by the Collier County Board of Commissioners in November 1999. Since the Stage 1 Report was completed, the interim NRPAs and special study areas have been subjected to detailed analyses to determine what, if any, modifications were required for delineating significant regional flowways and listed species habitat. These analyses eventually resulted in the delineation of Flow way Stewardship Areas (FSAs) and Habitat Stewardship Areas (HSAs), which define areas that receive additional layers of natural resource protection for regional flowways and listed species habitat under the proposed plan.

### **Water Resources Map**

Appendix “E”, Exhibit 10 shows the regional water resources within the study area, including major flowways and public water supply wellfields. The depicted wellfields are outside of the Study area, but the zones of influence for potential groundwater contamination cross into the study area and were considered in planning alternatives. The wellfields within the Immokalee Urban Area serve Immokalee, while the wellfields between Everglades and Desoto Boulevards are owned by the City of Naples.

### **Listed Species Occurrence Points, excluding Panther Map**

Appendix “E”, Exhibit 11 includes listed species occurrence data from both the Florida Natural Areas Inventory (FNAI) and the Florida Fish and Wildlife Conservation Commission (FWC) databases. Florida panther telemetry points (Appendix “E”, Exhibits 12 and 13) were presented separately since they would obscure other species points. Because observation of several species often occurs at any given point for FNAI and FWC data, a unique symbol for each species could not be accurately placed on the map. Occurrence points may be queried in GIS and accounted for in any analysis. Among the species listed within the study area are various wading birds, wood storks, bald eagles, Florida scrub jay, and swallow-tailed kites. Florida black bear road kill data are also included. The publication of updated wading bird rookery data by FWC is not yet available as of May 2002.

### **Panther Telemetry Points Within South Florida Region Map**

Panther radio telemetry points for 90 panthers (including living and deceased cats), covering the period from January 1981 through June 2000 are presented on Appendix “E”, Exhibit 12. This map provides a regional perspective for the panther, and illustrates the relationship of panther occurrence to previously designated Priority I and II panther habitat (Logan and others, 1993) and existing and proposed preservation lands. The regional perspective is crucial to understanding the context of the study area regarding panther ecology and preservation efforts within the larger framework. The current adult panther population was estimated at 60-70 individuals as of June 2000, of which 37 were collared (Shindle and others, 2000). Each data point on the map represents one observation of a single panther on a single day, and that the data points represent an average of three observations per panther per week over a 20-year

period (approximately 150-200 points per cat per year). The Priority I and II habitat designations were developed using telemetry data and data from Closing the Gaps (Cox and others, 1994), and were delineated rather crudely along section lines. Telemetry data indicate that much of the designated Priority habitat is not utilized.

### **Panther Telemetry Points Within Study Area Map**

Appendix "E", Exhibit 12A shows the same telemetry point data set at the scale of the study area. The data were used within the study area for a variety of analyses involving general patterns of panther occurrence, habitat utilization, and movements across the landscape. The high quality of the updated LULC map assisted in validation of habitat models and ranking of potential habitat, confirming the general conclusions regarding preferred, tolerated, and avoided panther habitat reported by Maehr and Cox (1995).

**TABLE 1: DATA SETS AND PUBLICATIONS OBTAINED FOR USE IN THE IMMOKALEE AREA STUDY**

DATA SET OR PUBLICATION OBTAINED	SOURCE	FORMAT	RELEASE DATE	USES / COMMENTS
Collier County Growth Management Plan	Collier County	Publication; map	2000	Existing land uses; planning alternatives
Area of Critical State Concern Enabling Report	SFWMD	Publication	1993	Information for Big Cypress ACSC
SFWMD land use mapping	SFWMD	GIS file	1997	Basis for updated landcover mapping
FWC listed species occurrence points	FWC	GIS file	12/1999	Basis for species distribution models
Florida Natural Areas Inventory (FNAI)	FNAI	GIS file	2000	Same as FWC data; some overlap
South Lee County Watershed Plan	SFWMD	Publication	2000	Regional hydrology, flowways
South Florida Multispecies Recovery Plan	USFWS	Publication	1999	Listed species management
Water quality and modeling data from Corps of Engineers EIS for SW Florida	USACOE	Publication; tables	2000	One of several water quality data sources; models not calibrated
Historic aerials (stereo aerial photography)	USDA-NRCS	Photographs	11/85 - 2/86	Changes in land use since 1986; same time period as 1986 Landsat, <u>Gaps</u> map
Soils map from NRCS Soil Survey	USDA-NRCS	GIS file; publication	1998	Soils maps and data; 1985 photographs
FWC panther telemetry data and updates	FWC	GIS file	6/30/2000	Basis for panther habitat modeling
FWC strategic habitat conservation areas mapping and updates	FWC	GIS file; publication	2000	Information for rare species not in 1994 <u>Gaps</u> report
DOQQ (digital ortho quarter quad) aerials	USGS	GIS image files	1995	Aerial photo base for mapping, analysis
Existing stereo aerial photography images	USGS	Photographs	1995	Stereoscopic photo-interpretation
1999 aerial photography	Realty atlas	Photographs	1999	Update to 1995 DOQQ photography
Existing utility service area and capacity information	Collier County	Maps	1998	Existing and future utility services
Existing agricultural permits to identify permitted water management areas, and to identify discharge points and rates	ECPO	Maps, permits	Various	Identifies agricultural drainage infrastructure (retention areas)
Rainfall data for regions within the study area	SFWMD	Publication; online database	Date updated monthly	Basis for water balance estimates, surface water management planning
SFWMD and USGS monitoring well data and locations	SFWMD; USGS	Publications; online databases	Data updated monthly	Basis for water balance estimates, groundwater resources
FDEP Ambient Water Quality Monitoring Network data	SFWMD	Online database	Data updated monthly	Data for existing water quality, estimates of WQ impacts for planning alternatives
SFWMD Recharge rates per SFWMD publication WRE-327	SFWMD	Publication, maps	1995	Models recharge rates for several aquifers
Transportation data from FDOT Collier County MPO	FDOT; Collier Co.	Tables, maps	2000	Data for existing and future traffic network
Wading bird rookery sites <sup>1</sup>	FWC	GIS file	Various	Identification of wading bird nesting areas
FWC Change Detection Analysis (1986-1996)	FWC	GIS file	2000	Some contradictions with aerial photos, maps

<sup>1</sup> The Florida Fish and Wildlife Conservation Commission (FWC) is scheduled to publish the Florida Atlas of Breeding Sites for Herons and Their Allies within the next six months. The atlas was last published in 1991. The rookery data provided by Mr. Jim Beever (FWC) will serve as best available data until the new rookery data are published.

## **SECTION V - SCENARIO DESIGN AND ANALYSIS METHODOLOGY**

### **Scenario Design**

The Final Order called for the balancing of three major goals, natural resource protection, continued agriculture viability, and sustainable development. The Committee determined that the most appropriate approach was to develop and test scenarios that recognized, contributed to and balanced all goals simultaneously. The method selected was to design the first scenario using a prioritized set of tools, techniques and strategies from the visioning workshops, in such a way that all of the goals of the Final Order were addressed, and then analyze, improve and refine each subsequent scenario. At the end, the final scenario would be the fine-tuned version of all of the tools, techniques and strategies tested and selected during the process

A wide variety of tools, techniques and strategies were explored, discussed and analyzed during the scenario phase of the study. Three scenarios were created to project the conditions of the horizon year of 2025 based on an established set of parameters. The foundation for all scenarios was rural land stewardship. As envisioned, the stewardship concept would yield a flexible, incentive-based program that would address the complex interrelationship of land characteristics, natural features, and property rights.

### **Scenario Analysis**

A technical analysis of the economic, environmental, transportation, public service, utility and water resource impacts was performed. The analysis process was designed to assist the Committee and public in selecting tools, techniques and strategies that maximize the potential benefits, minimize adverse impacts and achieve the goals set forth in the Final Order. The methodology for the analysis of scenarios was established over several months in collaboration with the Committee. In general, the methodology included the establishment of the Horizon Framework for the year 2025, the establishment of a baseline reference scenario to use for comparison to each scenario, and the selection of a representative sub-area of the overall study area within which each scenario could be described and tested. A brief description of each of these analysis elements follows.

#### **Horizon Framework**

The horizon framework is the collective set of parameters within which scenarios are evaluated. A horizon framework ensures that variables being tested can be benchmarked to a common reference. Framework parameters are based on state policy (ACSC), county policy (Immokalee Urban boundary), approved methodology (MPO model), or consensus (horizon year). The horizon framework is depicted on a map previously provided and includes:

- ❑ A Horizon year of 2025.
- ❑ The MPO 2025 projected road network, population, traffic analysis zones, and travel demand model.
- ❑ Interim NRPA boundaries as adopted.
- ❑ The current boundary of the Immokalee Urban Area.
- ❑ The Big Cypress Area of Critical State Concern, and regulatory framework therein.
- ❑ Existing public lands.
- ❑ The natural resource and land use inventory as delineated in Stage I of the Assessment.
- ❑ Employment estimates and demographic indexes to establish support services.
- ❑ Adopted level of service standards in the Collier County Growth Management Plan.

### Baseline Reference Scenario

The County's Growth Management Plan (Plan) goals, objectives, and policies coupled with existing zoning regulations and other land development regulations in effect at the time the Final Order was adopted, when applied to the Study area and projected forward establish a future condition that results from no change to the Plan. This is the baseline reference scenario, sometimes described as the "do nothing" plan, used to assess whether and to what extent the application of various tools will achieve the results desired under the Final Order.

### Sub Area

A sub area of the overall Study Area was delineated and presented to the Committee on October 22, 2001. It includes a representative amount of various types of land cover and land use found in the overall study area and was used to test alternative scenarios. The projected 2025 dwelling units and populations are derived from the Collier County Long Range Transportation Plan.

Sub-Area Acreage: 19,946 acres (approximately 10% of study area)  
 Sub-Area 2025 Dwelling Units: 1614 (approximately 10% of study area)  
 Sub-Area 2025 Population: 4,035 persons (2.5 persons per Dwelling Unit)

The following table shows the existing land cover of the sub area used in each scenario:

<b>SUB AREA LAND COVER</b>			
<b>AGRICULTURAL AREAS</b>		<b>Acreage</b>	<b>% of Area</b>
	PASTURE	6969	
	FALLOW	1480	
	WATER RETENTION (uplands and wetlands)	1443	
	CITRUS	1317	
	ROW CROP	1290	
	RANGELAND	454	
	SPECIALTY	197	
	BARREN	19	
	<b>SUBTOTAL</b>	<b>13168</b>	<b>66%</b>
<b>DEVELOPED AREAS</b>			
	TRANSPORTATION (Road R/W)	248	
	RESIDENTIAL/COMMERCIAL	71	
	WATER	32	
	<b>SUBTOTAL</b>	<b>351</b>	<b>2%</b>
<b>NATURAL AREAS</b>			
	WETLANDS	3760	
	NATIVE UPLAND	2667	
	<b>SUBTOTAL</b>	<b>6427</b>	<b>32%</b>
<b>TOTAL SUB AREA</b>		<b>19946</b>	<b>100%</b>

## **SECTION VI - SCENARIO ONE**

### **Scenario One Overview**

The first scenario was based on the premise that privately owned rural lands in the Immokalee Area Study boundary would be included in a Rural Land Stewardship Overlay, using tools and incentives designed to give flexibility in the application of resource protection measures and the transfer, distribution, conversion and concentration of specific land based rights (stewardship credits) to accomplish the vision. The Stewardship overlay is designed to address the unique rural characteristics of Collier County's rural agricultural lands. A stewardship system is an alternative to publicly funded acquisition of property to promote both natural resource protection and continuing agricultural use. Success will result from an innovative and incentive based system that will not be dependent on a regulatory approach.

Using the data and analysis in stage 1, land within the study area was indexed based on its characteristic set of natural resource attributes. Vegetation, habitat, soils, hydrology, and location are all indicative of a natural resource value of the land. With a described set of identifiable characteristics attributed to each acre, a set of natural resource indices that distinguish the natural resource "value" of one parcel of land from another was established.

Lands within the Study Area are generally zoned "A-Agricultural", forming the basis for all land use entitlements under the Collier County Land Development Code and the Collier County Growth Management Plan. A set of land uses and land use rights is permitted by right or conditional approval on any A-Agriculturally zoned land. To establish a workable stewardship credit system, specific uses were consolidated into functional groups or "layers". Conceptually, a stewardship program could allow one or more layers to be eliminated, leaving the remaining layers in place, providing a continuing albeit reduced economic use to the owner. If each layer had an assigned index value, the total credit value of land would be established by the sum of all of the layers of permitted land use.

The credit system uses the natural resource factor and the land use layer value to arrive at a credit value. Establishing appropriate natural resource index factors within each category was accomplished by testing various combinations and by examining the results in each of the scenarios that were developed.

Scenario One involved the initial application of the Natural Resource Index Factors and incorporated the early development of the stewardship strategies. Scenario 1 also introduced the Receiving Area Characteristics and the Baseline Reference that would be used throughout the remaining scenarios. The Baseline Reference established the benchmark for comparing the various scenario results to the underlying standards currently in place, the "status quo" (e.g., zoning, Growth Management Plan, etc.).

Privately owned rural lands in the Immokalee Area Study boundary will be included in an overlay, tentatively named "Immokalee Area Rural Stewardship Overlay". The overlay will not change the underlying land uses, development rights, or zoning that existed prior to the Final Order, instead it will create public/private tools and incentives designed to give flexibility in the application of resource protection measures and the transfer, distribution, conversion and concentration of specific land based rights (stewardship credits) to accomplish the vision. The

overlay will be implemented through the Collier County Growth Management Plan (GMP) and Collier County Land Development Code (LDC).

**Primary Assumptions:**

- At the horizon year, there will be a dynamic balance of land uses in the Study area that each contribute to the primary objectives: a viable agricultural industry, protection of natural resources, and economic prosperity within and diversification of the area.
- The ability to reach the objectives will rely on an innovative and incentive based system that will not be dependent on a regulatory approach.
- There may be new sources of public revenues to support programs such as purchase of environmentally sensitive land and agricultural subsidies, but such funds will likely be limited and insufficient to accomplish all natural resource protection or agricultural viability goals.

**Primary Tools to Test:**

- Big Cypress Area of Critical State Concern (BCACSC) Regulations
- Transfer of rights through a credit overlay system
- Sending and receiving area criteria
- Natural Resource Protection Area (NRPA) guidelines
- Private ownership incentives
- Public acquisition techniques
- Clustering
- Open space ratios
- Preservation techniques
- Environmental design
- Conservation easements and incentives
- Economic and tax incentives
- Mixed uses
- Best management practices (BMP)
- Wildlife corridors and flow ways
- Rural villages
- Flexible regulations and creative community planning
- Design guidelines
- Economic diversification tools

**Primary Strategies:**

- Stewardship sending areas will be designated based on the characteristics of the land, and there may be different categories of sending areas.
- The Big Cypress Area of Critical State Concern (BCACSC) within the Study Area will be a sending area.
- Natural Resource Protection Areas (NRPAs) will be sending areas.
- BCACSC lands and NRPA lands are likely to remain substantially in private ownership.
- Techniques such as conservation easements and stewardship agreements used in conjunction with the stewardship credit system will be used to protect environmental resources.
- Permitted water retention areas will continue to function for this purpose, serving both existing and new uses.
- Water retention areas may be designated as sending areas or rights may be clustered onto adjacent properties that they serve.

- Stewardship credits will be variable. For sending areas variation may be based on level of rights to be eliminated from the sending land, the benefit of the remaining use, and the environmental value of the land. For receiving areas, variation may be based on location, incentives for economic diversification, and other factors.
- Receiving areas will be designed so that incompatible land uses will be directed away from critical habitat.
- Receiving areas will be designed so as to discourage urban sprawl as it is defined in Florida planning law.
- The receiving area designation will be implemented by criteria, as a function of zoning.

### Stewardship Credit Calculation

The credit analysis was based upon one possible scenario of credit generation. This analysis assumes that all areas within the Big Cypress Area of Critical State Concern (10,597 acres) will be used as sending areas and generate stewardship credits, with land scoring 1.2 and less on the natural resource scale retaining full agricultural use rights (AG 1) but eliminating residential and conditional uses and lands scoring higher than 1.2 retaining only passive agricultural grazing (AG 2) and conservation uses. All areas designated as interim NRPA are included in the sending area. The resulting credits are shown on the following table.

<b>Sub-Area</b>			<b>Stewardship Sending Area Scenario One Credit Generation</b>				<b>Stewardship Receiving Area Eligible Acreage</b>
<b>Value</b>	<b>Acres</b>	<b>Maximum Credits</b>	<b>Value</b>	<b>Acres</b>	<b>Maximum Credits</b>	<b>Credits Generated</b>	<b>Acres</b>
0.1	-	-	0.1	-	-	-	-
0.2	3	0.6	0.2	-	-	-	3
0.3	245	73.5	0.3	-	-	-	245
0.4	1,193	477.2	0.4	-	-	-	1,193
0.5	3,518	1,759.0	0.5	18	9.0	0.6	5
0.6	2,614	1,568.4	0.6	215	129.0	0.6	77
0.7	1,232	862.4	0.7	828	579.6	0.6	348
0.8	3,649	2,919.2	0.8	3,227	2,581.6	0.6	1549
0.9	1,151	1,035.9	0.9	1,151	1,035.9	0.6	622
1.0	1,155	1,155.0	1.0	929	929.0	0.6	557
1.1	817	898.7	1.1	132	145.2	0.6	87
1.2	379	454.8	1.2	163	195.6	0.6	117
1.3	884	1,149.2	1.3	828	1,076.4	0.9	969
1.4	1,021	1,429.4	1.4	1,021	1,429.4	0.9	1286
1.5	348	522.0	1.5	348	522.0	0.9	470
1.6	227	363.2	1.6	227	363.2	0.9	327
1.7	123	209.1	1.7	123	209.1	0.9	188
1.8	193	347.4	1.8	193	347.4	0.9	313
1.9	576	1,094.4	1.9	576	1,094.4	0.9	985
2.0	296	592.0	2.0	296	592.0	0.9	533
2.1	14	29.4	2.1	14	29.4	0.9	26
2.2	238	523.6	2.2	238	523.6	0.9	471
2.3	70	161.0	2.3	70	161.0	0.9	145
2.4	-	-	2.4	-	-	-	-
2.5	-	-	2.5	-	-	-	-
2.6	-	-	2.6	-	-	-	-
<b>19,946</b>	<b>17,625</b>		<b>10,597</b>	<b>11,953</b>		<b>9,076</b>	<b>9,349</b>

0.6 60% credit for retiring all land uses above Ag-Group 1

0.9 90% credit for retiring all land uses above Ag-Group 2

### **Alternative Blend of Stewardship Receiving Area Development**

An alternative blend of receiving area uses was prepared and reviewed by the Committee to demonstrate how the concepts of rural villages and hamlets might unfold in the sub area. The scenario included a rural residential village, a commerce village, and a hamlet. The following table summarizes the land use allocations in the horizon year of 2025 used for scenario one analysis. The commerce village is larger than the needs of the sub area population but was included because of the sub area's proximity to the Immokalee regional airport. It would provide a location for diversified high wage job employment opportunities for residents throughout the entire study area.

<b>Receiving Area Alternative</b>				
		<b>Acres</b>	<b>Units</b>	<b>Commercial sf</b>
<b>Rural Village</b>				
	Residential	351	1150	
	Commercial	11.5		115,000
	Civic, Cultural, Government	12.5		
	Park, Preserve Open Space	100		
	Roads, Utilities	25		
<b>Village Sub Total</b>		<b>500</b>	<b>1150</b>	<b>115,000</b>
<b>Commerce Village</b>				
	Residential	80	416	
	Commercial	165		1,650,000
	Civic, Cultural, Government	0		
	Park, Preserve Open Space	70		
	Roads, Utilities	35		
<b>Commerce Sub Total</b>		<b>350</b>	<b>416</b>	<b>1,650,000</b>
<b>Hamlet</b>				
	Residential	49	48	
	Commercial	0.5		4,800
	Civic, Cultural, Government	1.5		
	Park, Preserve Open Space	7.5		
	Roads, Utilities	1.5		
<b>Hamlet Sub Total</b>		<b>60</b>	<b>48</b>	<b>4,800</b>
<b>All Receiving Areas</b>				
	Residential	480	1614	
	Commercial	177		1,769,800
	Civic, Cultural, Government	14		
	Park, Preserve Open Space	177.5		
	Roads, Utilities	61.5		
<b>Total</b>		<b>910</b>	<b>1614</b>	<b>1,769,800</b>

### **Stewardship Receiving Area Land Conversions**

The following table indicates the current land cover of areas identified as stewardship receiving areas for scenario one. This represents the conversion of land required to accommodate the projected 2025 population and provide uses that will help to expand and diversify the economic base of the study area. Not all areas converted are required to be cleared, for example the receiving area blend allows for approximately 177 acres of park, preserve and open space.

<b>STEWARDSHIP RECEIVING AREAS - LAND USE CONVERSIONS</b>		
	PASTURE	512
	CITRUS	166
	WETLANDS	98
	NATIVE UPLAND	35
	FALLOW	32
	SPECIALTY	22
	BARREN	17
	WATER	17
	MISCL.	11
<b>TOTAL</b>		<b>910</b>

### **Baseline Reference Scenario Land Conversions**

The following table indicates the current land cover of areas identified as converting to residential subdivisions to accommodate the same projected 2025 population as shown in the stewardship scenario using current zoning and growth management plan policies.

<b>BASELINE REFERENCE SCENARIO - LAND USE CONVERSIONS</b>		
	PASTURE	2767
	CITRUS	2036
	NATIVE UPLAND	955
	ROW CROP	836
	WETLANDS	742
	SPECIALTY	196
	RANGELAND	181
	FALLOW	151
	TRANSPORTATION	142
	WATER	24
	URBAN	22
	BARREN	18
<b>TOTAL</b>		<b>8070</b>

### Comparison of Land Conversion

The following table compares the baseline and stewardship alternatives to show the relative reduction of land conversion required to accommodate the same projected 2025 population.

<b>COMPARATIVE LAND USE CONVERSION -BASELINE TO STEWARDSHIP</b>		<b>BASELINE</b>	<b>STEWARDSHIP</b>	<b>CHANGE</b>	<b>% REDUCTION</b>
	PASTURE	2767	512	-2255	81%
	CITRUS	2036	166	-1870	92%
	ROW CROP	836	0	-836	100%
	SPECIALTY	196	22	-174	89%
	RANGELAND	181	0	-181	100%
	FALLOW	151	32	-119	79%
<b>AGRICULTURE</b>		<b>6167</b>	<b>732</b>	<b>-5435</b>	<b>88%</b>
	NATIVE UPLAND	955	35	-920	96%
	WETLANDS	742	98	-644	87%
<b>NATURAL AREAS</b>		<b>1697</b>	<b>133</b>	<b>-1564</b>	<b>92%</b>
	TRANSPORTATION	142	0	-142	100%
	WATER	24	17	-7	29%
	URBAN	22	0	-22	100%
	BARREN	18	17	-1	6%
	MISCL	0	11	11	
<b>DEVELOPED</b>		<b>206</b>	<b>45</b>	<b>-161</b>	<b>78%</b>

Because the stewardship system is incentive based and flexible, sending and receiving areas are designated by criteria, suitability factors and demand. Therefore, the comparative analysis shown above is one example of myriad possible results. The actual generation of credits, selection of receiving areas and ultimate reduction of land conversion could be more or less than the totals shown above, but should be representative as an order of magnitude result.

### Findings of Scenario One Analysis

The sub-area comparative impact analysis for the scenario one stewardship concept compared to the baseline reference scenario projected to the horizon year of 2025 yielded the following findings:

#### **Natural Resource and Agricultural Land Use Allocations**

- The stewardship scenario will reduce the footprint of land required to accommodate the projected 2025 population by 89 % compared to the baseline reference scenario. Put another way, the baseline reference scenario consumes 9 times as much land as the stewardship scenario.
- The stewardship scenario results in 3,934 acres of land placed in passive agricultural and conservation stewardship (AG-2) as a result of 5713 stewardship credit transfers; the baseline reference has no provision or mechanism to accomplish this.

- The stewardship scenario results in 6,663 acres of land placed in agricultural stewardship (AG-1) as a result of 3363 stewardship credit transfers; the baseline has no provision for this.
- The stewardship scenario converts 901 acres from current uses to stewardship receiving areas; the baseline scenario requires 8,070 acres to be converted to accommodate a comparable population.
- The baseline reference scenario will involve the clearing and filling of approximately 1330 acres within residential sites (10% of each 5 acre site in the BCACSC and 20% of each site not in the BCACSC ). The stewardship villages accommodate the same residential population with 480 total residential acres, a reduction of 850 acres of residential clearing and filling.
- The stewardship scenario reduces agricultural land conversion by 88% or 5435 acres.
- The stewardship scenario reduces natural land conversion by 92% or 1564 acres. Although all natural areas converted under the baseline reference are not necessarily cleared, the construction of roads and drainage canals will serve to fragment natural areas within residential lots. Conversely, the clustering accomplished with the stewardship approach minimizes such fragmentation.
- There are 1829 acres of land designated as NRPA (interim) within the sub area. The stewardship natural resource index scores 1817 acres (99%) of interim NRPAs greater than 1.2, and under scenario one they will receive passive agricultural/ conservation designations in exchange for credit transfers.
- The stewardship natural resource index also scores approximately 1,500 acres of Special Study Area at greater than 1.2 and under scenario one they also receive passive agricultural/ conservation designations in exchange for credit transfers.

### **Public Services**

- The stewardship scenario provides approximately 200 acres for civic, cultural, parks, preserves, open spaces, and governmental facilities; the baseline scenario has no allocation, although civic-use land may be randomly developed throughout the area using the conditional use process.
- The stewardship scenario accommodates public and retail service sites within ¼ to ½ mile of village residents; the baseline reference range averages approximately 5 miles.

### **Utilities**

- The stewardship scenario will serve 97% of the 2025 population with central potable water and wastewater treatment utilities; the baseline reference scenario has no provision for central utilities, which would be cost prohibitive, and would therefore require 1614 wells and septic tanks.

### **Water Resources**

- The stewardship scenario will reduce the estimated impervious surfaces by approximately 5%. Impervious road surfaces in stewardship areas are substantially reduced, which is offset by additional impervious surfaces to accommodate civic, cultural and economic development uses.
- The stewardship scenario will reduce the demand for residential irrigation by approximately 68%.

- The stewardship scenario will allow for approximately 300,000 gallons per day of potential water re-use from the distribution of treated effluent.

### **Transportation**

- The stewardship scenario reduces the average trip length for all trips generated by rural land uses by an average of 1-2 miles.
- The stewardship scenario reduces the number of trips required to use the arterial/collector roadway network to satisfy shopping and personal business needs by 25%.
- The stewardship scenario reduces the number of employment trips required to use the arterial/collector roadway network by 27%.
- The stewardship scenario reduces the number of new roadways intersecting the arterial collector network from 14 to 6.
- The stewardship scenario reduces the number of new driveway connections intersecting the arterial collector network from 104 to 5.
- The stewardship scenario reduces the needed miles of local roadway construction from approximately 75 miles to approximately 8 miles.
- Land area cleared for new local roadways is reduced tenfold from approximately 458 acres to 44 acres.
- The average annual maintenance costs of local roads is estimated by County staff to be \$50,000 per mile; therefore the annual overall maintenance cost will be reduced by approximately \$3.3 million.

## **SECTION VII - SCENARIO TWO**

### **Scenario Two Overview**

A primary assumption of Scenario One was that public funds will be limited and insufficient to accomplish natural resource protection or agricultural viability goals, and therefore the system would be driven by market-based demand for acquisition of stewardship credits. Although this approach has the advantage of not being reliant on discretionary public funding, one disadvantage is the length of time it may take to realize a substantial transfer of credits from sending to receiving areas, as the market timing for the uses that will eventually demand stewardship credits is not yet known. The Committee chose to examine this in Scenario Two.

Building on the general concept of stewardship described in Scenario One, a blend of public funding, outside private funding sources such as private conservation organizations and private incentives could accelerate the protection of the highest priority natural resources and at the same time may reduce the total number of credits required to accomplish a balanced result. Therefore, the approach for Scenario Two was the addition of external public and private revenues to acquire conservation easements, stewardship credits, or land in order to meet the objectives of the Final Order. Scenario Two incorporated an analysis of the impacts of a significant infusion of public funding into the mix without quantifying the dollars that might be available, rather an assumption of land that might be affected by an acquisition program was made. This process tested the integrity of the overall system in light of what is today an unknown and unpredictable variable.

At our request, the Department of Community Affairs identified a range of State, Regional and Federal fund programs that may be available for conservation land acquisition, however, no estimate of potential yield was provided. The Florida Stewardship Foundation provided a more detailed analysis that was distributed to the Committee on January 28. The Stewardship Foundation estimated that local programs such as general obligation bonds and property taxes could generate \$2 million to \$25 million annually, State and Federal programs (not including the Farm Bill) could generate \$9.5 to \$12 million annually; and Farm Bill programs could generate \$7.5 to \$13 million annually. After review of this information, at its meeting on February 4, 2002 the Committee agreed to evaluate Scenario Two using the premise that some combination of these external funding sources could provide sufficient funds to acquire either the fee interest or development rights from all lands within the scenario sub area designated as Natural Resource Protection Areas (NRPA).

There are approximately 1,829 acres currently designated as NRPA in the study sub area. These lands generated 3,001 stewardship credits in Scenario One, which represents approximately 1/3 of the total 9,076 Stewardship Credits generated from the Big Cypress Area of Critical State Concern sending area. In Scenario One, it was determined that the projected 2025 population could be accommodated within a receiving area of approximately 910 acres using the suitability factors and rural design guidelines, rather than the 8,070 acres required in the baseline reference scenario. The number of stewardship credits generated in the Scenario One analysis was sufficient to implement the receiving area uses, with a likely surplus of approximately 10%. Scenario Two was designed to generate an equal number of stewardship credits as Scenario One, so that the relative impact of public funding can be compared.

## **Scenario Two Results**

In Scenario Two, through the application of external funding, the NRPA becomes a preserve area with a conservation easement that precludes conversion to new uses. Potential NRPA based Stewardship Credits would be acquired and eliminated as a result of the purchase. To replace these credits, the remaining non-NRPA lands in the Big Cypress Area of Critical State Concern (ACSC) become sending areas falling into two groups. The first group includes lands that currently have agricultural group 1 (Ag-1) uses such as row crops, citrus, and specialty farming (2,530 acres). The second includes lands that currently have agricultural group 2 (Ag-2) uses such as pastures and rangelands (6,238 acres). In each case, we projected stewardship credits based on the natural resource index multiplied by the factor for removal of all layers of use above the current use.

For example, in return for credits, Ag- 1 landowners choose to eliminate the ability to convert to residential and conditional uses, while Ag- 2 landowners choose to eliminate the ability to convert from pastures to group 1 agriculture and residential/conditional uses. Scenario Two therefore generally mirrors the current use within the ACSC, and as a result generates a total of 7,143 Stewardship Credits. These same lands generated 6,075 credits in Scenario One. The increase in credits is the result of more acres being reduced to the Ag- 2 level. To then generate 1,933 Stewardship Credits to fill the remaining credit shortfall, we have designated 2,369 acres of the highest natural resource scored land outside of the ACSC as sending areas, also at the Ag- 2 level. These lands currently are predominantly wetlands within permitted agricultural water retention areas and both natural uplands and improved pastures used for cattle grazing, compatible uses that can be retained under the Stewardship program.

The combination of these enhanced levels of environmental protection replace the NRPA based stewardship credits. The significant finding is that the externally funded acquisition of 1,829 acres of NRPA leverages the additional protection of 2,369 acres of private land outside of the ACSC through the stewardship program, and increases the amount of total land in the sub area protected at the Ag-2 conservation level by 6,471 acres.

## **Scenario Two Benefits**

The analysis demonstrates that blending of public and privately funded acquisition together with the incentive based stewardship program can compliment each other to achieve a greater level of environmental protection and agricultural sustainment while allowing for a sufficient level of land conversion to accommodate the future population and enable economic diversification. A second potential benefit is the acceleration of NRPA protection. In Scenario One, sufficient receiving area demand for 3001 stewardship credits is needed before the NRPA is fully protected as a sending area. As the NRPA generates approximately 1/3 of the total Stewardship Credits, it is reasonable to assume that at least 1/3 of the time between now and the horizon year would also be required to absorb these credits, or approximately 8-9 years. With external funding and a willing seller program, acquisition could be implemented as soon as funds are allocated. The results would then be both an accelerated protection program and more than doubling of the protected area within the interim time frame.

The following tables compare both acreage and stewardship credits for Scenarios One and Two.

<b>Land Use Category</b>	<b>Scenario One Acres</b>	<b>Scenario Two Acres</b>
NRPA Public Funded Preservation	0	1829
NRPA Stewardship Conservation	*1829	0
ACSC (Non-NRPA) Ag-1	6632	2530
ACSC (Non-NRPA) Ag-2 Conservation	2136	6238
Non-ACSC Ag-2 Conservation	0	2369
Receiving Areas	910	910
Lands Unaffected	8439	6070
Sub-Area Total Acres	19946	19946
<b>Total NRPA and Ag-2 Conservation</b>	<b>3965</b>	<b>10436</b>

<b>Sending Area Category</b>	<b>Scenario One Credits</b>	<b>Scenario Two Credits</b>
NRPA Public Funded Preservation	0	0
NRPA Stewardship Conservation	3001	0
ACSC (Non-NRPA) Ag-1	3342	1208
ACSC (Non-NRPA) Ag-2 Conservation	2733	5935
Non-ACSC Ag-2 Conservation	0	1933
<b>Sub-Area Total Credits</b>	<b>9076</b>	<b>9076</b>

\*The 1829 acres of NRPA Stewardship Conservation consists of 1798 acres at .9 index (Ag-2) and 31 acres @ .6 index (Ag-1).

## **SECTION VIII - SCENARIO THREE**

### **Scenario Three Overview**

The third scenario added several new and expanded tools to the prior scenarios that foster economic diversification through incentives for targeted industries, and direct available funding for infrastructure into preferred areas. Targeted areas are those areas that meet the greatest range of Receiving Area suitability factors. Focusing public investment into these areas and conversely directing public investment away from areas that are not suitable will make such areas more attractive for private investment from a market perspective.

Scenario Three also incorporated a number of changes to the Natural Resource Index Factors and introduced the concept of separate stewardship areas for flow ways, habitat and water retention. Additional research and analysis was performed in order to establish boundaries for these stewardship areas, replacing the original Interim NRPA and Special Study Areas.

Using best available information and analysis, the mapping of natural resource areas were refined and illustrated as flow ways (FSAs) and listed species habitats (HSAs). These areas blend with Water Retention Areas (WRAs) and other land within the ACSC to meet the environmental objectives of the Final Order.

At the March 6 and 18, 2002 meetings, the Oversight Committee recommended that Scenario Three retain the incentive-based Rural Stewardship principles from scenario one, the public and private funding from scenario two, and include additional tools and techniques summarized as follows based on public participation:

- An incentive-based plan to promote the use of Best Managements Practices (BMPs) for agriculture (to be included in Goals, Objectives and Policies in Growth Management Plan text).
- Programs that explore/foster alternative agricultural uses and practices, and explore local, state and federal funding support for such programs (to be included in Goals, Objectives and Policies in Growth Management Plan text).
- Policies that incorporate habitat protection planning for agriculture (new Flow way Stewardship Area and Habitat Stewardship Area categories and included in Goals, Objectives and Policies in Growth Management Plan text).
- Identify and map the highest value natural resource areas (New FSA, HSA and WRA categories).
- Establish appropriate buffers adjacent to NRPA (Flow ways) and identify allowable development in these buffer areas (new HSA and WRA categories coupled with Goals, Objectives and Policies in Growth Management Plan text).
- Develop incentives for restoration and enhancement of impacted lands within NRPA and adjacent buffer areas (new FSA and HSA categories; new Natural Resource Index scoring; Goals, Objectives and Policies in Growth Management Plan text).
- Identify appropriate locations for wildlife and flowway corridors and develop preservation incentives (new FSA, HSA and WRA categories; new Natural Resource Index scoring; Goals, Objectives and Policies in Growth Management Plan text).
- Promote economy diversification with incentives for ecotourism, policies to prioritize public infrastructure improvements in preferred or “targeted” areas, and incentives for applicable Smart Growth and Community Character principles (to be included in Goals, Objectives and Policies in Growth Management Plan text).

### **Economic Diversification Strategies:**

GMP goals, objectives and policies will be included that foster economic diversification through incentives for targeted industries, and by directing available funding for infrastructure into preferred areas. Targeted areas will be those areas that meet the greatest range of Receiving Area suitability factors previously identified. Targeting public investment into these areas and conversely directing public investment away from areas that are not suitable will make such areas more attractive for private investment from a market perspective. Policies will help to direct development away from more sensitive Flow way and Habitat Stewardship Areas and toward the targeted receiving areas, which will expedite the utilization of the Rural Stewardship Program.

### **Natural Resource Protection Strategies:**

Mapping areas of highest ecological value using the best available data and analysis established in stage one of the Immokalee Area Study has led to the mapping of FSAs, HSAs, and WRAs (Appendix "G", Overlay Map). Refinements to the Natural Resource Stewardship Index were included to promote the utilization of the private stewardship incentive program by focusing on natural resource values. By identifying areas that have the most significant natural resource value as habitat for listed species and for maintaining or enhancing the natural hydrologic regime in flow ways, available funding for easement or fee simple acquisition can be targeted to those areas and the benefits derived from Rural Stewardship Credits can be leveraged. Conversely, directing public investment into those areas that are most suitable for development will promote the utilization of Rural Stewardship credits in such areas.

The Flow Way Stewardship Areas (FSAs) were identified as those topographically interconnected areas where the depth and duration of the seasonal high water table is sufficient to maintain surface water flow for several months per year on average. These areas were delineated based upon two complementary data sets: the Natural Soil Landscape Position hydric soil groupings (SFWMD, 2000), and the landcover (FLUCCS) maps produced for the Stage 1 study. These two data sets correlated very closely in defining the major regional flow ways. The FSA map is consistent with SFWMD publications such as the Lower West Coast water Supply Plan, the Big Cypress Basin Management Plan, and the Big Cypress Basin Hydrologic Model (all available at [www.sfwmd.gov](http://www.sfwmd.gov)).

The Habitat Stewardship Areas were defined primarily by spatial patterns of landcover/land use as reflected by FLUCCS maps, Florida panther radiotelemetry data points, and other listed species occurrence points. The goal was to create extensive, inclusive, contiguous areas of the landscape that are dominated by natural cover, which would not only provide important habitat functions for listed species but would also allow wildlife movement across the landscape. In some areas, significant areas of active agricultural lands were included with the HSAs in order to maintain large areas of contiguous habitat and the existing matrix of land uses. In other areas, smaller HSAs were delineated to be contiguous with FSAs and WRAs, which had the effect of widening existing habitat corridors. Particular attention was paid to the Florida panther, because accommodating the habitat and movement needs of the panther addresses the needs of many other animal and plant species. The largest single delineations of HSAs are contiguous with established conservation lands such as the Florida Panther National Wildlife Refuge and Okaloacoochee Slough State Forest. In addition, HSAs were designed where possible to be contiguous with FSAs and existing water retention areas (WRAs).

Interim NRPA and Special Study Areas (SSAs) were delineated on maps and accepted by DCA in 1999. The FSA, HSA, and WRA designations, defined by the methodologies summarized above, replace the interim NRPA designation and accomplish the analysis needs for the SSAs. As defined in the “Growth Management Plan” section of this report, the new designations provide specific protections for hydrologic and biologic resources of the study area. The FSA, HSA, and WRA designations were separated to acknowledge that the primary natural resource value of these areas may differ (e.g., flow ways versus habitat outside of flow ways), and that growth amendments may be tailored to issues specific to the primary natural resource (e.g., water quantity and quality may be the highest priority for FSAs, but not in HSAs).

The combined FSA, HSA, and WRA designations account for significantly more land area within the study area than the combined interim NRPA and SSA total land area. These designations, based upon the updated data sets compiled during Stage 1, also effectively target natural resource protection. As one example, the interim NRPA and SSA designations captured 80 percent (to the nearest one percent) of panther radiotelemetry points within the overall study area. In comparison, the new designations capture 91 percent of the radiotelemetry points. Less than half of this percentage difference is accounted for by an increase in designated land area, illustrating that the higher data quality and GIS capabilities facilitated the development of effective natural resource protection strategies.

The following general policies describe how alternative natural resource protection strategies are integrated into the rural stewardship process for scenario three. The new overlay classifications of Flow way Stewardship Areas and Habitat Stewardship Areas replace the former designations of interim NRPA and special study areas.

- Wetland flow ways are mapped as Flow way Stewardship Areas (FSAs) on the Rural Lands Stewardship Overlay Map.
- Natural habitats are mapped as Habitat Stewardship Areas (HSAs) on the Rural Lands Stewardship Overlay Map.
- Water retention areas are mapped as Water Retention Areas (WRAs) on the Rural Lands Stewardship Overlay Map.
- Within the Stewardship Overlay System, FSAs and HSAs are incentivised as Stewardship Sending Areas (SSAs), and are precluded from being Stewardship Receiving Areas (SRAs).
- WRAs may also be sending areas and will continue to be used for water retention in support of current and future uses.
- Residential uses would be eliminated in FSAs and HSAs when a property owner participates in the stewardship program in exchange for compensation to that owner. Other land use layers may also be eliminated in exchange for compensation. Compensation to the property owner shall occur through one of the following mechanisms: creation and transfer of Stewardship Credits, acquisition of conservation easements, acquisition of less than fee interest in the land, or through direct acquisition of the property through a willing seller program.

- Should the County elect to acquire Stewardship Credits through a publicly funded program, the County shall establish a Stewardship Credit Trust to implement the acquisition and holding of credits until such time as the credits are sold or otherwise used to implement uses within Stewardship Receiving Areas.

### **Scenario Three Results**

In Scenario Three, similar to Scenario Two, we assume that through the application of external funding, the Flow way Stewardship Areas (FSAs) receive a conservation easement that precludes conversion to new uses. Potential FSA Stewardship Credits (1967 credits) would be eliminated as a result of external funding. As an alternative, if external funding is not available, these credits could be used to support receiving area uses. HSAs and WRAs are included as sending areas. In each case, projected stewardship credits are based on the natural resource index multiplied by the factor for removal of all layers of use above the current use. Lands in the Big Cypress Area of Critical State Concern (ACSC) not otherwise classified generate additional credits to balance the demand for receiving areas. The tables below illustrate the results:

<b>LAND ACREAGE</b>	<b>Scenario One</b>	<b>Scenario Two</b>	<b>Scenario Three</b>
NRPA Public Funded Preservation	0	<b>1829</b>	0
NRPA Stewardship Conservation	<b>1829</b>	0	0
Flow way Stewardship Areas (FSA)	0	0	<b>1295</b>
Habitat Stewardship Areas (HSA)	0	0	<b>5416</b>
Water Retention Areas (WRA)	0	0	<b>1681</b>
ACSC Ag-1	<b>6632</b>	<b>2530</b>	<b>3235</b>
ACSC Ag-2	<b>2136</b>	<b>6238</b>	<b>507</b>
Non-ACSC Ag-2	0	<b>2369</b>	0
Receiving Areas	910	910	910
Lands Unaffected	8439	6070	6902
Sub-Area Total Acres	19946	19946	19946
<b>Total Stewardship Protection</b>	<b>10597</b>	<b>12966</b>	<b>12134</b>

<b>CREDIT GENERATION</b>	<b>Scenario One</b>	<b>Scenario Two</b>	<b>Scenario Three</b>
NRPA Public Funded Preservation	0	0	0
NRPA Stewardship Conservation	3001	0	0
FSA (1967 credits retired via purchase)	0	0	0
HSA @ .9	0	0	4449
HSA @ .6	0	0	943
WRA @ .9	0	0	1913
ACSC Ag-1 @ .6	3342	1208	1397
ACSC Ag-2 @ .9	2733	5935	339
Non-ACSC Ag-2	0	1933	0
<b>Sub-Area Total Credits</b>	<b>9076</b>	<b>9076</b>	<b>9041</b>

### **Scenario Three Benefits:**

Scenario three adds several new strategies to the Stewardship System. Using best available information and analysis, the mapping of natural resource areas are refined and illustrated as flow ways (FSAs) and listed species habitats (HSAs). These areas blend with Water Retention Areas (WRAs) and other land within the ACSC to meet the environmental objectives of the Final Order. The analysis demonstrates that blending of public and privately funded acquisition together with the incentive based stewardship program compliment each other to achieve a greater level of environmental protection and agricultural sustainment while allowing for a sufficient level of land conversion to accommodate the future population and enable economic diversification. The same benefits result from external funding; with such funding and a willing seller program, acquisition of Flow ways could be implemented as soon as funds are allocated. Stewardship Receiving Areas are unchanged from prior scenarios. This scenario strikes the best balance of strategies to meet the overall objectives of the Study.

## **SECTION IX - RURAL LAND STEWARDSHIP**

### **Stewardship Credit Worksheet**

In order to merge the land use layer credit value concept with the natural resource index value concept, a worksheet was developed to build and test the application. As shown on Appendix "H", the Stewardship Credit Worksheet combined the Natural Resource Index factors with the Land Use Layers to generate stewardship credit value for each layer. In exchange for retiring one or more land use layers from the land, a certain number of stewardship credits accrue to the landowner. With adequate incentives, a voluntary application would allow the landowner to place all or a portion of his land in a state of natural resource conservation or agricultural preservation and in exchange, receive credits that would allow compact and sustainable rural development to occur on other portions of his land. In a properly structured program, the credits could be sold or transferred to other lands within the study area.

### **Stewardship Credits vs. Transfer of Development Rights (TDRs)**

Superficially, the Stewardship Credit program may seem like a traditional TDR approach, however there are substantial differences between the two concepts. A TDR system generally establishes a uniform transfer value, usually of a number of dwelling units per acre, and sets up the mechanism for the movement of those units from one parcel to another. The Stewardship Credit system does not establish a uniform value for each parcel (or acre) because it recognizes that lands have different qualities and values.

The Stewardship Credit system establishes numerical indexes that can be customized to a specific area or region and calibrated and fine-tuned as circumstances change over time. More importantly, unlike TDRs that are simply residential dwelling units moving from one parcel to another, the application of Stewardship Credits to rural receiving lands is flexible and can be tailored to ensure an appropriate and sustainable land use mix. As an example, credits yield not only dwelling units, but also the supporting infrastructure, commercial uses, civic and cultural uses and open space land uses that make compact rural development sustainable within Stewardship Receiving Areas. Within Stewardship Receiving Areas, variation may be based on location, incentives for economic diversification, and other suitability factors. Stewardship Receiving Areas also accommodate and facilitate the implementation of innovative and flexible planning strategies designed so that incompatible land uses are directed away from sending area listed species habitat.

### **Stewardship Sending Areas and Stewardship Receiving Areas**

The Collier County Rural Stewardship Program has two primary designations, Stewardship Sending Areas (SSAs), and Stewardship Receiving Areas (SRAs). The SSAs are created from lands that are to be kept in permanent rural, agricultural or conservation uses. When a property owner elects to designate their property as a SSA, certain uses are eliminated from the property in exchange for Stewardship Credits. The greater the number of uses eliminated from the property, and the higher the natural resource value or public benefit of the land, the greater the number of Stewardship Credits generated. The elimination of all property use rights and corresponding transfer of Stewardship Credits results in the preservation of the land for natural resource conservation.

As stated earlier, some lands enjoy a higher degree of natural resource quality than others. Some lands are more suitable for conversion to rural development than others. In scenario one, all lands could be either SSAs or SRAs. In scenario three, a mandatory sending area approach was included for flow ways and habitat areas. Stewardship Receiving Areas are established based on a set of criteria or suitability factors. Although SRAs are not delineated, the compact rural development characteristics of receiving areas will consume less than 10% of the potential area, and a finite limit is inherently established by the system, leaving the remaining lands in either natural resource conservation or rural/agricultural preservation.

SRAs would be the target for future rural development strategies as indicated by the Collier County land use projections. Instead of the traditional single-family 5-acre tract development that is characteristic of the conversion of agricultural lands to residential uses in the Rural Fringe, a more sustainable, compact mixed-use development pattern was envisioned for the future of the Rural Lands. Following extensive research, a variety of rural land use development patterns were examined. A set of development characteristics were created for three rural land use patterns, Towns, Villages, and Hamlets. A fourth land use pattern, Commerce Village, combined the rural Village concept with an expanded commercial/industrial component.

The Residential Receiving Area Characteristics, shown in Appendix "I", are examples of the levels of individual land use components that, when put together in a compact and planned pattern, yield a sustainable development that does not promote sprawl or contribute to the premature conversion of agricultural lands. These parameters have been used consistently throughout the study in all three scenarios, and are the basis for the comparison of the various scenarios against the Baseline Reference (5-acre lot development within the current land use regulatory structure).

### **Credit Exchange Rate Methodology**

In order to convert stewardship credits into rural development entitlements, exchange rates are needed. Typically, separate exchange rates would be developed for residential, commercial, recreational, etc., land uses. Another approach developed by the study team that worked well in conjunction with and supported the compact and sustainable rural development strategies involved developing a single exchange rate that converted credits to gross "acres" of sustainable development rather than to dwelling units or commercial square footage. By quantifying the rural development characteristics into gross acreage that would include net land use acres (residential, commercial, etc.) and open spaces, infrastructure, public facilities, etc., a single exchange rate accommodates all of the necessary planning components to ensure a compact and sustainable rural development opportunity.

The calculation of the appropriate exchange rate involved the use of a reasonable maximum (referred to hereafter as the "peak") number of total credits that could be generated by the stewardship programming, assuming that some levels of agriculture would remain on lands that were suitable. It unrealistic to expect that all land use entitlements would be retired from every Sending Area acre, so the maximum number of credits possible must be calibrated to a more reasonable expectation. To that end, all credit generation calculations (those credits actually being transferred to receiving lands) were based upon either retention of agriculture rights (AG-1 & AG-2). Using the credit worksheet methodology, credits from lands with AG-1 were factored by .6 (60% of the maximum allowed credits are actually generated for transfer). Credits from lands that retained only AG-2 uses were factored by .9, so that 90% of the maximum credits are generated for transfer to Receiving Areas. This process results in an estimated peak "generated" credit tabulation (see Appendix "J"). A summary of the generated credits follows:

	<b>Acres</b>	<b>Credits</b>	<b>@ Rate(s)</b>	<b>Credits per Acre</b>
<b>FSA</b> s	31,361	48,257	.6 & .9	1.54
<b>HSAs</b>	35,166	37,706	.6 & .9	1.07
<b>WRAs</b>	18,236	25,394	.9	1.39
<b>ACSC Ag-1 &amp; 2 (NOC)</b>	15,183	6,605	.6 & .9	0.44
<b>ACSC Non-Ag (NOC)</b>	5,809	3,488	.6	0.60
<b>Sub-Totals</b>	<b>105,755</b>	<b>121,449</b>		1.15
<b>Ag-1 &amp; 2 (NOC) [Ag-Preserves]</b>	63,042	9,644	.6 & .9	0.15
<b>Non-Ag (NOC)</b>	13,534	5,816	.6	0.43
<b>Study Area (Privately Held)</b>	<b>182,331</b>	<b>136,909</b>	Total credits available	

Using the current zoning entitlement of 1 dwelling per 5-acres on A-Agriculture zoned land as a control total, the maximum number of dwelling units that could be constructed on the 182,331 acres of privately held land would be 36,466 dwelling units. Using an average gross density for compact rural development of 2.17 dwelling units per gross acre, consistent with the Rural Development Characteristics guidelines discussed previously, only 16,805 acres would need to be set aside for the buildout density in compact rural development as opposed to accommodating that same number of units on 182,331 acres of 5-acre home sites. The remaining step in the calculation process involves eliminating the credits for the number of acres to be used as Receiving Lands (16,805 X .15 credits per acre = 2,521 credits). The net result is 134,388 credits generated for the rural compact development of 16,805 acres, resulting in an exchange rate of 8.0 Sending Area credits per acre of Receiving Area land.

As demonstrated above, the process yields the assumed number of rural development acres that are eligible to become designated Receiving Areas based upon the estimated peak number of credits generated by Sending Areas. It is possible that fewer number of credits will actually be generated, as some landowners may choose to retain more rights on their land, yielding a lower number of acres available for rural development (example: 120,000 credits generated ÷ 8 credits per acre = 15,000 acres of rural development).

In the 2025 Horizon Framework analysis, the 14,720 dwelling units predicted by Collier County would occupy 6,783 acres. At 8 credits per acre, 54,405 stewardship credits would be needed to accommodate the expected growth.

### **Land Conservation**

It is important to understand the important land conservation features of the Rural Lands Stewardship Overlay system. Inherent in the process is conservation/preservation of both high-quality natural resource lands as well as productive agricultural resource lands. This is done through two means; 1) the primary conservation achieved by establishing SSAs, and 2) secondarily by reductions in land use consumed for rural development (SRAs).

Following are several key comparisons that demonstrate the value of the Rural Lands Stewardship Overlay program.

**Summary Comparisons**

5.29	Acres of FSA @ avg.	1.54 credits per acre will generate	<b>8.1</b>	Credits
7.60	Acres of HSA @ avg.	1.07 credits per acre will generate	<b>8.1</b>	Credits
<b>8.1</b>	Credits will allow 1 Acre of Compact Rural Development or		2.17	DUs per gross acre
5.29	Acres of FSA Conservation = 1 Acre of Compact Rural Development			
7.60	Acres of HSA Conservation = 1 Acre of Compact Rural Development			
2.17	DUs per gross acre average for 1 acre of Compact Rural Development			
5	Acres per DU for conventional 1 DU per 5 acre rural development			
10.85	Acre in conventional 1 DU per 5 acre rural development to accommodate the same number of units			
5.29	Acres of FSA Conservation for 1 Acre of Compact Rural Development			
9.85	Acres conserved; saved from premature conversion when 1 acre compact rural development replaces conventional rural development patterns			
15.14	Total acres conserved (primary and secondary) for each acre of Compact Rural Development using FSA credits			
7.60	Acres of HSA Conservation for 1 Acre of Compact Rural Development			
9.85	Acres conserved; saved from premature conversion when 1 acre compact rural development replaces conventional rural development patterns			
17.45	Total acres conserved (primary and secondary) for each acre of Compact Rural Development using HSA credits			

In the Habitat Stewardship Area example, a total of over 17 acres of high-quality native habitat and agricultural resources are conserved in exchange for 1 acre of compact rural development. The total conservation effect is significant when both primary and secondary benefits are considered.

### **Final Analysis**

In the final analysis, the Stewardship Overlay concept of scenario three incorporated all of the functional features of the previous two scenarios. The testing methodology was then applied to the entire 195,000-acre study area. After removing the publicly held lands and Lake Trafford from the analysis, a final Natural Resource Index Analysis of each privately held acre was performed (See Appendix "K"). Tabulation of the data quantified the results allowing conclusions to be reached concerning the application, performance and success of the proposed system.

The results revealed that the incentive-based stewardship program fulfills all Final Order objectives. Approximately 85,000 acres of the 182,300 acres of privately held lands are delineated as Flow Way, Habitat and Water Retention Stewardship Areas. Approximately 21,000 acres of ACSC land are able to generate credits as SSAs and retain current agriculture activities, and approximately 60,000 acres of non-ACSC land can also retain its agriculture designation. Approximately 16,800 acres are required for compact rural development. In contrast, the Baseline Reference with interim NRPA's conserved approximately 40,900 acres and, except for lands in the ACSC, offered little or no protection for the 141,400 acres of agriculture lands that could otherwise be subject to conversion to non-agriculture uses.

The analysis demonstrated that blending public and privately funded acquisition with the incentive based stewardship program compliment each other and achieve a greater level of environmental protection and agricultural sustainability while allowing for a sufficient level of land to accommodate the future population and enable economic diversification.

## **SECTION X - GROWTH MANAGEMENT PLAN ELEMENT**

The Study provided the foundation for the implementation strategy. The Collier County Rural Lands Stewardship Area Overlay will be implemented through a new GMP element with the following Goals, Objectives and Policies that are consistent with the directive of the Final Order, and achieve the planning objectives as set forth by the Oversight Committee.

### **Collier County Rural Lands Stewardship Area Goals, Objectives and Policies Approved by the Rural Area Assessment Oversight Committee April 29, 2002**

#### **Goal**

Collier County seeks to address the long-term needs of residents and property owners within the Immokalee Area Study boundary of the Collier County Rural and Agricultural Area Assessment. Collier County's goal is to protect agricultural activities, to prevent the premature conversion of agricultural land to non-agricultural uses, to direct incompatible uses away from wetlands and upland habitat, to enable the conversion of rural land to other uses in appropriate locations, to discourage urban sprawl, and to encourage development that utilizes creative land use planning techniques.

#### **Objective**

To meet the general goal described above, Collier County's objective is to create an incentive based land use overlay system based on the principals of rural land stewardship as defined in Chapter 163.3177(11), F.S. The Policies that will implement this Goal and Objective are set forth below in groups relating to each aspect of the Goal. Group 1 policies describe the structure and organization of the Collier County Rural Lands Stewardship Area Overlay. Group 2 policies relate to agriculture, Group 3 policies relate to natural resource protection, and Group 4 policies relate to conversion of land to other uses and economic diversification. Group 5 are regulatory policies that ensure that land that is not voluntarily included in the Overlay by its owners shall nonetheless meet the minimum requirements of the Final Order pertaining to natural resource protection.

#### **Group 1 Collier County Rural Lands Stewardship Overlay Policies**

##### **Policy 1.1**

To promote a dynamic balance of land uses in the Collier County Rural Lands Stewardship Area that collectively contribute to a viable agricultural industry, protect natural resources, and enhance economic prosperity and diversification, Collier County hereby establishes the Collier County Rural Lands Stewardship Area Overlay (Overlay).

##### **Policy 1.2**

The Overlay includes innovative and incentive based tools, techniques and strategies that are not dependent on a regulatory approach, but will complement existing local, regional, state and federal regulatory programs.

##### **Policy 1.3**

This Overlay to the Future Land Use Map is depicted on the Stewardship Overlay Map (Overlay Map) and applies to all privately owned rural designated lands located within the Immokalee

Area Study boundary of the Collier County Rural and Agricultural Area Assessment referred to in the State of Florida Administration Commission Final Order No. AC-99-002. This area generally includes rural lands in northeast Collier County lying north and east of Golden Gate Estates, north of the Florida Panther National Wildlife Refuge and Big Cypress National Preserve, south of the Lee County Line, and south and west of the Hendry County Line, and includes approximately 195,846 acres (Overlay Area).

#### Policy 1.4

The Overlay does not change the underlying density, permitted uses and property rights of land within the Overlay Area, unless and until a property owner elects to utilize the provisions of the Overlay. It is the intent of the Overlay that a property owner will be compensated for the voluntary stewardship and protection of important agricultural and natural resources. Compensation to the property owner shall occur through one of the following mechanisms: creation and transfer of Stewardship Credits, acquisition of conservation easements, acquisition of less than fee interest in the land, or through other acquisition of land or interest in land through a willing seller program.

#### Policy 1.5

Permitted uses, density, intensity and other land development regulations assigned to land in the Overlay Area by the Collier County Growth Management Plan, Collier County Land Development Regulations and Collier County Zoning Regulations that were in effect prior to the adoption of Interim Amendments and Interim Development Provisions which imposed interim restrictions on the area referenced in Final Order AC-99-002, herein referred to as baseline standards, will remain in effect for all land not subject to the transfer or receipt of Stewardship Credits, except as provided for in Policies 5.1 and 5.3. No part of the Overlay program shall be imposed upon a property owner without that owners consent.

#### Policy 1.6

Stewardship Credits (Credits) are created from any lands within the Overlay Area that are to be kept in permanent agriculture, open space or conservation uses. These lands will be identified as Stewardship Sending Areas or SSAs. All privately owned lands within the Overlay Area are a candidate for designation as a SSA. Land becomes designated as a SSA upon petition by the property owner seeking such designation and the adoption of a resolution by the Collier County Board of County Commissioners (BCC), which acknowledges the property owners request for such designation and assigns Stewardship Credits or other compensation to the owner for such designation. Collier County will update the Overlay Map to delineate the boundaries of each approved SSA. Such updates shall be administrative and shall not require an amendment to the Growth Management Plan, but shall be retroactively incorporated into the adopted Overlay Map during the EAR based amendment process when it periodically occurs. Once land is designated as a SSA and Credits or other compensation is granted to the owner, no further increase in density or additional uses unspecified in the SSA agreement shall be allowed on such property.

#### Policy 1.7

The range of Stewardship Credit Values is hereby established using the specific methodology set forth on the Stewardship Credit Worksheet (Worksheet), incorporated herein as Attachment A. This methodology will also be adopted as part of the Stewardship Overlay District in the Collier County Land Development Code (LDC).

#### Policy 1.8

SSAs are differentiated based on the natural resource value of the land as measured by the Natural Resource Stewardship Index (Index) set forth on the Worksheet and by the uses remaining on the land following the transfer of Credits as described in the Land Use Stewardship Matrix (Matrix), incorporated herein as Attachment B.

#### Policy 1.9

Credits from any lands designated as SSAs, will be based upon the Natural Resource Index values in effect at the time of designation. Any change in the natural resource characteristics of land due to alteration of the land prior to the establishment of a SSA that either increases or decreases any Index Factor will result in an adjustment of the factor values and a corresponding adjustment in the credit value.

#### Policy 1.10

In SSAs, the greater the number of uses eliminated from the property, and the higher the natural resource value of the land, the higher the priority for protection, the greater the level of Credits that are generated from such lands, and therefore the greater the incentive to participate in the Overlay and protect the natural resources of the land.

#### Policy 1.11

Uses and activities allowed under agricultural zoning in the rural district are grouped together in one of eight separate layers in the Matrix. Each layer is discrete and can be selected for retention or removal by the owner, however layers shall be removed sequentially and cumulatively in the order presented in the Matrix, starting with the residential layer (layer one) and ending with the conservation layer (layer eight). If a layer is removed, all uses and activities in that layer are eliminated and are no longer available to the property owner. Each layer is assigned a percentage of a base credit in the Worksheet. The assigned percentage for each layer to be removed is added together and then multiplied by the Natural Resource Stewardship Index value on a per acre basis to arrive at a total Stewardship Credit Value of the land being designated as a SSA.

#### Policy 1.12

Credits can be transferred only to lands within the Overlay Area that meet defined suitability criteria, which are set forth in Policies 4.7 through 4.15. Such lands shall be known as Stewardship Receiving Areas or SRAs.

#### Policy 1.13

The procedures for the establishment and transfer of Credits and SRA designation are set forth herein and will also be adopted as a part of a Stewardship District of the LDC. The District will be adopted not later than six months after the date that the Overlay becomes effective.

#### Policy 1.14

Stewardship Credits will be exchanged for additional residential or non-residential entitlements in a SRA, as described in Policy 4.18.. Stewardship density and intensity will therefore differ from the baseline standard density of one unit per five acres and intensity that is assigned to the land by the Collier County Growth Management Plan (GMP).The assignment or use of Stewardship Credits shall not require a Growth Management Plan Amendment.

#### Policy 1.15

Any change in the residential density or non-residential intensity of land use on a parcel of land located within a SRA shall be specified in a resolution which reflects the total number of transferable Credits assigned to the parcel of land. Density and intensity within the Overlay Area shall not be increased beyond the density or intensity allowed under the baseline standards except through the use of the Overlay and Stewardship Credit System.

#### Policy 1.16

Stewardship Receiving Areas will accommodate uses that utilize creative land use planning techniques and Credits shall be used to facilitate the implementation of innovative and flexible development strategies described in Chapter 163.3177 (11), F.S.

#### Policy 1.17

Stewardship Credits may be transferred between different owners or utilized by a single owner (clustering), subject to compliance with all applicable provisions of these policies. All Credit transfers shall be recorded with the Collier County Clerk of Courts. A covenant or perpetual restrictive easement shall also be recorded for each SSA, where the credits have been transferred, running with the land in favor of Collier County and either the Department of Environmental Protection, Department of Agriculture and Consumer Services, South Florida Water Management District, or a recognized statewide land trust.

#### Policy 1.18

A blend of Local, State, Federal and private revenues, such as but not limited to Florida Forever, Federal and State conservation and stewardship programs, foundation grants, private conservation organizations, local option taxes, general county revenues, and other monies can augment the Stewardship program through the acquisition of conservation easements, Credits, or land that is identified as the highest priority for natural resource protection, including, but is not limited to, areas identified on the Overlay Map as Flow way Stewardship Areas (FSAs), Habitat Stewardship Areas (HSAs), Water Retention Areas (WRAs) and land within the Big Cypress Area of Critical State Concern (ACSC).

#### Policy 1.19

All land or easement acquisition programs that are intended to work within the Stewardship Overlay shall be based upon a willing participant/seller approach. It is not the intent of Collier County to use eminent domain acquisition within this system.

#### Policy 1.20

The County may elect to acquire Credits through a publicly funded program, using sources identified in Policy 1.18. Should the County pursue this option, it shall establish a Stewardship

Credit Trust to receive and hold Credits until such time as they are sold, transferred or otherwise used to implement uses within Stewardship Receiving Areas.

#### Policy 1.21

The County recognizes that there may be a lack of significant demand for Credits in the early years of implementation. To address this issue and to promote the protection of natural resources, the implementation of the Overlay will include an early entry bonus to encourage the voluntary establishment of SSAs within the Overlay Area. The bonus shall be in the form of an additional one half Stewardship Credit per acre of land designated as a FSA, HSA or WRA. The early entry bonus shall be available for three years from the effective date of the adoption of the Overlay District in the LDC, unless extended by the BCC.

#### Policy 1.22

A comprehensive review of the Stewardship Overlay shall be prepared for and reviewed by Collier County and the Department of Community Affairs upon the five-year anniversary of the adoption of the Overlay District in the LDC. The purpose of the review shall be to assess the participation in and effectiveness of the Overlay implementation in meeting the Goal, Objective and Policies set forth herein. The specific measures of review shall be as follows:

1. The amount and location of land designated as FSAs, HSAs, WRAs and other SSAs.
2. The amount and location of land designated as SRAs.
3. The number of Stewardship Credits generated, assigned or held for future use.
4. A comparison of the amount, location and type of Agriculture that existed at the time of the Study and time of review.
5. The amount, location and type of land converted to non-agricultural use with and without participation in the Stewardship program since its adoption.
6. The extent and use of funding provided by Collier County and other sources of Local, State, Federal and private revenues described in Policy 1.18.

### **Group 2 – Policies to protect agricultural lands from premature conversion to other uses and continue the viability of agricultural production through the Collier County Rural Lands Stewardship Overlay.**

#### Policy 2.1

Agriculture lands will be protected by creating incentives that encourage the voluntary elimination of the property owner's right to convert agriculture land to non-agricultural uses in exchange for compensation as described in Policy 1.4. The formula for determining the Stewardship Credit value is set forth in the Stewardship Credit Worksheet.

#### Policy 2.2

Agriculture lands protected through the use of Stewardship Credits shall be designated as Stewardship Sending Areas (SSAs).

#### Policy 2.3

By June 1, 2003, Collier County will establish an Agriculture Advisory Council comprised of not less than five nor more than nine appointed representatives of the agriculture industry, to advise the BCC on matters relating to Agriculture. The Agriculture Advisory Council (AAC) will work to identify opportunities and prepare strategies to enhance and promote the continuance, expansion and diversification of agriculture in Collier County. The AAC will also identify barriers to the continuance, expansion and diversification of the agricultural industry and will prepare recommendations to eliminate or minimize such barriers in Collier County. The AAC will also assess whether special exception standards for business uses related to agriculture should be

allowed under an administrative permit process subject to specific standards, and make recommendations to the BCC.

#### Policy 2.4

The BCC will consider the recommendations of the AAC and facilitate the implementation of strategies and recommendations identified by the ACC that are determined to be appropriate. By June 1, 2004, the BCC will adopt amendments to the Land Development Code that may be required to implement policies that support agriculture activities.

#### Policy 2.5

The Rural Lands Assessment has demonstrated that the issues and needs of rural Collier County are substantially different than those applicable to the coastal urban areas of the County. Collier County formerly had two planning advisory commissions, one for the coastal area (Coastal Area Planning Commission) and another for the rural area (Immokalee Area Planning Commission). In order to facilitate greater public participation of rural residents in the implementation of policies and standards applicable to both the Overlay Area and Immokalee, Collier County shall re-establish a rural area planning commission to serve as the local planning agency to the BCC for land use matters in the Overlay Area and the Immokalee Urban Area.

#### Policy 2.6

Since agriculture is such an important aspect of Collier County's quality of life and economic well-being, agriculture is a preferred activity in the Rural/Agricultural District and shall be protected from duplicative regulation. Collier County acknowledges and supports the Florida Right-to-Farm Act found at §823.14, F.S., and specifically § 823.14(6), F.S. which prohibits local regulation of bona fide agricultural activities where there are implemented best management practices in place.

#### Policy 2.7

Notwithstanding the special provisions of Policies 3.9, 3.10, and 3.11, nothing herein, nor in the implementing LDC District shall restrict lawful agricultural activities on lands within the Overlay Area that have not been placed into the Stewardship program by request of the property owner.

### **Group 3 – Policies to protect water quality and quantity and maintain the natural water regime, as well as listed animal and plant species and their habitats by directing incompatible uses away from wetlands and upland habitat through the establishment of Flow way Stewardship Areas, Habitat Stewardship Areas, and Water Retention Areas.**

#### Policy 3.1

Protection of water quality and quantity and the maintaining of the natural water regime shall occur through the establishment of Flow way Stewardship Areas (FSAs), as a tool within the Stewardship Overlay System. FSAs are delineated on the Rural Lands Stewardship Overlay Map and contain approximately 31,000 acres.

#### Policy 3.2

Listed animal and plant species and their habitats shall be protected through the establishment of Habitat Stewardship Areas (HSAs), as a tool within the Stewardship Overlay System. HSAs are delineated on the Rural Lands Stewardship Overlay Map and contain approximately 36,000 acres.

#### Policy 3.3

Further protection for surface water quality and quantity shall be through the establishment of Water Retention Areas (WRAs), as a tool within the Stewardship Overlay System. WRAs are delineated on the Rural Lands Stewardship Overlay Map and contain approximately 18,000 acres.

#### Policy 3.4

FSAs, HSAs, and WRAs are delineated on the Overlay Map based upon the best information available at the time of the Immokalee Area Study. FSA, HSA, and WRA boundaries are subject to review and refinement if more definitive scientific data is provided. Such refinements to the Overlay Map may be made at the request of a property owner and approved by the County Commission by resolution without amending the Growth Management Plan.

#### Policy 3.5

Within the Stewardship Overlay System, FSAs and HSAs shall be Stewardship Sending Areas, and shall be precluded from being Stewardship Receiving Areas. WRAs may be either SSAs or incorporated within SRAs subject to the limitations of Policy 3.16. Land becomes designated as a FSA, HSA or WRA upon petition by the property owner seeking such designation and the adoption of a resolution by the Collier County Board of County Commissioners (BCC), which acknowledges the property owners request for such designation and assigns Stewardship Credits or other compensation to the owner for such designation.

#### Policy 3.6

Residential uses and general conditional uses as listed in the Matrix will be eliminated in FSAs in exchange for compensation to the property owner as described in Policy 3.8. Other layers may also be eliminated at the election of the property owner in exchange for compensation.

#### Policy 3.7

Residential uses listed in the Matrix shall be eliminated in Habitat Stewardship Sending Areas in exchange for compensation to the property owner as described in Policy 3.8. Other layers may also be eliminated at the election of the property owner in exchange for compensation.

#### Policy 3.8

Compensation to the property owner shall occur through one of the following mechanisms: creation and transfer of Stewardship Credits, acquisition of conservation easements, acquisition of less than fee interest in the land, or through other acquisition of land or interest in land through a willing seller program.

#### Policy 3.9

Agriculture will continue to be an allowed activity within FSAs and HSAs, subject to the guidelines described in Policies 3.10 and 3.11 and based on group classification of Agricultural activities (Ag 1 and Ag 2) described in the Matrix.

#### Policy 3.10

The Ag 1 group includes row crops, citrus, specialty farms, horticulture, plant nurseries, improved pastures for grazing and ranching, aquaculture and similar activities, including related agricultural support uses. In existing Ag 1 areas within FSAs and HSAs, all such activities are permitted to continue, and may convert from one type of Agriculture to another and expand to the limits allowed by applicable permits. Once the Stewardship Overlay is utilized and an owner receives compensation as previously described, no further expansion of Ag 1 will be allowed in FSAs and HSAs beyond existing or permitted limits within property subject to a credit transfer.

#### Policy 3.11

Ag 2 includes unimproved pastures for grazing and ranching, forestry and similar activities, including related agricultural support uses. In existing Ag 2 areas within FSAs and HSAs, such activities are permitted to continue, and may convert from one type of Agriculture to another and expand to the limits allowed by applicable permits. Once the Stewardship Overlay is utilized and an owner receives compensation as previously described, no further expansion of Ag 2 or conversion of Ag 2 to Ag 1 will be allowed in FSAs or HSAs beyond existing or permitted limits within property subject to a credit transfer.

#### Policy 3.12

In certain locations there may be the opportunity for flow way or habitat restoration. Examples include, but are not limited to locations where flow ways have been constricted or otherwise impeded by past activities, or where additional land is needed to enhance wildlife corridors. Should a property owner of such land be willing to dedicate land for restoration activities, additional Stewardship Credits shall be assigned for restoration value on a case-by-case basis. The actual implementation of restoration improvements is not required for the owner to receive such credits and the costs of restoration shall be borne by the governmental agency or private entity undertaking the restoration. Should an owner also volunteer to undertake restoration improvements, this may be rewarded with additional Credits, other forms of compensation, or be addressed through public-private partnership agreement such as a developer contribution agreement or stewardship agreement between the parties involved.

#### Policy 3.13

Natural resources will be protected in the public and private conservation areas as identified on the Overlay Map in accordance with the conservation easements applicable to such properties.

#### Policy 3.14

Based on the data and analysis of the Study, FSAs, HSAs, and WRAs include the land appropriate and necessary to accomplish the Objective. To further direct other uses away from and to provide additional incentive for the protection, enhancement and restoration of the Okaloacoochee Slough and Camp Keais Strand, all land within 500 feet of the delineated FSAs that comprise the Slough or Strand that is not otherwise included in a HSA or WRA shall receive the same natural index score (.5) that a HSA receives if such property is designated as a SSA and retains only agricultural, recreational and/or conservation layers within the matrix.

#### Policy 3.15

Water Retention Areas (WRAs) as generally depicted on the Overlay Map have been permitted for this purpose and will continue to function for surface water retention, detention, treatment and/or conveyance, in accordance with the South Florida Water Management District (SFWMD) permits applicable to each WRA. WRAs can also be permitted to provide such functions for new uses of land allowed within the Overlay. WRAs may be designated as SSAs, and may be incorporated into a SRA master plan as described in Policy 4.5 to provide water management functions for properties within such SRA. WRA boundaries are understood to be approximate and are subject to refinement in accordance with SFWMD permitting.

#### Policy 3.16

During permitting to serve new uses, additions and modifications to WRAs may be required or desired, including but not limited to changes to control elevations, discharge rates, storm water pre-treatment, grading, excavation or fill. Such additions and modifications shall be allowed subject to review and approval by the SFWMD in accordance with best management practices. Such additions and modifications to WRAs shall be designed to ensure that there is no net loss of habitat function within the WRAs unless there is compensating mitigation or restoration in other areas of the Overlay that will provide comparable habitat function. Compensating mitigation or restoration for an impact to a WRA contiguous to the Camp Keais Strand or Okaloacoochee Slough shall be provided within or adjacent to that Strand or Slough.

### **Group 4- Policies to enable conversion of rural lands to other uses in appropriate locations, while discouraging urban sprawl, and encouraging development that utilizes creative land use planning techniques by the establishment of Stewardship Receiving Areas.**

#### Policy 4.1

Collier County will encourage and facilitate the establishment of uses that enable economic prosperity and diversification of the economic base of the rural area, development that utilizes creative land use planning techniques, and will encourage and facilitate a compact form of development to accommodate population growth by the establishment of Stewardship Receiving Areas (SRAs). Incentives to encourage and support the diversification and enhancement of the rural economy such as flexible development regulations, expedited permitting review, and targeted capital improvements shall be incorporated into the LDC Stewardship District.

#### Policy 4.2

All privately owned lands within the Overlay Area are a candidate for designation as a SRA, except land designated as a Flow way Stewardship Area, a Habitat Stewardship Area, or land already utilizing the Overlay that has been designated as a Stewardship Sending Area. Land proposed for SRA designation shall meet the suitability criteria described in Policies 4.7 through 4.14

#### Policy 4.3

Land becomes designated as a SRA upon petition by a property owner to Collier County seeking such designation and the adoption of a resolution by the Collier County Board of County Commissioners (BCC) granting the designation. The petition shall include a SRA master plan as described in Policy 4.5. The BCC shall approve the petition if it finds that the property owner's request for such designation is consistent with the policies of the Overlay, including required suitability criteria set forth herein, complies with the LDC Stewardship District, and that the applicant has acquired or will acquire sufficient Stewardship Credits to implement the SRA uses.

#### Policy 4.4

Collier County will update the Overlay Map to delineate the boundaries of each approved SRA. Such updates shall not require an amendment to the Growth Management Plan, but shall be retroactively incorporated into the adopted Overlay Map during the EAR based amendment process when it periodically occurs.

#### Policy 4.5

A master plan of each SRA will be prepared and submitted to Collier County as a part of the petition for designation as a SRA. The master plan will demonstrate that the SRA complies with all applicable policies of the Overlay and is designed so that incompatible land uses are directed away from wetlands and critical habitat identified as FSAs and HSAs on the Overlay Map. The master plan of the SRA will also be designed to discourage urban sprawl as it is defined in Florida planning law.

#### Policy 4.6

SRA characteristics are based upon innovative and flexible planning and development strategies described in Chapter 163.3177 (11), F.S. The residential community form includes, but is not limited to Towns, Villages and Hamlets. The commercial form includes, but is not limited to, town and village centers, commerce villages and smart parks. The characteristics of SRA Towns, Villages and Hamlets are set forth in Attachment C. Collier County may establish additional rural design forms, guidelines and standards within its LDC, and these policies shall not preclude the use of other forms not specified herein.

#### Policy 4.7

An individual SRA shall include not less than twenty acres and achieve a gross residential density of not less than one unit per two acres and not more than four units per acre. The location, size and density of each SRA will be determined on an individual basis during the SRA designation review and approval process.

#### Policy 4.8

An SRA may be contiguous to a FSA or HSA, but shall not encroach into such areas. A SRA may contain a WRA in accordance with Policy 1.11.

#### Policy 4.9

A SRA must contain sufficient suitable land to accommodate the planned development in an environmentally acceptable manner. To direct development away from wetlands and critical habitat; residential, commercial, institutional, civic and community service uses within a SRA shall be sited only on lands that receive a Natural Resource Stewardship Index value of 1.2 or less, and shall not be sited on land designated as a FSA, HSA or WRA.

#### Policy 4.10

A SRA will provide open space, water management and recreational lands adequate to serve the forecasted population and uses within the SRA. Open space, water management and recreational lands shall comprise not less than thirty five percent of the gross acreage of an individual SRA, and may include lands with Natural Resource Stewardship Index values of greater than 1.2.

#### Policy 4.11

The perimeter of each SRA shall be designed to provide a transition from higher density and intensity uses within the SRA to lower density and intensity uses on adjoining property. The edges of SRAs shall be designed to be compatible with the character of adjoining property. Techniques such as, but not limited to setbacks, landscape buffers, and recreation/open space placement may be used for this purpose. Where existing agricultural activity adjoins a SRA, the design of the SRA must take this activity into account to allow for the continuation of the agricultural activity and to minimize any conflict between agriculture and SRA uses.

#### Policy 4.12

Where a SRA adjoins a FSA, HSA, WRA or existing public or private conservation land delineated on the Overlay Map, best management and planning practices shall be applied to minimize adverse impacts to such lands. SRA design shall demonstrate that ground water table draw down or diversion will not adversely impact the adjacent FSA, HSA, WRA or conservation land. Detention and control elevations shall be established to protect such natural areas and be consistent with surrounding land and project control elevations and water tables.

#### Policy 4.13

Open space and recreational uses shall be used to provide a buffer within a SRA adjoining a FSA, HSA, or existing public or private conservation land delineated on the Overlay Map. Open space and recreational use contiguous to or within 300 feet of the boundary of the such areas may include: natural preserves, lakes, golf courses provided no fairways or other turf areas are allowed within the first 100 feet, passive recreational areas and parks, required yard and set-back areas, and other natural or man-made open space.

#### Policy 4.14

The SRA must have either direct access to a County collector or arterial road or indirect access via a road provided by the developer that has adequate capacity to accommodate the proposed development in accordance with accepted transportation planning standards.

#### Policy 4.15

An appropriate mix of commercial, recreational, and civic uses will be available to serve the daily needs of residents of a SRA. Depending on the size and scale of the specific SRA, as outlined in the Receiving Area Characteristic Table, such uses may be provided either within the SRA, elsewhere within the Overlay Area or within the Immokalee Urban Area.

#### Policy 4.16

A SRA shall have adequate infrastructure available to serve the proposed development, or such infrastructure must be provided concurrently with the demand. The level of infrastructure provided will depend on the type of development, in accordance with the Receiving Area Characteristic Table and accepted civil engineering practices.

#### Policy 4.17

The SRA will be planned and designed to be fiscally neutral or positive to the Collier County tax base at the horizon year based on a modified per capita cost/benefit fiscal analysis (Modified per capita cost/benefit fiscal analysis per Burchell et.al.,1994, Development Impact Assessment Handbook, ULI.). The BCC may grant exceptions to this policy to accommodate affordable housing, as it deems appropriate. Techniques that support fiscal self-sufficiency such as Community Development Districts shall be encouraged.

#### Policy 4.18

Eight Credits shall be required for each acre of land designated as a SRA. In order to promote compact, mixed use development and provide the necessary support facilities and services to residents of rural areas, the SRA designation entitles a full range of residential uses, accessory uses and associated uses that provide a mix of services to and are supportive to the residential population of a SRA, provided that such uses are contained within the SRA. Such uses shall be identified in the SRA master plan, and include but are not limited to schools (K-20), neighborhood and community parks, churches and other places of worship, civic and governmental buildings, libraries, neighborhood and community retail and office commercial uses, all types of recreational facilities and essential services.

**Group 5 - Policies that protect water quality and quantity and the maintaining of the natural water regime and protect listed animal and plant species and their habitats on land that is not voluntarily included in the Overlay and designated as a SSA by its owners.**

Policy 5.1

To protect water quality and quantity and the maintaining of the natural water regime in areas mapped as FSAs on the Overlay Map prior to the time that they are designated as SSAs under the Overlay, all residential uses and conditional uses allowed by the baseline standards referenced in Policy 1.5 shall be prohibited by Collier County through an amendment to the LDC. A property owner shall be entitled to receive compensation for the loss of these rights by voluntary participation in the Overlay or by the receipt of other compensation described in Policy 3.8.

Policy 5.2

To protect water quality and quantity and the maintaining of the natural water regime and to protect listed animal and plant species and their habitats in areas mapped as FSAs, HSAs, and WRAs on the Overlay Map that are within the ACSC, all ACSC regulatory standards shall apply, including those that strictly limit non-agricultural clearing.

Policy 5.3

To protect water quality and quantity and the maintaining of the natural water regime and to protect listed animal and plant species and their habitats in areas mapped as FSAs, HSAs, and WRAs on the Overlay Map that are not within the ACSC, if a property owner proposes to utilize such land for a non-agricultural purpose under the baseline standards referenced in Policy 1.5 and does not elect to use the Overlay, the following regulations are applicable, shall be incorporated into the LDC, and shall supercede any comparable existing County regulations that would otherwise apply. These regulations shall only apply to non-agricultural use of land prior to its inclusion in the Overlay system:

1. Site clearing and alteration shall be limited to 30% of the property and nonpermeable surfaces shall not exceed 50% of any such area.
2. Except for roads and lakes, any nonpermeable surface greater than one acre shall provide for release of surface water run off, collected or uncollected, in a manner approximating the natural surface water flow regime of the surrounding area.
3. Revegetation and landscaping of cleared areas shall be accomplished with predominantly native species and planting of undesirable exotic species shall be prohibited.
4. An Environmental Impact Statement shall be prepared by the applicant and reviewed by Collier County in accordance with County regulations.
5. Roads shall be designed to allow the passage of surface water flows through the use of equalizer pipes, interceptor spreader systems or performance equivalent structures.
6. Listed species shall be protected in accordance with the Federal Endangered Species Act and applicable Florida laws.

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**LIST OF APPENDICES**

Appendix A	Immokalee Area Study Map
Appendix B	List of Professional Team Members, County Staff, and Technical Advisory Committee Members
Appendix C	Power Point Presentation from 9/26/01 BCC Meeting
Appendix D	Chapter 163.3177(11), <u>Florida Statutes</u>
Appendix E	Exhibits 1 through 13; from the Stage One Report
Appendix F	Economic Assessment prepared by Fishkind and Associates
Appendix G	Stewardship Overlay Map
Appendix H	Stewardship Credit Worksheet
Appendix I	Rural Land Use Characteristics
Appendix J	Credit Tabulation Data
Appendix K	Natural Resource Index Analysis Map