

SANIBEL PLAN

the Comprehensive Land Use Plan of the
City of Sanibel, Florida



Initially Adopted
July 19, 1976 - Ordinance no. 76-21

Extensively Revised
November 27, 1985 - Ordinance no. GA-85-04

Extensively Revised
February 8, 1989 - Ordinance no. 89-04

Extensively Revised
August 15, 1997 - Ordinance no. 97-16

Extensively Revised
September 18, 2007 - Ordinance no. 07-005

Extensively Revised
May 7, 2013 - Ordinance 12-010

Recipient of the



American Planning Association
2007 National Planning Landmark Award

List of City Officials

2013 City Council

Kevin Ruane, Mayor
Doug Congress, Vice Mayor
Mick Denham
Marty Harrity
Jim Jennings

2013 Planning Commission

Michael Valiquette, Chair
Phillip Marks, Vice Chair
Chris Heidrick
Chuck Kettelman
Tom Krekel
Holly Smith
John Talmage

City Manager

Judith A. Zimomra

City Attorney

Kenneth B. Cuyler

Planning Department Director

James C. Jordan

Prologue

*"How wonderful are Islands!
Islands in space
Like this one I have come to,
Ringed by miles of water...
An Island from the world
And the world's life..."*

Anne Morrow Lindbergh, *Gift from the Sea*

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"Whereas, residents of Sanibel Island in Lee County, Florida, desiring to have rights of self-determination, to the fullest extent of the law, in the planning for the orderly future development of an Island community known far and wide for its unique atmosphere and unusual natural environment, and to insure compliance with such planning so that these unique and natural characteristics of the Island shall be preserved, to seek the benefits conferred on municipal corporations by the constitution and laws of the State of Florida."

From an Act relating to Lee County, establishing and organizing a municipality to be known and designated as the City of Sanibel and enacted by the Legislature of the State of Florida.

Adoption Date

On May 7, 2013, the Evaluation and Appraisal Report-Based Amendments to the *Sanibel Plan* was adopted by City Council (Ordinance no. 12-010)

Planning Department Participants

The Evaluation and Appraisal Report-Based and subsequent Amendments to the *Sanibel Plan* were prepared by the Planning Department through an extensive public participation process.

2013 Planning Department staff:

James Jordan, Planning Director
Benjamin Pople, Planner
Jamie Crofoot, Planner
Terri Cummins, Code Enforcement Officer
Meg Veraldi, Administrative Assistant

Roy Gibson, AICP, Senior Planner
Scott Fulton, Planner
James Fricke, Planner
Michael Frensley, Planning Technician

Former members of the Planning Department that participated in the preparation of the 2012 Evaluation and Appraisal Report-Based and subsequent Amendments to the Plan:

Ken Pfalzer, Planner
Bertha Bennett, Administrative Secretary
Susan Beck, Administrative Assistant

The Planning Department coordinated its efforts with those of all City departments, City committees, and the City's housing foundation, with the recommendations of the Planning Commission and at the direction of City Council.

Community participation throughout the planning process was invaluable to the Planning Department in the preparation of this community-based Plan.

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Article 1. Preamble

Article 1 was amended in 1996 to add a Vision Statement to the *Sanibel Plan*.

That Vision Statement has been used in the continuation of the planning process for amending the *Sanibel Plan*. For this update of the *Sanibel Plan*, which considers recommendations of the 2012 Evaluation and Appraisal Report, objectives and policies to further efforts consistent with the Vision Statement are also included.

Section 1.01. Short Title

The Comprehensive Land Use Plan of the City of Sanibel shall be known and may be cited as the *Sanibel Plan*. All references contained in this document or in any ordinance, resolution or other document of the City of Sanibel, to the Comprehensive Land Use Plan, shall mean the *Sanibel Plan*.

Section 1.1. Purpose

Pursuant to Section 163.3161 and 163.3177, Florida Statutes.

Background Discussion

In December 1974, Sanibel Island was incorporated as a municipality of Lee County, Florida. Self-determination grew from a perceived need for orderly development to preserve the Island's natural features. The Act establishing the City commits it to: *"... planning for the orderly future development of an Island community known far and wide for its unique atmosphere and unusual natural environment and to ensure compliance with such planning so that these unique and natural characteristics of the Island shall be preserved ..."* Among the benefits conferred on the City by its Charter is the power to prepare and adopt a Comprehensive Plan.

Reinforcing this power, the Local Government Comprehensive Planning and Land Development Regulation Act, *Section 163.3161 et seq. Florida Statutes*, mandates planning by local governments to *"preserve, promote, protect and improve the public health, safety, comfort, good order, appearance, convenience, law enforcement and fire prevention, and general welfare."* Among the Act's purposes is to *"prevent the overcrowding of land and avoid undue concentration of population; facilitate the adequate and efficient provision of transportation, water, sewerage, schools, parks, recreational facilities, housing and other requirements and services; and conserve, develop, utilize and protect natural resources within their jurisdictions."*

The Initial Comprehensive Land Use Plan

The original *Sanibel Plan*, adopted in 1976, marked a substantial departure from the preexisting Lee County zoning and development standards. These would have permitted about 30,000 residential units on Sanibel, with virtually no environmental safeguards. The *Sanibel Plan* aimed to reduce that figure to about 7,800 residential units. It also developed new planning guidelines to reduce the potential threat to life, beaches and structures from hurricanes; to provide for adequate supplies of good quality water; to design a safe and efficient network of roads and shared use paths; and to provide for sanitary disposal of sewage. The *Sanibel Plan* also sought to improve fire protection and police service and ensure long-term planning to meet future needs for public services.

Development regulations set forth in the *Sanibel Plan* were incorporated into the Sanibel Land Development Code in 1985.

Between 1976 and 1989, the number of allowable dwelling units rose from 7,800 to 9,000 as a result of lawsuits, settlement agreements and amendments to the *Sanibel Plan*. Since 1989, there has been no increase in allowable dwelling units. Minor increases in density for Below Market Rate Housing units have been more than offset by the acquisition of developable lands that are now owned and managed for conservation purposes.

The 1997 Plan Amendment

Prior to the 2007 EAR-based Plan Amendment, the *Sanibel Plan* was extensively revised on October 11, 1997. The amended 1997 Plan has been found to be consistent with:

- The State Comprehensive Plan

- Sections 163.3177, 163.3178 and 163.3191, *Florida Statutes*
- Chapter 9J-5 of the *Florida Administrative Code*, which sets minimum standards for the preparation, review and determination of compliance of the *Sanibel Plan*, pursuant to the Local Government Comprehensive Planning and Land Development Regulation Act
- The Southwest Florida Regional Strategic Policy Plan

The *Sanibel Plan* addresses environmental protection and planned growth on Sanibel within the limits of anticipated resources available for public improvements. As parts of the Plan are put into effect, new conditions and challenges must be addressed in the context of ever-changing budgetary horizons. Accordingly, the *Sanibel Plan* is reviewed and modified to reflect the local public's responses to new circumstances, and to meet changing state requirements. The *Sanibel Plan* is part of the continuing planning process.

The 2004/2005 Evaluation and Appraisal Report

This 2004/2005 Evaluation and Appraisal Report, for the *Sanibel Plan*, adopted on April 19, 2005, identifies actions taken or that need to be taken to address planning issues identified in that report. For the most part, the City of Sanibel has succeeded in implementing the *Sanibel Plan*, including design and implementation of specific plans and programs, such as:

- The Surface Water Management Plan
- The Wastewater Management Plan
- The Sanibel Island Beach Management Plan

- The Master Parks and Recreation Plan

The 2007 Plan Amendment

The amended 2007 Plan received the 2007 National Planning Landmark Award from the American Planning Association.

The 2012 Evaluation and Appraisal Report

The 2012 Evaluation and Appraisal Report, adopted on December 4, 2012, concludes that the *Sanibel Plan* is consistent with State requirements, including changes to State Statutes contained in the Community Planning Act of 2011. This Report re-affirms the objectives and policies of the *Sanibel Plan*, provides the data and analyses for updating the Plan and reflects changes in local conditions.

VISION STATEMENT FOR THE *SANIBEL PLAN*

The City Council retained the consulting services of Wallace, Roberts and Todd, Inc. together with LaRue Planning and Management Services, Inc., to prepare a Vision Statement for the *Sanibel Plan*. The Vision Statement reflects both the implicit values of the *Sanibel Plan* and the contributions of hundreds of citizens who took part in a series of public workshops and responded to detailed questionnaires that helped identify shared concerns, values and goals.

The Vision Embodied by Present Policies

Although the attitudes and values reflected in the 1976 *Sanibel Plan* and the 1989 Plan Revision were visionary, the documents did not directly and succinctly articulate the underlying “vision”. Thus the first step in developing a Vision Statement for the next 20 years was to make the values and goals that are

implicit in the existing *Sanibel Plan* and related ordinances, regulations and policies explicit.

Sanibel Today: Taking Stock

Next came an evaluation of the extent to which the current unarticulated vision had, in fact, been realized. Present conditions on the Island were compared with the goals of existing guidelines and policies, taking stock of successes and shortcomings. That also provided an opportunity to identify conditions, trends or threats not previously anticipated or addressed.

Sanibel Tomorrow: Community Aspirations

Though many of the citizens who contributed to past planning efforts are still around, they have been joined by many newcomers. The community has changed markedly over the past 20 years - in terms of income, age and household size; in the mix of permanent and seasonal residents; in the relative numbers of employed and retired persons. The City therefore asked its citizens to express themselves in town meetings and written surveys. In yet another demonstration of the civic dedication that has characterized the residents of Sanibel since its incorporation, hundreds took part, articulating their sense of what makes Sanibel special and identifying concerns and threats to the Island’s desired character.

This was much more than an opinion survey. The process of drafting a vision and plans for the community calls for a lot more than tallying votes or positions on various issues. Such input is invaluable, however, to distinguish issues on which there is consensus from those where opinions diverge widely.

From this process of focusing on points of consensus, the following Vision Statement has emerged as a foundation for specific modifications to the *Sanibel Plan* and to the various

regulatory modifications and capital investments which may follow from the amended Plan.

City Council Workshop

At a public workshop, the City Council invited public comment on the Preliminary Vision Statement drafted by the consultants. City Council accepted the consultants' report and instructed that the Vision Statement be included in the 1995 Evaluation and Appraisal Report of the *Sanibel Plan*.

VISION STATEMENT *

Background

The barrier Island of Sanibel comprises a wide variety of natural and altered environments. The community of Sanibel strives to sustain ecological balance and preserve and restore natural settings for residents, visitors and wildlife. The people of Sanibel are sustained by the beauty and health of the Island's natural and restored habitats, and they rely on the coordinated vigilance of residents, government and private enterprise to protect and enhance these habitats. Over the first two decades of the community's existence as a City, a tenuous balance has been maintained between development and preservation and between regulatory control and the rights and privileges of individuals. Government and not-for-profit institutions have helped sustain the balance by purchasing and restoring to natural conditions substantial areas of open space and threatened habitats.

Limited new development and redevelopment will occur over the next 20 years. However, growth limits and locations are well established, as are regulations to minimize harm to the natural environment and to the community's character.

The specter of rampant development has diminished as the community has matured. Nevertheless, unwanted changes are occurring; visitation increases as new "*attractions*" are developed; beaches and refuge areas are becoming stressed by overuse; traffic congestion is turning to gridlock; and formerly "*green*" scenic corridors are becoming urbanized and commercialized. These and other conditions and trends cause residents to realize that, unless protected, their island's historic and cherished way of life is in jeopardy.

To provide a sense of direction for the future, this Vision Statement is a confirmation of the community's shared values and goals to guide future decisions.

Sanctuary

Sanibel is and shall remain a barrier island sanctuary, one in which a diverse population lives in harmony with the Island's wildlife and natural habitats. The Sanibel community must be vigilant in the protection and enhancement of its sanctuary characteristics.

The City of Sanibel will resist pressures to accommodate increased development and redevelopment that is inconsistent with the *Sanibel Plan*, including this Vision Statement.

The City of Sanibel will guard against and, where advisable, oppose human activities in other jurisdictions that might harm the Island's sensitive habitats, including the Island's surrounding aquatic ecosystems.

Community

Sanibel is and shall remain a small town community whose members choose to live in harmony with one another and with

nature, creating a human settlement distinguished by its diversity, beauty, uniqueness, character and stewardship.

Diversity: The City of Sanibel cherishes its cultural, social ecological and economic diversity and will endeavor to maintain it.

Beauty: The City of Sanibel will foster quality, harmony and beauty in all forms of human alteration of the environment. The community aesthetic is defined as a casual style, one which is adapted to a relaxed island quality of life and respectful of local history, weather, culture and natural systems.

Uniqueness: The City of Sanibel chooses to remain unique through a development pattern which reflects the predominance of natural conditions and characteristics over human intrusions. All forms of development and redevelopment will preserve the community's unique small town identity.

Character: The City of Sanibel chooses to preserve its rural character in its setting within and urbanizing county. "Auto-urban" development influences will be avoided. The commercialization of natural resources will be limited and strictly controlled.

Stewardship: In keeping with the foregoing principles, the City of Sanibel affirms a land ethic that recognizes landholding - both public and private - as a form of stewardship, involving responsibilities to the human and natural communities of the Island and its surroundings, and to future generations.

Attraction

The Sanibel community recognizes that its attractiveness to visitors is due to the Island's quality as sanctuary and as community. The City of Sanibel will welcome visitors who are drawn by, and are respectful of, these qualities; it will resist

pressures to accommodate visitor attractions and activities that compromise these qualities.

Hierarchy of Values

This three-part statement of the community's vision of its future is a hierarchy, one in which the dominant principle is Sanibel's sanctuary quality. Sanibel shall be developed as a community only to the extent to which it retains and embraces this quality of sanctuary. Sanibel will serve as attraction only to the extent to which it retains its desired qualities as sanctuary and community.

* The Sanibel Vision Statement (Ordinance #96-06) was adopted by City Council on Sept. 3, 1996

Section 1.2.

Consistency and Feasibility of the Plan

Pursuant to Section 163.3177(2), Florida Statutes.

The discrete elements of the *Sanibel Plan* are consistent with one another in that each element is so designed as to promote and protect the health, safety and welfare of existing and future residents and to protect and preserve the unique natural environments of Sanibel. All elements of the *Sanibel Plan* are intended to be consistent in that they relate to provisions necessary for planned growth of up to approximately 9,000 dwelling units. Implementing development and administrative regulations shall be consistent with the intent of the Community Planning Act, *Section 163 et seq., Florida Statutes*. The elements of the Plan address critical ecological and special requirements for preserving the unique and natural characteristics of Sanibel. Elements of the *Sanibel Plan* are consistent with State and Federal regulations, including:

- The Coastal Construction Setback Lines of *Sections 161.052 and 161.053, Florida Statutes*
- The Dredge and Fill Regulations of *Sections 403 and 373, Florida Statutes*
- The Florida Air and Water Pollution Control Act, *Section 403, Florida Statutes*
- The Florida Environmental Protection Act, *Section 403.412, Florida Statutes*
- The Florida Water Resources Act of 1972, *Section 373, Florida Statutes*
- The Federal Clean Water Act (Federal Water Pollution Control Amendments of 1972), including Section 404, Dredge and Fill / Wetlands Permit Requirements for Construction Projects
- The National Coastal Zone Management Act of 1972
- The National Environmental Policy Act of 1969
- The Charlotte Harbor Management Plan, 2000

Consistency with other plans and applicable regulations is further addressed in Section 1.4 Coordination with Plans of Surrounding Areas and in Part 3.4 Intergovernmental Coordination.

Each element of the *Sanibel Plan* is internally consistent and is based upon research and analyses of available published data and field studies that evaluate problems and opportunities for planned growth and conservation. The *Sanibel Plan* is consistent with respect to recommendations for allocating future growth

and for performance standards that protect the natural environment and Island character. It is important that performance standards be refined and enforced, as experience warrants, to maintain community confidence and resolve and assure fulfillment of Plan objectives.

The feasibility of the *Sanibel Plan* is further addressed in Part 3.5. Capital Improvements. Feasibility of implementing the Plan is enhanced by administrative regulations that provide for review and updates of the Plan to meet changing circumstances in the future.

Section 1.3 Economic Assumptions of the Plan

Pursuant to Section 163.3177(7(j)), Florida Statutes.

The most basic of all the economic assumptions for Sanibel's planning is that Sanibel's economic fortune is directly related to the viability of its natural systems. Sanibel's appeal as a pleasant place to live or visit is based upon vital wildlife, open beaches and a tranquil ambiance. The wildlife needs to extend beyond the refuges so that it is something people live with, rather than visit. Sanibel must protect the environment. It must protect the environment because of the responsibility entrusted to the people of Sanibel to care for these resources, but also as a component of a sound economic policy.

In order for Sanibel to be economically and environmentally sustainable, means must be sought to reduce the demand on the natural infrastructure. Perhaps no other component of demand is more critical than automobile traffic. Although difficult to do, some say impossible, means need to be pursued to reduce automobile traffic. Such a reduction will go far to retain and,

where needed, to restore the Sanibel ambiance, while also reducing the demand on the systems.

Demand, preferably internal demand, needs to be found for surplus retail space. It would be counterproductive to attempt to fill these spaces by stimulation of additional activity from off-Island. Rather, filling these spaces with activities that are presently based at off-Island locations, but already providing services on-Island, would be the better policy. Such a policy may require reconsideration of certain of the development regulations relating to permissible uses in such buildings. Supply reduction is another option available to address surplus retail space. This option could be undertaken by the public acquisition of commercially zoned sites.

The City of Sanibel can expect the growth of the tax base to be substantially less than it has been in the past. The full implementation of the “Save Our Homes” constitutional amendment has resulted in additional constraints on growth of the tax base.

Sanibel can and should expect that the residential component of the community will grow bigger over time. Many seasonal residents will become permanent residents as they reach retirement. This suggests that Sanibel protect the residential nature of the community to assure that the community has the flexibility to evolve with its population.

The economic base of Sanibel is the environment. It is the base for people wanting to visit as well as live on the Island. It is the base for the high property values and thousands of jobs. Without a healthy and sustainable environment, none of these would exist. But the environment is now being used beyond its capacity. This level of use is not sustainable. If means to reduce this over-usage are not found, the community can expect

to see further deterioration in property values and the quality of life.

The Island that is Sanibel is small, less than 12,000 acres. Over one-half of the land area of the Island is devoted to conservation. It is these conservation areas that are the critical economic base of the Island’s economy. Only some 6,000 acres or less are available for human use and occupation. This means that these areas will have to be judiciously used. It also means that the community of Sanibel must economically exist within the broader communities of Lee County and Southwest Florida. The sustainability of Sanibel need not be viewed as distinct or separate from the broader community. Sanibel is a part, and a very important part, of the broader community. Each part of the community has a role to play. Symbolically, Sanibel’s role is to be a haven for migratory birds and a repository for sea shells. More importantly, in the hearts of its citizenry, as expressed in the Vision Statement of this Plan, Sanibel is and shall remain a barrier island sanctuary. Sanibel need not attempt to play any other role, such as a retail or business center. The role of sanctuary is beneficial, both environmentally and economically, to Sanibel and also the County, the Region and the State.

The future growth of Sanibel will be redevelopment. As redevelopment begins, close attention needs to be paid to how that redevelopment can correct the problems of the present. Planning priority should be given to reducing the need to use motor vehicles as residents and visitors go about their daily activities. Sanibel needs to reduce vehicular traffic and redevelopment can be an effective means of attaining that end.

Redevelopment is a process that is much more difficult than initial development. The City of Sanibel will need to be more flexible and imaginative with respect to permitted uses and principles of building and site design. This flexibility should not be a lessening of standards. Rather, it should open up new

routes to attaining those standards, which ensure that the harmony, general atmosphere and character of the community are retained.

These economic assumptions are based on the analyses of the *Sanibel Plan* prepared by James C. Nicholas, PhD, in the report *Economic Realities, Possibilities and Assumptions, 1997*. That report concludes that the *Sanibel Plan* is based on sound economic policy.

It is not the intent of the City of Sanibel that these economic assumptions override the goals and objectives of the *Sanibel Plan* in order to foster economic growth at all costs. It is the intent of the City of Sanibel that the *Sanibel Plan* is based on sound economic policy.

The City's Economic Base Analysis was updated in 2008. However, it has been 15 years since the Economic Assumptions of the Plan were updated. The economic base analysis is important for an assessment of the conditions, performance and future of Sanibel's ecologically based economy. This analysis, intended to identify strategies to reinforce the *Sanibel Plan*, will be coordinated with the Redevelopment Study for Commercial Districts and Uses.

Section 1.4.

Coordination with Plans of Surrounding Areas

Pursuant to Section 163.3177(4)(a), Florida Statutes.

The Local Government Comprehensive Planning and Land Development Regulation Act, as amended by the Community Planning Act, *Section 163, Florida Statutes* requires that the *"coordination of the local comprehensive plan with the comprehensive plans of adjacent municipalities, the county,*

adjacent counties or region, with adopted rules pertaining to designated areas of critical state concern and with the State comprehensive plan shall be a major objective of the local comprehensive planning process. To that end, in the preparation of a comprehensive plan or element thereof, and in the comprehensive plan or element as adopted, the governing body shall include a specific policy statement indicating the relationship of the proposed development of the area to the comprehensive plans of adjacent municipalities, the county, adjacent counties, or the region and to the State comprehensive plan, as the case may require and as such adopted plans or plans in preparation may exist."

Sanibel's primary planning goal, as stated in its Charter, is to plan for the orderly future development of the Island to ensure that the unique atmosphere and the unusual natural environment of the Island be preserved. It is also the policy of the City, as incorporated in the *Sanibel Plan*, to regulate future growth in a fashion that takes cognizance of the State, Regional, County and adjacent Municipal comprehensive plans.

The goals, objectives and policies of the *Sanibel Plan* are intended to be consistent with the State Comprehensive Plan, the Southwest Florida Regional Strategic Policy Plan, the Lee Plan, the Fort Myers Comprehensive Plan, the Cape Coral Comprehensive Plan, the Fort Myers Beach Comprehensive Plan and the Bonita Springs Comprehensive Plan.

It is the policy of the City Council of the City of Sanibel that the *Sanibel Plan* and any modifications thereto shall be coordinated with and related to the comprehensive plans of the State, County, Southwest Florida Regional Planning Council and adjacent Municipalities, and the plans of the Florida Department of Environmental Protection, the Florida Department of

Transportation and the South Florida Water Management District.

Section 1.5. Timeframe for the Plan

Pursuant to *Section 163.3191, Florida Statutes*, the City of Sanibel prepared an Evaluation and Appraisal Report (EAR) for the *Sanibel Plan*, adopted on November 6, 2012. *Section 163.3191, Florida Statutes*, requires that the *Sanibel Plan* be amended, based on the findings and recommendations in the EAR.

The data and analyses compiled and undertaken for the preparation of the 2012 EAR for the *Sanibel Plan* has subsequently been used in the preparation of an extensive revision to the Plan. This benchmark data was used for establishing the time frame for this revision to the *Sanibel Plan*. For this *Sanibel Plan*, amended pursuant to the findings and recommendations of the Evaluation and Appraisal Report, there are two planning periods.

- The initial planning period is for 5 years, through the year 2017
- The long-range planning period, which includes the initial planning period, is for 10 years, through the year 2022

The “build-out” of land uses, consistent with the Future Land Use Map and the rates of growth projected in this Plan, has essentially been reached.

Section 1.6. Implementation of the Plan

Pursuant to Section 163.3177(9)(e), Florida Statutes.

The *Sanibel Plan* was enacted:

- Pursuant to authority granted the City of Sanibel under home rule powers by the State of Florida
- As set forth in the Charter of the City
- As outlined in the Local Government Comprehensive Planning and Land Development Regulation Act, *Section 163, Florida Statutes*, as amended by the Community Planning Act

The goals, objectives and policies of this Plan describe how the programs and activities of the City of Sanibel will be initiated, modified or continued to implement the *Sanibel Plan* in a consistent manner. In accordance with *Subsection 163.3161(5) and Sections 163.3194, 163.3201 and 163.3202, Florida Statutes*, the implementation of the Plan will be in accordance with the provisions of the adopted Land Development Code, which will be consistent with all elements of the *Sanibel Plan*. All projects for development or improvement on Sanibel by either the public or private sector must conform with the intent and provisions of the *Sanibel Plan* and follow procedures outlined in the Land Development Code.

Because the Plan contains elements that require improvements of public services and safety factors, and because funding should be flexible, the *Sanibel Plan* must be continually evaluated and appraised.

The Local Government Comprehensive Planning and Land Development Regulation Act, *Section 163.3191, Florida Statutes*, as amended by the Community Planning Act, stipulates that “*The planning program shall be a continuous and ongoing process. The local government shall adopt an evaluation and appraisal report once every seven years assessing the progress in implementing the local government’s comprehensive plan.*”

Progress of the Plan implementation shall be included in such reports.

The City shall keep accurate records of permits, structures, and improvements as built. Supplementary studies shall be undertaken to improve the information base for future planning. These include occupancy census of residences at different seasons, traffic studies, and monitoring of environmental impact from development.

The *Sanibel Plan* has been and will be implemented at a pace consistent with the City's capability to provide administrative and economic support for development.

Section 1.7. Monitoring and Evaluation

Pursuant to Section 163.3177(9)(e), Florida Statutes.

For the purpose of evaluating and appraising implementation of the *Sanibel Plan*, the City of Sanibel prepared the 2012 Evaluation and Appraisal Report for the *Sanibel Plan*, in accordance with *Section 163.3191, Florida Statutes*.

The procedures in the *Sanibel Plan* for preparing the Evaluation and Appraisal Report include:

- Establishing mechanisms to ensure citizen participation in the evaluation and appraisal process
- Updating appropriate baseline data and measurable objectives to be accomplished in the first five-year period of the plan and for the long-term 10-year period
- Identifying accomplishments in the first five-year period, describing the degree to which the goals,

objectives and policies have been successfully reached

- Identifying successes and challenges that resulted in underachievement of goals, objectives or policies
- Developing new or modified and reformulated goals, objectives or policies needed to correct discovered problems
- Establishing a means of ensuring continuous monitoring and evaluation of the Plan during the five-year and 10-year planning period
- Identifying the extent to which unanticipated and unforeseen problems and opportunities occurred between the date of adoption of this Plan and the date of the evaluation and appraisal report
- Identifying the effect on the *Sanibel Plan* of changes in State Statutes and Administrative Code, the State Comprehensive Plan and the Southwest Florida Strategic Regional Policy Plan
- Identifying the major problems of development, physical deterioration, and the location of land uses and the social and economic effects of such uses in the area
- Identifying any actions that are taken or need to be taken to address the planning issues identified in the evaluation and appraisal report
- Identifying any proposed or anticipated Plan amendments necessary to address or implement the identified changes

The application of these procedures is reflected throughout the 2012 Evaluation and Appraisal Report for the *Sanibel Plan* and will be used in future evaluation and appraisal reports.

Article 2. Evaluation and Appraisal

The data and analyses for the *Sanibel Plan* are briefly summarized in Article 3 Goals, Objectives and Policies of this Plan. The *Sanibel Plan*, extensively revised in 1989, 1997, 2007 and 2012, addresses the minimum review criteria required for comprehensive plans. The minimum review criteria have been addressed in the 2012 Evaluation and Appraisal Report (EAR) process for the *Sanibel Plan*. Therefore, an extensive recitation of data and analyses, responsive to regulatory requirements, is not repeated in the *Sanibel Plan*, but is incorporated by reference.

The 2012 EAR was prepared in conformity with public participation procedures, pursuant to *Florida Statutes*. The EAR was prepared by the Sanibel Planning Commission, the local planning agency, pursuant to Florida Statutes, Section 163.3191. After 7 public hearings focusing on the elements of the *Sanibel Plan*, the draft EAR was transmitted to the City Council by Planning Commission Resolution no. 12-10 on August 28, 2012. The EAR was presented to the City Council on September 18, 2012. The City Council reviewed the EAR at public hearings on September 18, November 6, and December 4, 2012. The Report was revised as appropriate at the direction of City Council and adopted by Resolution no. 12-97 on December 4, 2012.

2012 Evaluation and Appraisal Report for the *Sanibel Plan*

Executive Summary

The 2012 Evaluation and Appraisal Report was prepared to provide the basis and the content for the EAR-based Amendment to the *Sanibel Plan*.

This Report includes updates for the data and analysis that provides the minimum review criteria for the preparation of the *Sanibel Plan*.

The principal purpose of this Evaluation and Appraisal Report is to convey the City Council's commitment to update the *Sanibel Plan*; to address changes in State Law and Rule; and to amend the *Sanibel Plan*, where appropriate, consistent with the adopted Evaluation and Appraisal Report.

Of foremost importance is that the findings of this Report conclude that the *Sanibel Plan* is consistent with State requirements, including changes to State Statutes contained in the "Community Planning Act". In fact, the *Sanibel Plan* is consistent with State requirements even without any Plan Amendments based on this Evaluation and Appraisal of the *Sanibel Plan*.

The 2012 Evaluation and Appraisal Report reaffirms many objectives and policies of the *Sanibel Plan*. The Plan Amendments recommended by this Evaluation and Appraisal of the *Sanibel Plan* update the Plan and reflect changes in local conditions.

Article 3.

Goals, Objectives and Policies

Arranged by the elements of the *Sanibel Plan*, the goals, objectives and policies of the *Sanibel Plan* are provided in this Article.

In addition to goals, objectives and policies, this Article also contains Plans for each Plan element, and components of Plan elements. These Plans, initially established in the 1976 *Sanibel Plan* and continuously updated, are:

- Plan for Hurricane Safety
- Plan for Coastal Zone Protection
- Plan for Natural Resources
- Plan for the Preservation of Ecological Functions Relating to Health, Safety and Welfare
- Plan for the Interior Wetlands Conservation District
- Plan for Environmentally Sensitive Lands
- Plan for Vegetation Preservation
- Plan for Wetland Protection
- Plan for Wildlife Preservation
- Plan for Water Resources
- Plan for Water Quality
- Plan for Air Quality
- Plan for Hazardous Wastes
- Plan for Conservation and Recreation Use
- Plan for Surface Water Management
- Plan for Enhancement and Restoration of Natural Resources
- Plan for Aquifer Recharge
- Plan for Historic Preservation
- Plan for Scenic Preservation
- Plan for Water Supply
- Plan for Transportation
- Plan for Wastewater Treatment
- Plan for Solid Waste Disposal
- Plan for Storm Drainage
- Plan for Recreation and Open Space
- Plan for Fire Protection
- Plan for City Hall
- Plan for Electric Utility
- Plan for Medical Facilities and Public Health
- Plan for Education
- Plan for Mosquito Control on Sanibel
- Plan for Intergovernmental Coordination
- Plan for Housing
- Plan for Permitted Uses
- Plan for Development Intensity
- Plan for Commercial Development
- Plan for Community Design

The provisions contained in these Plans have a status that is equivalent to the objectives and policies of the *Sanibel Plan*.

Article 3.

A brief discussion of background material for elements of the *Sanibel Plan* is provided in this Article. The background discussion summarizes data and analyses for the *Sanibel Plan* and describes each element's purpose and relationship to other Plan elements.

For the *Sanibel Plan*, the minimum review criteria for data and analyses has been addressed in the 2012 Evaluation and Appraisal Report for the *Sanibel Plan*.

Part 3.1. Safety

This Part of the *Sanibel Plan* establishes Goals, Objectives and Policies for public expenditures in a coastal high-hazard area, for directing population concentrations away from a coastal high-hazard area, for maintaining and reducing hurricane evacuation times, for post-hurricane recovery and for building code requirements.

Hurricane safety has always been a principal tenet of the *Sanibel Plan* and has influenced development of other Plan Elements.

Adequate off-Island evacuation routes and shelters are becoming an increasing concern to the City of Sanibel and will be addressed, to the extent possible, in the Intergovernmental Coordination Element of the *Sanibel Plan*.

Section 3.1.1. Hurricane Safety Element

Pursuant to Section 163.3177, Florida Statutes.

Background Discussion

The purpose of this Element is to protect human life and limit public expenditures in areas that are subject to destruction by natural disaster.

A summary of the data and analyses for this Element of the *Sanibel Plan*, pursuant to *Section 163.3177(7)(h) Florida Statutes*, is provided in this subsection.

The City of Sanibel is subject to periodic passage of hurricanes. Sanibel is located entirely within the evacuation zone for Category 1 hurricanes, as predicted by the National Hurricane Center and mapped by the Southwest Florida Regional Planning Council. Therefore, by rule definition, Sanibel Island is entirely within the coastal high-hazard area. The threat of hurricanes is a major influence in the development of the *Sanibel Plan*.

Hurricane Climatology

Since 1873, there have been over 50 tropical cyclones passing within 100 nautical miles of the Fort Myers area. Twenty of these storms have been hurricanes passing within 75 miles of Sanibel Island, each of which posed a significant threat to property and lives on the Island at some point in its life cycle. Hurricane Charley, striking on August 13, 2004, was the most destructive hurricane to hit the City of Sanibel since incorporation in 1974. The following year, the eye of Hurricane Wilma passed within 75 miles of the City of Sanibel.

For Sanibel, the storm surge represents a potentially devastating and dangerous event. The storm tide level predicted for Sanibel during the 100-year storm is 8 to 20 feet above mean sea level, a level that would inundate the entire island. The storm surge tides would be accompanied by large scouring and battering waves. The erosive power and battering impact of such a water flow would seriously threaten the integrity of numerous structures on Sanibel and the life of any person stranded on the Island. Of course, lesser storms can and will produce tides capable of flooding the entire Island. The 1926 hurricane did just that, and forever changed the character of Sanibel's use by wiping out the Island's farming economy.

Data and Analyses

In 1980, the City of Sanibel undertook a comprehensive effort to develop a broad based hazard mitigation program. A study, entitled "Hurricane Evacuation and Hazard Mitigation Study," was prepared for the City by the consulting firm of Rogers, Golden & Halpern in association with Simpson Weather Associates and H. W. Lochner, Inc.

The Southwest Florida Regional Planning Council (SWFRPC) prepared a comprehensive hurricane evacuation study for Southwest Florida entitled "Southwest Florida Regional Hurricane Evacuation Study". This study was updated in 2011.

Major findings and recommendations from these studies have been incorporated in this Element of the *Sanibel Plan*.

Evacuation Population

In recognition of the hurricane hazard on Sanibel and the inherent deficiencies of on-Island refuges, the City of Sanibel must plan for the evacuation of all persons from Sanibel and Captiva Islands when a hurricane warning and evacuation order is issued.

As part of the City's Emergency Management Plan, the evacuation population and number of evacuating vehicles for Sanibel and Captiva is estimated in advance of potential threats from active storms, based on conditions. The City (and Captiva Island) were successfully evacuated in 2004 and 2005 in preparation for the arrival of Hurricanes Charley and Wilma.

According to SWFRPC estimates, nearly half of the County's functional population would be displaced by evacuation for a Category 1 hurricane. It is estimated that nearly 100% of the County's functional population would be displaced by evacuation from a Category 4/5 hurricane.

Elderly and handicapped populations present special needs for evacuation assistance. The 2010 census estimated that 50 percent of Sanibel's permanent population was 65 years of age or older. A local service organization, Friends In Service Here (FISH) in coordination with the City of Sanibel Emergency Management Program and the Lee County Emergency Operations Center Special Needs program, provides assistance for individuals that require help with evacuation. Community Housing and Resources has plans to assist the elderly and disabled tenants in the Below Market Rate Housing units.

Hurricane Shelters

Public shelters accessible for Sanibel residents are listed in the SWFRPC study and in the Lee County Comprehensive Emergency Management Plan. Some shelters in Lee County can accommodate some special needs and some can accommodate pets. All public shelters should be available for Sanibel evacuees.

The SWFRPC has concluded that the volume of shelter space available for a Category 1 hurricane, which would necessitate Island evacuation, is adequate for the City and all other portions of Lee County affected by such categories of storms. Recognizable deficits exist for the entire County for increasing strength storms, which cause more shelters to stay closed. As deficits increase, Sanibel's residents will need to head to public or private sheltering options in other Counties.

Sanibel has attempted to reduce some sheltering issues through a positive effort of identifying hotels and private sheltering providers on the mainland. Further, a portion of City Hall, which is in itself elevated, has been storm-proofed to serve for the initial steps for recovery.

The City has no on-Island shelters. As a barrier island, it is not safe to remain in the City of Sanibel when a mandatory evacuation order is issued.

Evacuation Routes and Improvements

There is one primary evacuation route from Sanibel - across the Causeway and up McGregor Boulevard / Summerlin Road. This evacuation route will also be used by thousands of mainland evacuees who live in other low-lying coastal areas,

severely limiting the capacity of the route that will be available for Sanibel and Captiva evacuees.

Although Summerlin Road and the portion of McGregor Boulevard from the southeastern terminus of Summerlin Road to the Sanibel Causeway were originally planned as controlled access roads, accesses in addition to those originally envisioned have been added to accommodate development plans. The multiple access points that have been developed along the Summerlin Road and McGregor Boulevard corridor have contributed to this area becoming a hazardous stretch of highway. The hazards of these many access points will be amplified in the event of hurricane evacuation.

Although the local roads used for evacuation routes are constrained during peak season, the City's Emergency Management Program seeks to reduce the number of vehicles on local roads by restricting unnecessary trips to Sanibel prior to issuance of an evacuation order. This effort improves the level of service for the evacuation routes when emergency conditions threaten.

The City's objectives and policies for traffic circulation limit road capacity improvements to those needed for safety and those that are compatible with environmental, scenic and historic resources. Although road capacity improvements are a primary consideration for adequate hurricane evacuation, road capacity improvements are secondary to resource protection. Road improvements that would provide increased capacity for hurricane evacuation would create an impetus for further development and use of the limited and fragile resources of Sanibel.

To address this conflict among objectives in a manner consistent with Sanibel's policy not to widen roads, the City's

Emergency Management Plan contains a provision for Causeway lane conversion procedures. Depending on storm type, direction, intensity and calculated clearance time, conversion to two outbound lanes on the Causeway can be ordered by the Emergency Operations Center head in concert with the Lee County Disaster Director. Sanibel police will stop all inbound traffic allowing only predetermined vehicles to access the Causeway. This increase in road capacity on Sanibel's primary evacuation route can significantly reduce the clearance time component for calculating hurricane evacuation times. This method to increase road capacity can be enhanced by incorporating lane conversion procedures for the replacement bridges of the Sanibel Causeway.

Evacuation Times

The severity of the storm, the number of vehicles evacuating, the capacity of evacuation routes, distance to shelter destination, and behavioral tendencies are factors contributing to clearance time. Pre-landfall storm conditions, such as flooding and high wind, also add to evacuation time.

The critical link for Sanibel's near-shore evacuation is the Sanibel Causeway. This is a two-lane facility that is low lying and subject to inundation by tropical storm flooding. Upon reaching the mainland, the route becomes McGregor Boulevard / Summerlin Road and is a four-lane facility to its terminus in Fort Myers. Periwinkle Way, the primary evacuation route within the City, is planned to remain two lanes. Portions of Summerlin have been widened or are under construction to become six lanes, from the intersection with SR865 (San Carlos Boulevard) to Boy Scout Road. The reconstructed bridges of the Sanibel Causeway provide an opportunity to provide two lanes off the Island for evacuation purposes.

Recognizing that the Causeway is the critical link for reaching mainland shelters, it is a point of survival for the City to make sure that the Causeway is fully functional with undiminished capacity, and that McGregor/Summerlin's capacity for evacuation is not reduced through growth of surrounding areas beyond that which enables the City to have a timely evacuation. Currently, that time is estimated to be 13 to 14 hours to clear the Island, with more than an additional hour to reach the shelter at the expected reduced rates of speed of service level "D". This estimated time includes the Captiva evacuees and applies to all categories of hurricanes; however, great hurricanes, requiring the evacuation of major portions of the mainland, will drastically increase the time required to reach shelters.

Evacuation time is of concern for the City of Sanibel. Considering pre-landfall wind conditions of up to eight hours (and, in some circumstances, pre-landfall flooding of similar times), total evacuation of the Island to mainland shelter could take over 20 hours, exceeding the 18 hour goal for evacuation planning. Consequently, there have been alternatives discussed to reduce this time. The most common is providing two lanes off the Islands across the Causeway, which could reduce clearance time by as much as 50 percent.

The estimation and projection for hurricane evacuation clearance times for now and at build-out (existing development and approximately 600 additional dwelling units) on Sanibel and Captiva can be significantly reduced by providing a second lane for evacuation traffic along the evacuation route. This proposed increase in hurricane evacuation road capacity, which is projected to reduce and maintain evacuation clearance times below 1987 levels, is implemented by operational procedures contained in the Sanibel Emergency Management Plan rather than as a capital

improvement. The Sanibel Emergency Management Plan will continue to provide manual control of the hurricane evacuation route to assure that the level of service on the evacuation route is maintained throughout the evacuation period.

The City of Sanibel has undertaken additional operational steps to reduce evacuation times. The public notification program, the enlistment of volunteers for neighborhood and condominium notification, including door-to-door notification and the identification of persons needing special assistance have all been coordinated through the Police Department and provide a high level of assurance that the City will react quickly to the hurricane threat.

In 1983 the City and County entered into an interlocal agreement that permits the City to restrict vehicular access to the Sanibel Causeway within 48 hours of a hurricane's forecasted landfall.

Depending upon a storm's intensity and direction of approach, high winds and high tides could make it unsafe to cross the Causeway as much as 12 hours in advance of landfall. A tide gauge with remote read-out capability would be appropriate to be installed near the Causeway to permit continuous monitoring of the tides. Additional recommendations with regard to evacuations are:

- Population, including dwelling units, should be limited on Sanibel, as well as Captiva and other areas subject to tidal flooding, to that which can be safely evacuated under worst case conditions
- If an areawide evacuation is ordered, the evacuation of all zones including the mainland should be initiated at the same time. This would

permit manual control of the intersections to obtain the highest evacuation rates. It would also reduce public confusion

Recovery

The Plan for Recovery from the damage of a hurricane or evacuation of the population due to the threat of a hurricane is contained in the Sanibel Emergency Management Plan. The City's recovery from Hurricane Charley was effective and the City has employed the lessons learned from that experience to improve plans for recovery from storms that will occur in the future. Areas for staging recovery efforts from storms that will occur in the future should be identified and secured. Optimally, a small number of sites at disbursed locations will be suitable for accommodating recovery efforts from a variety of storm scenarios. Recovery will be aided by the Mobil Emergency Communications Vehicle which was put into service in 2007.

The City has constructed docking facilities at the City boat ramp, located adjacent to Causeway Boulevard, to facilitate deliveries of personnel and equipment by shallow-draft barges, should vehicular access via the Causeway be interrupted do to storm damage.

Damage Reduction

Taking measures to reduce the amount of damage sustained in a hurricane allows the community to get back on its feet more quickly following a hurricane. In addition, damage mitigation reduces the cost of replacing damaged improvements.

There are approximately 600 dwelling units located seaward of the 1974 Coastal Construction Control Line (CCCL); however, with rare exception, these units were built prior to the adoption of this Plan in 1976. There are few structures in the City of Sanibel that have a history of repeated damage in coastal storms. These structures are located on the Gulf Coast near Blind Pass. The City has acquired some of these properties.

The northernmost section of Sanibel-Captiva Road (approximately a half mile immediately south of the Blind Pass bridge) is located seaward of the State's 1991 CCCL. There is no apparent opportunity to relocate this facility, which is the hurricane evacuation route for the northern extent of Sanibel and all of Captiva. A small section of East Gulf Drive (directly south of Kinzie Island) is also located seaward of the State's 1991 CCCL.

Structures are to be elevated above or floodproofed to the 100-year storm's projected wave heights. All structures must be developed in compliance with the Flood and Stormproofing requirements of the Land Development Code.

The Florida Building Code includes standards appropriate to the hazards present on a barrier Island. This code requires all new construction to be designed and built to withstand the wind loads associated with coastal wind speeds, to have foundations deep enough to remain stable following maximum anticipated scour depths and to withstand the battering which accompanies wave action.

Additional measures that should be considered for their contribution to a damage reduction program include:

- Do not permit fill to be used for elevating structures in locations identified as being especially susceptible to scour, even though the location may be in an "AE" Zone area according to the Flood Insurance Rate Map (FIRM)
- Maintain as much dense vegetation as possible as a means of reducing wave heights and wind velocity, and require revegetation as opportunities arise for the same reasons
- Reduce permitted densities insofar as possible in undeveloped parts of "VE" Zones and the most scour-prone parts of "AE" Zones

Plan for Hurricane Safety

The threat to life and property posed by tropical storms and hurricanes necessitates the City of Sanibel having a plan in place that responds to this threat.

It is the policy of the City to develop and improve on- and off-Island evacuation to off-Island shelters as the principal means for assuring the safety of its population. On-Island refuge is not a substitute for evacuation.

Because the components of ensuring adequate means for the safe evacuation from threats of hurricanes extend well beyond the jurisdictional extent of the City of Sanibel, these concerns need to be adequately addressed in the Intergovernmental Coordination Element of this Plan.

Provisions of the Plan

1. Cooperate with Local governments of the Region to carry out the safe evacuation of populations affected by the threat from tropical storms and hurricanes.
 - a. Work closely with Lee County and State officials to implement a systematic process for making decisions on evacuation during the approach of a tropical storm or hurricane that is based on the probability of the storm striking a particular location.
 - b. Work with Lee County to develop a program to ensure that adequate off-Island shelters are open and available during a storm threat to accommodate early evacuees who are evacuating before a mandatory evacuation order is given.
2. Continue educational programs to ensure citizen understanding of the threat posed by tropical storms and hurricanes and the appropriate responses thereto.
3. Implement an effective warning system to get current information on storms to Island residents.
 - a. Maintain a 24-hour communications link with official weather information sources.
 - b. Continue to improve the communication network that enables the public to obtain relevant information concerning status and procedures during threats from storms and during recovery periods.
4. Continue to evaluate and improve the operational evacuation plan.
 - a. Maintain an up-to-date plan describing actions to be taken at various times during the approach of tropical storms and hurricanes.
 - b. When a hurricane warning is issued, provide each person in the City of Sanibel the opportunity to evacuate from the Island and encourage persons to evacuate in a timely fashion.
 - c. Encourage people to respond to early warnings and hurricane watches in order to lessen the evacuation burden after a hurricane warning is issued.
 - d. Keep in place a method of monitoring the number of vehicles on Sanibel and Captiva during the hurricane season in order to have an accurate approximation of the number of vehicles to be evacuated.
 - e. Install a tide gauge near the causeway with remote readout capability in the Police Station in order to monitor tides to assure early and timely warning or the need to close the Causeway to traffic.
 - f. Maintain an agreement with a private meteorological firm whose staff is competent in tropical meteorology to

provide the City with current information on probable effects from approaching tropical storms and hurricanes.

5. Maintain the facilities and equipment necessary to implement plans for evacuation and recovery.
 - a. Improve, as necessary, storm drainage along the evacuation route and elevate those portions of the roadway subject to early flooding.
 - b. Acquire and maintain the equipment necessary to keep evacuation routes open prior to and during an evacuation, and open roadways following a storm.
 - c. Keep the City-owned Causeway Boulevard properties available as a recovery staging area in the event the causeway is not useable following a hurricane.
6. Keep the City Hall property available for recovery operations. Keep up-to-date on Federal and State requirements to qualify the City and its residents for disaster relief assistance.
7. Limit and manage growth so that the population on the Island when a hurricane warning is issued will not be in excess of evacuation capabilities. Overloading the emergency system will reduce efficiency and deprive residents and visitors of a reasonable opportunity to reach safe shelter.
 - a. Ensure that future growth be accompanied by and coordinated with, to the maximum extent practicable,

improvements in the evacuation system, both on and off island. It is only in anticipation of such improvements that the present population should be allowed to expand, because the evacuation capacity is already taxed.

8. See that all new buildings, which are of a type that have common spaces, are developed in a manner amenable to use as an emergency recovery area. Use of such areas should be agreed upon during the approval of such development.

Goals, Objectives and Policies

Goal Statement

Reduce the exposure of human life and public and private property to the threat of natural disasters.

Objective 1

Limit public expenditures in the coastal area subject to storm surge (the VE-Zone on the FIRM) and scour.

Policy 1.1. Public expenditures in coastal areas subject to storm surge and scour will be limited to maintenance, public safety needs, recreation and open space uses, restoration or enhancement of natural resources or land acquisitions.

Objective 2

Direct population concentrations away from coastal areas subject to storm surge and scour.

Policy 2.1. Development intensity for the coastal area subject to storm surge and scour will not be increased above existing densities and that currently established on the Development Intensity Map.

Policy 2.2. Limit and manage growth so that the population on the Island does not exceed evacuation capabilities.

Policy 2.3. To the maximum practicable, future growth will be accompanied by and coordinated with improvements in the evacuation system, both on and off the Island.

Objective 3

Beyond “build-out”, hurricane evacuation times will be reduced and maintained at or below levels established in the 1995 Southwest Florida Regional Hurricane Study. Updates to this study will be employed to determine compliance with this objective.

Policy 3.1. Implement a plan to operationally provide two lanes for outbound evacuation traffic on Sanibel’s evacuation route as a means of reducing evacuation clearance times.

Policy 3.2. In cooperation with Lee County and the Florida Department of Economic Opportunity, develop an interlocal agreement to develop and implement a

plan to operationally provide two lanes of outbound evacuation traffic across the Sanibel Causeway as a means to reduce evacuation clearance times.

Policy 3.3. Cooperate with the Southwest Florida Regional Planning Council, Lee County and the Cities of Fort Myers, Bonita Springs and Cape Coral and the Town of Fort Myers Beach to implement an off-Island emergency plan for evacuation that controls traffic on evacuation routes and identifies emergency shelter locations.

Policy 3.4. Incorporate a least regret factor in the plan for hurricane preparedness to take into account the bad actor storm, i.e., the storm that does not behave as forecasted.

Policy 3.5. As the threat increases, the City will take a series of protective actions to ensure safe and timely evacuation. The decision to implement protective actions will be coordinated with adjacent local governments.

Policy 3.6. Encourage the early, voluntary evacuation of visitors during a storm threat in order to decrease evacuation time if it becomes necessary to order an evacuation. The City maintains a list of resort/hotel operators, keeping them apprised of severe weather conditions through existing weather alert communication systems.

Policy 3.7. In cooperation with Lee County, restrict visitor and non-essential traffic to Sanibel 48 hours prior to a hurricane’s forecast landfall when possible.

Policy 3.8. Encourage Lee County to operate and maintain their Bridge and Causeway facility, which runs between the mainland and Sanibel, to satisfy Sanibel's long-term need for an evacuation route to the mainland and a recovery route from the mainland. It is important to keep the bottom of the road bed for the bridges of the Sanibel Causeway elevated above the level of the anticipated storm surge of a Category 3 hurricane and to keep the bridges of sufficient width to permit motor vehicle traffic to bypass disabled vehicles.

Through continued intergovernmental coordination, the City will work with the County to promote the long-term maintenance of this vital transportation facility. The City will review the County's bridge inspection and maintenance reports. The City will also examine any inspection reports responding to natural or human-caused events that may affect the structural integrity of the facility in order to identify appropriate actions.

Policy 3.9. Acquire and maintain the equipment necessary to keep evacuation routes open prior to and during an evacuation and to reopen roadways following a storm.

Policy 3.10. Continue implementation of the tree management program to lessen the risk of trees being blown across the evacuation route. The City will identify and trim those trees that pose a potential threat or impediment to evacuation.

Policy 3.11. Continue to evaluate and improve the City's operational evacuation plan.

Policy 3.12. Cooperate with Lee County's program to provide shelter capabilities adequate to safeguard the public against the effects of hurricanes and tropical storms. On-Island refuge is not a substitute for evacuation.

Objective 4

Continue implementation of the program to encourage people to evacuate the Island when an evacuation order is issued.

Policy 4.1. Continue implementation of an education program to inform residents and visitors of proper response to hurricane evacuation orders.

Objective 5

Provide immediate recovery response to post-hurricane situations.

Policy 5.1. Continue to evaluate and improve the City's Emergency Management Plan, including post-disaster redevelopment.

Policy 5.2. The City will implement its post-disaster Redevelopment plan, as applicable.

- A Recovery Task Force directed by the City Council will conduct a structural safety damage assessment.
- Priority in redevelopment permitting will be given to repair and clean-up activities needed to protect public health, safety and welfare.

- Remain up-to-date on Federal and State requirements to qualify the City and its residents for disaster relief assistance.

Policy 5.3. Ensure that the Future Land Use Map series of the *Sanibel Plan* appropriately coordinates land uses with the results of hazard mitigation reports prepared following natural disasters affecting the City of Sanibel.

Objective 6

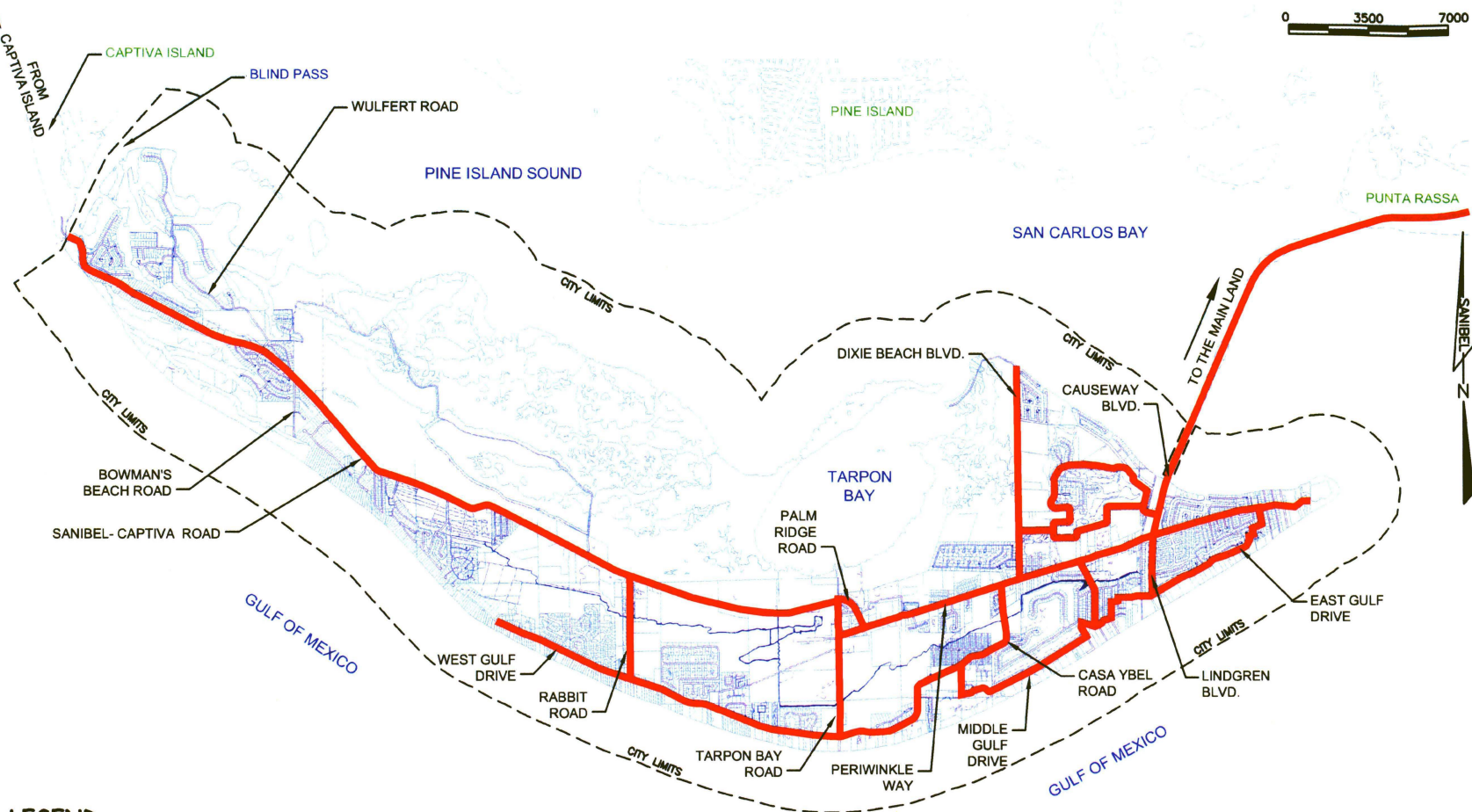
Ensure continued implementation of development regulations and building code requirements that are responsive to the threats posed by the high winds and flooding associated with tropical storms.

Policy 6.1. New and redevelopment activities will comply with requirements of the Federal Flood Insurance Program, as implemented by the Land Development Code.

Policy 6.2. Replacement or reconstruction of non-conforming structures which have been substantially damaged in excess of 50 percent of the market value of the structure or destroyed, will be done in conformance with the requirements of the Land Development Code in effect when reconstruction occurs.

Policy 6.3. Revise the Land Development Code, as appropriate, to ensure continued responsiveness to threats posed by tropical storms.

Section 3.1.1.



LEGEND

— HURRICANE EVACUATION ROUTES

Policies from the Hurricane Safety Element:

Policy 3.1.

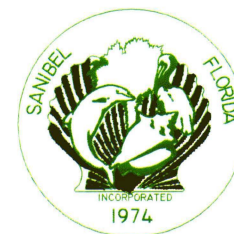
Implement a plan to operationally provide two lanes for outbound evacuation traffic on Sanibel's evacuation route as a means of reducing evacuation clearance times.

Policy 3.2. In cooperation with Lee County and the Florida Department of Economic Opportunity, develop an interlocal agreement to develop and implement a plan to operationally provide two lanes of outbound evacuation traffic across the Sanibel Causeway as a means to reduce evacuation clearance times.

Source: The Sanibel Emergency Management Plan
This graphic was redrawn from the 1997
Sanibel Plan.

The principle source of the base map used in this illustration is from the Lee County Property Appraiser's Office.

Prepared by the Planning Department.



INFORMATIONAL
NON-REGULATORY
ILLUSTRATION

HURRICANE EVACUATION ROUTES

Part 3.2

Protection of Natural, Environmental, Economic and Scenic Resources

The preservation and conservation of resources is a key component of the *Sanibel Plan* and its Vision Statement and a key objective to retain the character of the community.

This part of the *Sanibel Plan* establishes goals, objectives and policies for coastal zone protection, conservation, natural groundwater aquifer recharge, historic preservation and scenic preservation.

Section 3.2.1. Coastal Zone Protection Element

Pursuant to Sections 163.3177(6)(g) and 163.3178, Florida Statutes.

Background Discussion

The purpose of this element is to plan for development activities and restrict such activities that would damage or destroy coastal resources and to protect human life and limit public expenditures in areas subject to destruction by natural disaster.

A summary of the data and analyses for this element of the *Sanibel Plan*, pursuant to Sections 163.3177(6)(g) and 163.3178, Florida Statutes is provided in this sub-section.

The City of Sanibel is in the Coastal Area and in the Coastal High-Hazard Area.

The Coastal High-Hazard Area is the area below the elevation of the Category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model.

Boundaries of the Coastal Area and Coastal High-Hazard Area are established:

- As defined by Florida Statutes, Section 163.3178(2)(h);
- As defined by the Coastal Zone Management Act of 1972, Volume 16, United States Codes, 1453-a

- As defined by the Florida Coastal Management Act of 1978, Section 380, Part II, Florida Statutes

The City of Sanibel is entirely within the coastal zone.

Pursuant to *Florida Statutes, Section 163.3178*, most of the City of Sanibel is within the Coastal High-Hazard Area. An illustration showing the Coastal High-Hazard Area is provided in this Section.

All resources of the Island are coastal resources. Therefore, all elements of the *Sanibel Plan* are concerned with coastal management. For practical considerations, the *Sanibel Plan* considers all lands within the City as being located in the Coastal Area and in the Coastal High-Hazard Area.

Water-Dependent and Water-Related Uses

Water-dependent uses in the City of Sanibel consist of recreational beaches, marinas, boat ramps and a fishing pier. Water-related uses in the City consist of residential uses and resort housing uses.

Most of the shoreline of the City of Sanibel is currently developed. The Future Land Use Element projects only conservation, recreation and residential uses on the shoreline. Any new facilities that provide boat access to water must be developed in a manner that is compatible with the preservation of the natural scenic beauty and residential use of the shoreline.

Infrastructure

The infrastructure in the City of Sanibel includes road-ways, wastewater treatment facilities, potable water facilities and

drainage facilities. Community facilities such as administration buildings, a library, a public elementary/middle school, cultural facilities and active recreational facilities are also located in the coastal zone.

The City of Sanibel is connected to the mainland by the Sanibel Causeway and to Captiva Island by a bridge. Both of these facilities are under the jurisdiction of Lee County.

In the City of Sanibel there are no existing or planned public shore protection structures on the Gulf of Mexico. There are existing upland shoreline structures; however, these one-time protection structures are currently located a considerable distance landward of mean high water.

Natural Resources

Areas of coastal flooding, within the 100-Year Floodplain, include all the land area within the City of Sanibel.

Since all of the City of Sanibel is within the coastal area, and therefore the entire *Sanibel Plan* addresses coastal management, the balance of the Coastal Zone Protection Element emphasizes Sanibel's nearshore coastal zone.

Sanibel Island has approximately 40 miles of shoreline, 15 of which consist of sandy beaches. Beaches are one of the geological characteristics that distinguish the City of Sanibel as a unique place. These beaches have inspired residents to preserve existing natural resources and to restore those that have been compromised by human influences. This effort is apparent in shoreline preservation. Today, Sanibel's coastline contains very little coastal armoring, which may disrupt the natural beach environment in a variety of ways and may also act as a barrier to recreational access along the

beach. The importance of the City of Sanibel's beaches is scenic and historic as well as environmental and economic.

Sanibel's nearshore coastal zone includes two very divergent plant communities, those of the mangrove forest and those of the beach strand and beach ridges. These are opposite in appearance and in many other characteristics, yet perform many of the same very important functions with regard to environmental equilibrium.

The beach and dune system in the City of Sanibel runs along the Gulf of Mexico from Blind Pass to Point Ybel and along San Carlos Bay from Point Ybel to Tarpon Bay. The elevation of the Gulf beach ridge is generally five to six feet above mean sea level, with the highest elevation of approximately 12 feet.

The beach is the most obviously dynamic, often ephemeral, landscape in man's experience. It absorbs the force of the sea and provides habitat and feeding for a myriad of life forms along with recreational resources that are greatly valued. Because of the form and location of Sanibel's beaches, during storm surges they are powerfully battered by wind and water; however, they are exceptionally attractive during long periods of good weather and, as a dividend, yield such a rich array of seashells that they are famous the world over. The intense storms of wind and rain that deposit shells and shell fragments on the beach at the same time inundate and wash away portions of it. These are responsible for dramatic shoreline accretion and erosion.

The value of mangroves for habitat, as a food source and as a wave buffer is becoming universally acknowledged. Mangroves form a system that permits the highest water quality and the most suitable estuarine habitat.

All species of mangroves are critically important to the Island and estuarine ecosystem and must be preserved as an invaluable resource.

Beach Management

The beach is an area where the effects of human activities can be either positive and constructive or damaging.

The overall philosophy of managing beaches is not only for people but for wildlife. In general, that philosophy is to let nature take its course. This includes a non-intervention policy by the City of Sanibel in regard to erosion processes and active encouragement of retreat from eroding stretches of beach. However, the City does encourage dune restoration.

A preference is given to non-structural solutions for shoreline protection and stabilization such as beach renourishment, revegetation and locating or redeveloping structures sufficiently far back from harm's way, rather than reliance on structural solutions. Structural solutions such as breakwaters, bulkheads and seawalls provide, at times, short-term solutions to shoreline stabilization, but do so at the expense of adversely impacting adjoining properties and inhibiting customary access to shorelines.

In 1995, the City of Sanibel completed the Sanibel Island Beach Management Plan. Following an extensive study, a comprehensive report was prepared by the City's Natural Resource Director, Robert K. Loflin, Ph.D. and the consulting firm of Humiston and Moore Engineers. The resultant plan contains the following components: coastal processes, natural resources, coastal activities and impacts, beach access and

public lands, beach management goals and objectives and management strategies.

Beach Renourishment Areas

The City of Sanibel relies on the natural functions of the beach and dune system for shoreline protection. The maintenance of the natural function of the Gulf Beach, Gulf Beach Ridge, Bay Beach and Mangrove Forest Zones provides the primary measures to protect beaches and dunes.

The City of Sanibel undertook the shoreline and beach renourishment project in the Blind Pass Area at the extreme northern end of Sanibel to offset erosion attributed to the Blind Pass groin/jetty, and in the Gulf Pines/Gulf Shores area. It is anticipated that the north end project will require supplemental renourishment.

Outside the jurisdiction of the City of Sanibel, to the north on Captiva Island, continued beach renourishment is planned. Because the management of beaches on Captiva Island (in unincorporated Lee County) has significantly impacted the shoreline of Sanibel, it is imperative that this situation be addressed in the Intergovernmental Coordination Element of the Plan. To that end, in February 2006, Lee County and the Captiva Erosion Prevention District completed a beach renourishment project that included Sanibel's northernmost shoreline, Blind Pass and Bowman's Beach.

Estuarine Water Quality

The City of Sanibel contains a large area of Mangrove Forest. The Mangrove Forest is predominantly in the J. N. "Ding" Darling National Wildlife Refuge, under the authority of the

Federal government. The Mangrove Forest abuts the Pine Island Sound Aquatic Preserve.

In 2006, a culvert was constructed under Sanibel-Captiva Road linking Clam Bayou and Dinkins Bayou to improve the water quality of these waters in the Aquatic Preserve.

Stormwater discharge into the estuary is controlled by the Tarpon Bay weir. Other discharges into coastal waters, although not directly into the estuary, are tidal canals, the Shell Harbor canal inlet, Sanibel Harbors canal inlet and Sanibel Isles canal inlet. However, freshwater enters the estuary principally from outside the jurisdiction of the City.

The Island's estuaries and aquatic habitats are being negatively impacted by the lack of a comprehensive and environmentally sound water management plan for Lake Okeechobee and the resulting water releases from the Lake into the Caloosahatchee River and Estuary. The nutrient-rich water releases into the Caloosahatchee River and Estuary have resulted in the growth of toxic blue-green algae blooms and red drift algae outbreaks. These blooms have been associated with fish kills, impacts on shellfish, destruction of seagrass beds, mangroves and breeding grounds for many fish species, and impacts on recreational and commercial fishing. This nutrient runoff may have also contributed to a perceived long-term trend of more frequent, more severe and longer duration of destructive red tide events and severe impacts to the J. N. "Ding" Darling National Wildlife Refuge and aquatic preserves. In addition, water released from Lake Okeechobee also carries large amounts of suspended sediment that is deposited in the mouth of the river and can be re-suspended by wave action. These impacts could lead to serious degradation in estuarine water quality and potentially

irreversible impacts to seagrasses and other estuarine resources.

The Island Water Association deactivated its brine water discharge into the Gulf of Mexico and now uses an injection well to discharge brine deep into the ground.

In addition to these limited numbers of point source discharges into coastal waters, there are land uses in the City of Sanibel that may contribute nonpoint source pollution into coastal waters. These land uses are marinas, boat docks and golf courses.

The City has actively pursued Island-wide conversion from septic systems to central sewage treatment in accordance with the City's Master Plan for Wastewater Treatment. This conversion has been the single most critical action to protect water quality. Through implementation of the Master Plan for Wastewater Treatment, nearly 100 percent of the land uses in the City of Sanibel are connected to the Sanibel Sewer System.

The potential for disaster from oil spills looms over every beach community and even more so for areas with mangrove forests. Continued vigilance, as practiced by the Sanibel City Council, to object to any and all offshore oil exploration plans is necessary to minimize the likelihood for an oil spill in the Gulf to contaminate local beaches.

There are no proposed facilities in this Plan that will alter the circulation patterns of the estuary.

Coastal Access and Carrying Capacity of the Beach

The City of Sanibel has a large number of public accesses to the beach. These public beach access facilities are widely distributed throughout the Island. All of the public beach access facilities are supported by limited parking areas; however, there are large parking areas at the major beach parks. The Resort Housing District provides private beach access for a significant percentage of Sanibel's seasonal population.

The maintenance of a natural beach as a vital natural resource is important to the community's quality of life and the economy of the City. For a variety of environmental, social, economic and historic reasons, it is important that the carrying capacity of the beach for wildlife is not diminished.

The carrying capacity and environmental quality of the Island's natural coastal areas cannot be sustained if both off-Island and on-Island physical growth and visitation pressures are not addressed. Lee County's permanent population grew to 618,754 in 2010. During the peak winter season, the Island's population increases, on average, to 31,000 people. A record 4,686,000 tourists visited Lee County in 2011, many attracted by the County's beaches. Sanibel's world class beaches constitute about one third of the linear mileage of beaches in Lee County accessible by car.

To preserve the natural condition of Sanibel beaches, there is a need to determine acceptable limits of change, if any, to the Gulf Beach Zone. The establishment of new public accessways to the beach and the expansion of parking areas at existing beach accessways should only be approved if these areas of human activity will not cause further infringement on the carrying capacity of the beach for wildlife.

The City will continue to monitor the conditions of its beaches over time and assess the extent to which any observable negative changes can be attributed to human activities. The City should broaden this monitoring of its beaches, when necessary, to better establish baseline conditions. The City should look for cost-effective ways to include measurements of human activities on the beach, as part of its monitoring of the beaches. The City should work in consultation with the efforts of organizations such as the U.S. Fish & Wildlife Service, the Florida Fish & Wildlife Conservation Commission, the Florida Department of Environmental Protection, the Sanibel Captiva Conservation Foundation and Florida Gulf Coast University, that have the interest, knowledge and ability to help determine the carrying capacity of the beaches on Sanibel, to ensure that this important resource is maintained.

The City may need to implement programs and measures that further protect the beaches on Sanibel, if development and other human activity is diminishing the viability of this important natural resource.

There are two marinas in the City of Sanibel providing dock space for approximately 100 boats. Canals and waterways adjacent to many private homes and condominiums provide additional boat dock space.

The City of Sanibel provides a public fishing pier on San Carlos Bay and a public boat ramp facility (two ramps) near the Sanibel Causeway.

A need for additional boat ramps and fishing piers has not been identified in the Recreation and Open Space Element of this Plan. Although not identified as a need, the Plan for Recreation and Open Space suggests that the City explore the

feasibility of providing additional opportunities for boat access to water, provided that no additional inlets are cut from the Gulf or the bay.

Plan for Coastal Zone Protection

The *Sanibel Plan*, in all its elements, establishes policies and regulations necessary to assure orderly and balanced use and preservation consistent with sound conservation principles, of all living and nonliving coastal resources. The ecological planning principles and assumptions to be used in the determination of suitability and extent of permitted development are established in the Purpose of this Plan, and in the Conservation Element and the Future Land Use Element. The Land Development Code includes environmental performance standards so that irreversible and irretrievable commitments of coastal zone resources are avoided on Sanibel.

Management and regulatory techniques, consistent with the Sanibel Island Beach Management Plan, shall be set forth in the Land Development Code.

It is the intent of this Plan for Coastal Zone Protection to set forth policies which are not inconsistent with the State of Florida regulations and criteria in order to preserve the natural beach and dune system in all beach areas, both natural and developed, and to restore and maintain a natural dune in developed areas by rigorously restricting the use of armoring for erosion control purposes.

Provisions of the Plan

1. The City of Sanibel should maintain its program of periodic monitoring of beach profiles and beach

conditions. An annual report should be prepared based on the monitoring data. A major objective for the long-term ecological health of Sanibel's beaches is to restore the dune system (Upper Beach Zone) to the point where it functions as a contiguous and intact habitat. Such an integrated upper beach will not only provide for the mutually beneficial coexistence of man and natural flora and fauna as fellow coastal residents but will also function in accumulating and stabilizing vital sands in a continuous protective barrier.

2. Maintain natural beaches to accommodate both tourists and residents for recreational purposes in order to enhance property values and tourism and reduce competition for limited beach space between humans and wildlife.
3. Maintain natural beaches for the protection they afford against erosion from severe but non dune-overtopping storms and to avoid damage to upland structures from erosion caused by those storms.
4. Maintain natural beaches for the protection they afford against erosion from severe but non dune-overtopping storms to avoid damage to evacuation routes from erosion caused by those storms.
5. Dune enhancement may be accomplished by regulating activities that are detrimental to natural dune vegetation and sand accumulation, such as illegal landscape trimming of natural vegetation, unrestricted pedestrian access and beach furniture and recreational equipment deployment and storage. These may be

accomplished through more thorough enforcement of restrictions on trimming vegetation, improved pedestrian accessways, such as dune walkovers, and better regulation of beach paraphernalia.

6. It should be the policy of the City of Sanibel to consider coastal armoring only as an alternative of last resort for the protection of public infrastructure. Additionally, in cases where coastal armoring is considered acceptable, it should be accompanied by a beach nourishment project, except in certain site-specific situations on the bay shoreline that involve closing a gap in an otherwise continuously armored section of shoreline. Sand bags may be considered as a temporary solution to erosion in emergency situations, and conventional armoring may be considered for the protection of vital public interests such as hurricane evacuation routes. Under all other circumstances, the use of armoring shall generally be prohibited along the Sanibel Island coastline.
7. Existing bayfront seawalls should have rip-rap revetments placed in front of them (unless determined to be a threat to the endangered smalltooth sawfish) to reduce wave interaction with the flat vertical surface as long as such revetments do not interfere with seagrass beds and the seawall alignment is reasonable. Such rip-rap areas as well as existing rip-rap revetments along the bay shoreline should be designed as planters to accommodate planting with mangrove and buttonwood.
8. It should be the policy of the City of Sanibel to provide official input to the State during the State permit application review process for activities which have a high potential for affecting the sand budget. These activities include shoreline armoring with seawalls or revetments, groins, the jetty at Blind Pass, breakwaters, and the use of near shore shoals as a source of sand for beach nourishment. This will ensure that the permit includes conditions for adequate monitoring and mitigation.
9. Roads damaged due to beach erosion should be repaired on a higher priority than the beach, as a safety issue, if the roads serve as hurricane evacuation routes. It is recommended that such evacuation routes be repaired and be protected with armoring. Such sections of shoreline armored out of necessity must be restored with beach nourishment, leaving the armoring buried as defense against future storm damage.
10. Sand overwash deposited in residential areas or on roads, which requires removal in the aftermath of a storm, should be restored to the beach and dune system.
11. If inlet closure causes environmental degradation in the interior waterway, these inlets should be studied to determine if reopening the inlet through either mechanical or hydraulic dredging would be appropriate. The decision on reopening the inlet should be based on water quality issues, fisheries issues or mangrove and other sensitive wetland issues. If activities such as sand

placement for nourishment of adjacent beaches contribute to the closure, such that the closure cannot be considered a natural event, then the inlet should be reopened to restore natural processes.

12. Any dune walkovers destroyed by storms should be repaired because they protect the natural dune and dune vegetation that allows the dune to grow through the trapping of windblown sand.
13. In cases where structures are considered to impede or have the potential to impede pedestrian traffic along the coastline, such structures should be prohibited, or if existing, altered or removed, so as to maintain lateral access along the shoreline.
14. The prohibition on live shelling should be continued and widely advertised, accompanied by an education program. Severe violations should be considered serious enough to cite and fine perpetrators.
15. The prohibition on docks in San Carlos Bay where they constitute a threat to seagrasses should be continued.
16. The use of vehicles on the beach should continue to be regulated. Approval should be given only for beneficial purposes such as turtle patrol and removal of exotic vegetation, as well as approved police patrols and emergency vehicles responding to emergencies that occur on the beach.
17. To assist both shorebirds and shell-seekers and to maintain the natural function and appearance of the beach, raking and scraping of naturally occurring beach wrack should be prohibited, except when undertaken or authorized by the City in the interest of public health, safety and welfare. During certain periods of the year, during nesting season for the least terns and snowy plovers, raking the beach may be in violation of the Federal Endangered Species Act and State-protected species regulations.
18. Only permit lighting that conforms to standards that will not interfere with turtle nesting or hatchlings return to the sea and that will not interfere with the natural appearance of the beach.
19. Beach areas where nesting pairs of shorebirds are observed should be designated as off limits to predatory creatures, such as feral cats, iguanas, and raccoons.
20. The Lee County Emergency Management Plan for oil spills needs to be evaluated for sufficiency in protecting sensitive mangrove and other wetland areas. The plan should include a provision for rapid deployment of oil booms at strategic locations such as Blind Pass, Clam Pass and the entrance of Tarpon Bay. The ability to rapidly seal off these strategic locations could prevent contamination of large sections of shoreline, and equipment for this should therefore be available locally. Additionally, any perceived changes in potential for oil spills, either from offshore or

inland waterway operations, should trigger a review of the Emergency Management Plan by the Lee County and City of Sanibel staffs.

Goals, Objectives and Policies

Goal Statement:

Protect and appropriately manage the natural resources of the coastal area to ensure the conservation or enhancement of the natural functions of the coastal ecosystem as the development anticipated in the Future Land Use Element of the Plan occurs and prohibit new development and redevelopment for human habitation in the Gulf Beach and Bay Beach Zones.

Objective 1

To protect, conserve or enhance wetlands, wildlife habitat and living marine resources, ensure that the natural functions of the City's ecological zones are maintained by continued implementation of the development regulations and performance standards established in the Land Development Code.

Policy 1.1. Ensure that the Future Land Use Element of this Plan is consistent with the maintenance and enhancement of the natural functions of the City's ecological zones by including in the Land Development Code varying limitations on development according to the ecological zone and best management practices.

Policy 1.2. Retain low intensity use for the interior (Lowland Wetlands Zone) and tidal (Mangrove Forest

Zone) wetlands, prohibit commercial and intensive land uses in these zones.

Policy 1.3. Ensure maintenance of the natural functions of the Interior Wetlands Conservation District by continued implementation of the development regulations and performance standards established in the Land Development Code and best management practices.

Policy 1.4. Ensure that dredge and fill activities are undertaken in compliance with Land Development Code requirements, as well as the requirements enforced by the Department of Environmental Protection, the South Florida Water Management District and the Army Corps of Engineers.

Policy 1.5. Public and private developments that produce unavoidable damage to wetland areas will implement wetland restoration or mitigation projects.

Policy 1.6. Encourage the dedication of portions of wetlands not utilized for development to the City or a nonprofit conservation entity by including incentives for such dedication in the Land Development Code.

Policy 1.7. General, not site specific, priorities for wetland acquisition will be established for the City's wetland acquisition program.

Policy 1.8. Continue the maintenance of wetlands acquired by or dedicated to the City and included in the Environmentally Sensitive Lands Conservation District so as to restore their natural condition, to the extent practicable.

Objective 2

To maintain or improve estuarine environmental quality, ensure that the natural functions of the mangrove and adjacent ecological zones are maintained by continued *implementation of the development regulations and performance standards established in the Land Development Code and best management practices.*

Policy 2.1. No new point source discharges for wastewater effluent into coastal waters should be permitted.

Policy 2.2. New point source discharges for stormwater runoff into coastal waters should be avoided to the extent possible.

Policy 2.3. New boat docks in the waters of the Pine Island Sound Aquatic Preserve will comply with the requirements of the Land Development Code and the requirements of the Department of Environmental Protection.

Policy 2.4. The City shall remain vigilant and proactive in its insistence that the regulation, design and operation of water releases from Lake Okeechobee will not further degrade the quality of coastal waters and the estuaries of Southwest Florida. It is the City's intent to convince the South Florida Water Management District and the U. S. Army Corps of Engineers to change policy so that the waters surrounding Sanibel are no longer threatened. The Sanibel City Council is approaching the water quality problem on three tracks:

- 1) through public education,
- 2) in the policy and legislative arena; and
- 3) as a last resort, through potential litigation.

Policy 2.5. The City shall also remain vigilant and proactive in its insistence that other jurisdictions adopt and implement policies to ensure that surface water runoff from other jurisdictions into the Caloosahatchee River watershed will not further degrade the quality of water in near Island coastal waters, including the estuaries within the boundaries of the City.

Objective 3

To protect the beach and dune system, thereby protecting shoreline development from coastal erosion and storm events, ensure that structures are setback landward of the 1974 Coastal Construction Control Line and that the natural functions of the Gulf Beach and Gulf Beach Ridge ecological zones are maintained by continued implementation of the development regulations and performance standards established in the Land Development Code and best management practices.

Policy 3.1. The City will continue to prohibit new development and redevelopment in the Gulf Beach Zone (i.e., seaward of the 1974 State Coastal Construction Control Line). Existing buildings located seaward of the 1974 Coastal Construction Control Line that are substantially damaged by a natural disaster are allowed to build-back in their pre-disaster location.

Lawfully existing accessory swimming pools and other accessory structures located in the Resort Housing District that are located seaward of the State's 1974 Coastal Construction Control Line may be reconstructed in their existing location provided there are no other feasible locations available on the site that are not in the Gulf Beach Zone.

Policy 3.2. The City's controlling beach management policy is to not interfere with the natural coastal processes. When intervention becomes necessary, the City will first take measures that work with, not against, the natural coastal processes. Only after this preferred policy has proven unworkable, will any type of shoreline hardening be considered.

Policy 3.3. Seawalls, bulkheads and other hardened shoreline structures that reflect, rather than absorb, wave energy are prohibited in the Gulf Beach Zone and on all properties with frontage on the Gulf of Mexico, except that hardened, rip-rap type structures which absorb wave energy may be installed to protect essential public infrastructure from damage or destruction caused by erosion.

Policy 3.4. Hardened shoreline structures, which primarily reflect, rather than absorb, wave energy are prohibited. A hardened shoreline structure which primarily absorbs, rather than reflects, wave energy may be permitted as a temporary and emergency measure, and as the only practical means of protecting upland major habitable structures which are in immediate danger of collapse from damage or destruction caused by coastal erosion. Additional factors to be considered are protection of the beach-

dune system, siting and design criteria for the protective structure, impacts on adjacent properties, preservation of public beach access, protection of native coastal vegetation and nesting marine turtles and their hatchlings. These structures must be removed once the immediate danger has passed and other remedial measures can be taken.

Policy 3.5. Excavation that results in lowering the elevation of the Gulf Beach Ridge is prohibited.

Policy 3.6. Removal of sand and sediments from the Gulf beach is prohibited; however, there may be instances where beach re-contouring may be appropriate to support beach preservation efforts.

Policy 3.7. Access to the beach for new development will be confined to elevated walkways, subject to approval required by state agencies.

Policy 3.8. Australian pines in the Gulf Beach Zone will be selectively thinned and replaced with hardy native dune vegetation.

Objective 4

Give priority to water-dependent and water-related uses that are compatible with the residential and conservation/open space character of the shoreline.

Policy 4.1. Priority ranking for water-dependent and water-related uses are as follows:

Conservation uses
Residential uses

Water-oriented recreation that is compatible with the conservation features of the beach, available to the public

Marinas, available to the public

Policy 4.2. Marinas will be located only in a Special Use District to ensure protection for the environment and compatibility with surrounding land uses, by establishing criteria and performance standards for the Special Use District, in accordance with procedures set forth in the Land Development Code.

Objective 5

To accommodate existing and projected public need, the numerous existing public accessways to the beach will be retained through the long-range planning period of this Plan.

Policy 5.1. The City will enforce the public access requirements of the Coastal Zone Protection Act of 1985.

Policy 5.2. Existing public accessways to the beach will be retained by new developments.

Objective 6

Ensure that development and building standards for new construction and redevelopment are appropriate for structures located in the coastal high-hazard area.

Policy 6.1. Implement development and building standards for coastal high-hazard area construction

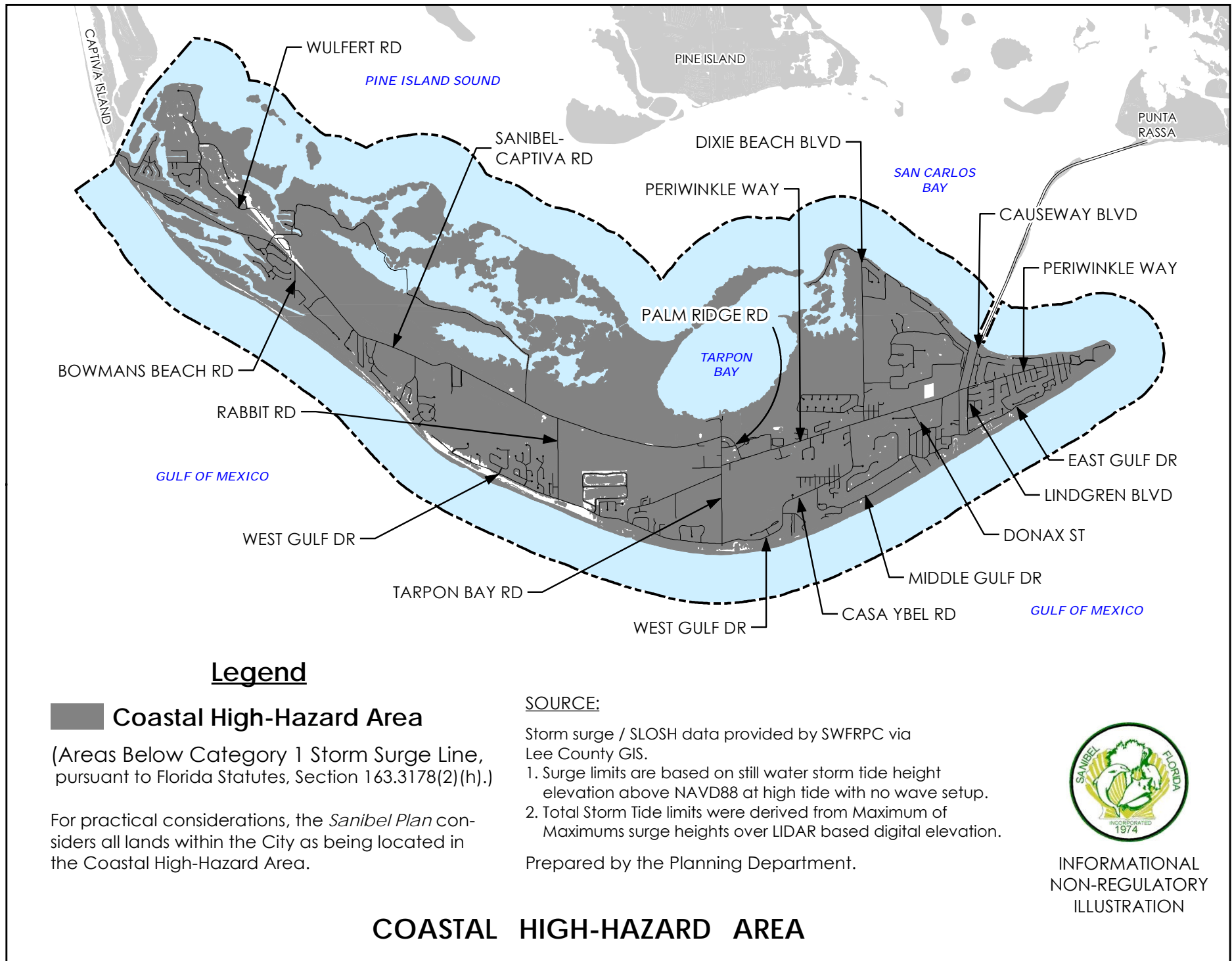
through the Sanibel Land Development Code and the Florida Building Code.

Objective 7

Ensure that preservation of the natural beaches and beach carrying capacity for wildlife is maintained for environmental, social, economic and historic reasons, all of which are essential to the community's quality of life and economy.

Policy 7.1. Development, redevelopment and commercial activities shall not measurably degrade the use of the beach habitat by indigenous and migratory species of wildlife.

Policy 7.2. Development and human activities shall be limited to a level of use that can be accommodated and continued without irreversible impairment of the beach's natural resource productivity.



Section 3.2.2. Conservation Element

Background Discussion

The purpose of the Conservation Element of the *Sanibel Plan* is to promote the conservation, use and protection of natural resources.

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(6)(d), Florida Statutes* is provided in this sub-section.

The City of Sanibel, located on a 12-mile long barrier Island off the coast of Southwest Florida, is in the subtropic region. This unique environment has produced an abundance of natural resources.

Some of these natural resources have been significantly altered by past development activities. However, since the original adoption of the *Sanibel Plan*, the alteration of natural resources has been reduced and many impacts of this alteration have been mitigated. The conservation and enhancement of natural resources has always been a goal of this Plan.

About two thirds of the total land area on Sanibel lies within conservation areas owned by private or governmental conservation agencies. Although this may seem very high, it is not when one considers the Vision Statement of this Plan and the fact that very little of Sanibel's land is suitable for residential and commercial development. Those areas most in need of protection are beaches, mangroves, wetlands and areas of rare and high quality vegetation such as the areas of West Indian flora. Most of the mangroves are included within existing conservation areas, primarily the J. N. "Ding" Darling National

Wildlife Refuge. Most land owned by the Sanibel-Captiva Conservation Foundation is in the interior freshwater wetlands. The Gulf beach and bay beach are protected as preservation districts as provided in this Plan. However, in upland areas known as "hardwood hammocks", a disappearing habitat is the "coastal scrub", home to gopher tortoises and unique desert-like plants, including joewoods.

The major thrust of the entire *Sanibel Plan* is committed to the objective set forth in the City Charter of Sanibel to conserve the "unique atmosphere and unusual natural environment" of this Island community. Thus, all elements of the Plan are interrelated with the City's major objective to conserve its natural resources for present and future generations to enjoy.

Sanibel's natural environment performs many valuable functions for humans at no cost. It buffers storm winds and flood tides, stabilizes the shoreline, purifies water, and maintains a freshwater system that supports a rich wildlife population and lush vegetation. These functions support the health, safety and welfare of every Sanibel resident and must be preserved.

Different parts of the Island contribute in varying degrees to each particular function. For planning purposes, the Island has been divided into ecological zones, each with individual characteristics, each making specific contributions to health, safety and welfare, and each with varying tolerances to the range of human activities. Six ecological zones have been identified on Sanibel, three of which are further divided into subareas, Gulf Beach, Gulf Beach Ridge, Freshwater Wetlands, Mid-Island Ridge, Mangrove Forest and Bay Beach. The Gulf Beach Zone is subdivided into Gulf Front Beach and Gulf Back Beach. The Freshwater Wetland is composed of Upland and Lowland subareas. A Blind Pass Zone is designated in the Blind Pass area.

Ecological Zones

In general, Sanibel is a collection of truncated ridge-and-swale systems formed at varying sea levels. Hence, the Mid-Island Ridge is a series of ridge set truncations that forms a nearly continuous ridge of higher elevations. In some places the roadbed of the Sanibel-Captiva Road links or extends these elevations. The Gulf Beach Ridge is also a series of ridge sets which interact with the primary dune to create a nearly continuous ridge at an elevation of generally five feet or greater. The freshwater wetlands of the interior, while acting as a single basin with a connected surface water table, are actually a collection of ridges and swales. The ridges vary in elevation from approximately six inches to several feet. The swales and low ridges are frequently inundated while the more well-defined ridges become submerged only occasionally.

Gulf Beach Zone

The Gulf Beach Zone includes all land seaward of the 1974 Coastal Construction Control Line. This line was revised landward by the State in 1991; however, the City continues to use the 1974 Coastal Construction Control Line to define the landward extent of this Preservation District: the Gulf Beach Zone.

The Gulf Front Beach is the most active beach zone and includes the area between mean high water and the City's boundary one-half mile offshore. Sand in this zone is in constant motion. Sand migrates between the primary dune and offshore bars and is transported up and down the coast by longshore currents. Examination of historical surveys and aerial photographs shows that erosion and accretion of sand along the beaches is an ongoing dynamic process. This zone maintains several functions critical to public health, safety and welfare. It is the Island's first defense in the event of storm and flood, when the impact

of waves erodes the sand reservoir in the berm. The natural form of the Gulf Beach Zone is a response to the natural processes of wind, currents and waves. Undisturbed, it is in a state of balance with natural forces, thus maintaining the shoreline. This area also supports much of the marine life for which Sanibel is famous, and is an important feeding area for Island wildlife.

The Gulf Back Beach, though less volatile than the front beach, also absorbs considerable impact from storm-generated wind and waves. This is the area between mean high water and the 1974 Coastal Construction Control Line. It is a reservoir of sand that may be eroded after the primary dune in a severe storm, thus protecting property further inland on the Beach Ridge. The dunes are an important nesting area for wildlife, the loggerhead turtle being a prime example. The vegetation of the Back Beach is particularly important, as it stabilizes and holds the sand.

Both components of the Gulf Beach Zone have a very low tolerance to man's activities. Removal of sand, disposal of stormwater runoff, excessive foot traffic or any vehicular traffic can quickly induce major erosion and other impacts on the beach. Strict regulations are, therefore, required to maintain this zone. Removal of sediments from the beach should be avoided and construction of any sort that would change the configuration of the beach or inhibit sand movement should be undertaken only as a last resort in efforts to preserve the beach or protect vital infrastructure. Wildlife access to the beach should be maintained and public access to the beach should be confined to narrow paths and elevated walkways in heavily used areas such as resorts and public parks. Because of their shallow root system and propensity to form monocultures, Australian pines (*Casuarina sp.*) are not suitable plants in this zone and

should be selectively thinned and replaced with hardy dune vegetation.

Bay Beach Zone

The Bay Beach Zone, an “active beach” zone, extends along the Island’s bay shoreline between a 50-foot setback from the mean high water line to the City’s boundary one-half mile off-shore. Although the Bay Beach is a lower energy beach than the Gulf Beach, it nevertheless serves the same valuable storm and flood protection, shoreline stabilization, marine life and wildlife habitat and feeding functions. The natural processes are similar and so too are the constraints to development. Regulations similar to those outlined for the Gulf Beach Zone are required to maintain the functions of this zone.

Mangrove Zone

The Mangrove Zone includes black (*Avicennia germinans*), red (*Rhizophora mangle*), as well as, all buttonwood (*Conocarpus erecta*) and white (*Laguncularia racemosa*) mangrove areas that are tidal and less than three feet in elevation (1.8 feet NAVD) and the tidal flats within and around them. This zone includes most of the bay portions of Sanibel. In ecological and energy terms, no zone is more valuable and efficient. The number of jobs done for humans at no cost (save the price of preserving mangroves) is not exceeded by any other zone. Mangroves protect public health, safety and welfare by buffering storm winds and flood tides from the bay, by stabilizing and extending the shoreline, by maintaining and improving water quality, by protecting the highly productive marine ecosystem, and providing food, shelter and nesting areas for wildlife. This zone also has a low tolerance for alteration by man. Its existence is dependent on the regulation of activities in adjacent areas.

Wetlands Zone

The Wetlands Zone is the stormwater drainage watershed of the Island. Frequently, it forms a fresh surface water reservoir. Much of the Island’s interior is in this zone that essentially consists of a single large basin. The Freshwater Wetlands Zone is actually composed of parallel systems of ridges and swales with corresponding bands of vegetation that tolerate either persistent inundation within the swales or fluctuating wet/dry conditions on the ridges. There are two subareas within this zone: Lowland Wetlands and Upland Wetlands. The lowland area is composed of low ridges and wide swales; the upland consists of higher, broader ridges and narrower swales. The entire zone is the major recharge area for the shallow freshwater aquifer.

Brazilian pepper trees had infested hundreds of acres of the interior wetlands, drastically reducing their function as wildlife habitat. Exotic plant control programs are ongoing but efforts need to be continued to restore degraded areas of this vital system. The City is well into the successful implementation of its program of mandatory removal of Brazilian pepper. Brazilian pepper has been removed from about 3,200 acres, 80 percent of the 4,000 acres of non-conservation lands in the program.

Lowland Wetlands

The lowland area typically experiences extended periods of immersion each year. Since it is lower than the surrounding area, it serves as a storage area for surface waters until they are absorbed into the aquifer, evaporated or routed to another location. So long as the elevations in the lowlands are not substantially increased by filling, this area will serve as retention areas and high quality wetland habitat for wildlife

while reducing saltwater intrusion into the shallow ground-water aquifer.

This zone has a “fire ecology”. Periodic fires burn off accumulated dead plants, release nutrients to the soil and kill invading woody shrubs and trees. These large recurring wild fires are a hazard to human settlement in this area but are essential to the maintenance of this zone. Controlled or prescribed burns intentionally set by land managers can continue this natural process while limiting risks to private property. Controlled fire is being effectively used in management programs for conservation lands. Conservation lands are managed to reduce the risk of fire damage to adjoining lands and land uses, whether the fire is naturally caused or is a controlled or prescribed burn.

This zone also has the capacity to maintain and improve water quality, and provides food, shelter, water and nesting areas to many of Sanibel’s most renowned wildlife, including the American alligator and numerous species of wading birds.

Excavation of the aquiclude, the placement of fill, the impediment or impoundment of natural water flow, the disruption or alteration of natural drainage channels and the use of septic tanks are either prohibited or controlled through development performance standards. Impervious paving and the clearance of native vegetation are regulated in a fashion to minimize adverse impacts. Storm runoff from paved or developed areas is to be detained and dispersed slowly to the natural hydrologic system. Programs of fire management and water level control should be maintained. Wildlife corridors should be established connecting nature preserves to the Sanibel River, and providing for wildlife movement along the River.

Upland Wetlands

The upland area is characterized by less frequent flooding than the lowland area and has more upland vegetation types. This area is more tolerant to human activities than the lowlands, and therefore the performance standards need not be as strict as those for the lowlands. The placement of fill, excavation of the aquiclude and the use of septic tanks are prohibited or controlled by City regulations. The impoundment of natural water flow or disruption of natural drainage channels is also controlled. Wildlife corridors should be established connecting nature preserves to the Sanibel River. The Surface Water Management Plan, adopted in August of 1989, continues to be implemented in accordance with the provisions of the plan toward improving the wetland system of the Sanibel River, to enhance water quality and vegetative and wildlife habitat, while reducing the severity of major flooding events for those residing in wetland areas. To further restore the historic hydro-period in the freshwater wetlands, an additional weir is being considered. This weir can elevate the seasonal water table in the conservation lands to the west of the Sanibel Highlands subdivision and east of Tarpon Bay Road.

The acquisition and restoration of environmentally sensitive conservation lands has been a major accomplishment for the community. The conservation efforts by the U.S. Fish & Wildlife Service, the State of Florida, the Sanibel-Captiva Conservation Foundation and the City of Sanibel are coordinated to manage these essential natural resources. Acquisition and restoration efforts are highlighted by the Sanibel Gardens Preserve and Pond Apple Park projects.

Gulf Beach Ridge Zone

The Gulf Beach Ridge Zone is the major ridge dividing the Gulf from the wetlands in the interior. It extends to the western end of the Island and includes upland areas of Blind Pass Keys. Much of the Blind Pass area is included in this zone because of its relatively recent formation. The Gulf Beach Ridge Zone serves many valuable functions in the maintenance of the health, safety and welfare of Sanibel residents. The ridge buffers flood tides and storm winds and prevents increased flooding in the interior (unless overtopped by waves) and contributes to shoreline stabilization. Maintenance of elevation and vegetation are the keys to the protection of these valuable functions. Vegetation stabilizes the ridge and prevents erosion of the soil. Much freshwater runoff enters the ground in the Gulf Beach Ridge Zone, halting inward intrusion of saltwater from the Gulf and thus maintaining the extent of the fresh water lens. Soil and vegetation in the ridge filter runoff and protect water quality. Although this zone is crucial to health, safety and welfare, it is more tolerant to residential development than other more sensitive zones on the Island. An exception to this is the coastal scrub habitat, which supports many plant and animal species listed as threatened, and is rapidly being lost to development and intrusion by hardwoods and exotic trees. Another exception is the Blind Pass area, which is extremely dynamic and unstable in nature and hazardous to human settlement. The Blind Pass Zone is discussed separately later. Excavation that results in lowering the elevation of the ridge or in penetration of the aquiclude is prohibited. Disruption or alteration of natural drainage channels is restricted. The use of septic tanks has been eliminated through implementation of the Master Plan for Wastewater Treatment. Storm runoff from paved or developed areas to the beach is strictly controlled. Impervious paving and clearance of native vegetation is restricted. The planting of native beach ridge vegetation should

be encouraged in areas which are not well vegetated or that are dominated by exotic trees, such as Brazilian pepper.

Blind Pass Zone

The Blind Pass area is the youngest and least stable part of the Island. It is an inlet system very susceptible to dramatic change both in a storm and over time. One hundred years ago, most of the Blind Pass area existing today was non-existent. Over the past century, this area has been constantly changing; the shoreline has shifted and accreted and eroded. The loss of sand into inlets is, at most, temporary, and even then only where there are new inlets, which do not yet have tidal deltas, does this become a major process. Any sediment that is trapped in the inlet itself is ultimately moved either in or out into the tidal delta storage bins. Since the ebb currents are generally the dominant inlet force, most sand moving into an inlet will ultimately be deposited in an offshore ebb delta. The shape of the ebb delta and the sediment movement within the delta is strongly controlled by the interaction of the ebb and flood currents with the offshore wave system and the longshore currents. The sand stored in the ebb delta is now available for littoral transport onto the downdrift beach system. Also, high energy storms and floods flush out the inlet and move the sand laterally to be used to absorb the storm energy in the adjacent forebeach areas. Thus an inlet system plays an important role in sediment storage for use as an energy sponge during storms and has built-in sediment bypass mechanisms. Consequently, inlet systems represent an integral part of the overall sediment budget of the coastal system and contribute to the overall natural ability of the system to roll with the energy punches with minimal adverse effects. Modification and/or stabilization of an inlet will limit or eliminate this ability, increasing the potential for accelerated shoreline erosion resulting from major storms.

All standards for the Gulf Beach Ridge Zone should be applied here with several further restrictions in changing or developing this area. Permanent human settlement in this high hazard area should be restricted to very low density or prohibited. Any activity which would result in the alteration of or interference with inlet dynamics and island-building functions in this area should be carefully evaluated and avoided as much as possible.

Mid-Island Ridge Zone

This zone comprises the major ridges along much of the central axis of the Island and includes the Island's higher natural topographic elevations. In most areas, this zone divides the bay-mangrove watershed from the freshwater wetlands watershed. Like the Gulf Beach Ridge, this zone is important in providing storm and flood protection, in recharging the shallow freshwater aquifer, and in preventing degradation of water quality. This zone is the most tolerant for development with the application of regulations to protect crucial health, safety and welfare functions. Excavation that results in lowering the elevation of the ridge or in penetration of the aquiclude is prohibited. Storm runoff from paved or developed area is to be retarded and dispersed slowly to the natural hydrologic system. Natural drainage channels are not to be disrupted or altered. The use of septic tanks, impervious paving and the clearance of native vegetation is restricted.

Altered Land Zone

This is land altered by humans disturbing the natural topography, hydrology and vegetation of an area usually for real estate development purposes. In most cases, the area delineated on the Ecological Zones maps has been elevated to approximately four feet above mean sea level either by importing fill or by excavation within the site area. The purpose

of such modifications has been to transform low lying land that is often wet and unsuitable for development into high, dry land, associated in some cases with lakes, lagoons and canals formed by dredging below the water table. For planning purposes, only the larger areas of filled, cleared and builtout lands were mapped as Altered, thereby excluding spoil areas from mosquito ditches and canals that did not cover extensive areas. Some areas have been filled for 50 years or more, with subsequent reestablishment of grasses and woody plants. In such cases, they were not classified as Altered Land. Areas that were more recently altered and are classified as Altered Land frequently are bare but for the invasion of scattered weeds. Eventually, if left undisturbed, these lands may return to a natural state.

Delineation of the Ecological Zones

The designation of ecological zones is the basis for establishing the Official Zoning Map of the City of Sanibel.

The key that was used to determine and map ecological zones is provided as an appendix to this Plan.

Vegetation

The vegetation of Sanibel is a complex of many factors. Although it is subtropical by location, it contains a surprising number of communities despite its small size and lack of topographic variation. It embraces elements of tropical, subtropical and temperate flora, and it contains a confusion of foreign species established in the wild from cultivation or landscaping activities. These have taken advantage of disturbed areas and caused native species and even entire communities to all but disappear.

Sanibel's natural attributes are responsible for this wide ranging, sometimes lush vegetation. Except for fierce periodic storms, the climate is largely benign, with high seasonal rainfall, dazzling sunlit days, breezes and high humidity. These conditions permit luxurious, dense subtropical vegetation with rapid rates of succession and the incredible prospering of exotic species.

Since it is an Island, Sanibel's role as a provider of habitat for vegetation and wildlife is quite unique. Traditionally, islands have a more limited flora than their equivalent on the mainland. Although this is true of Sanibel, it is surprisingly diverse for an island. Some species are few in number, hinting that, at some time, there may have been a marked change in land use in the vicinity. It also indicates that these species might flourish if encouraged here. Islands are sites of specialization and hybridization. This may not be evident yet, but it is a process that goes on unless impeded by humans.

Development has brought additional indignities to the vegetation on the Island. Clearing methods, the introduction of ornamentals and manipulation of the drainage patterns have caused valuable vegetation to disappear. All of these activities have changed the Island. Fortunately, however, small vegetational remnants can still be seen from which the past can be reconstructed and from which historical vegetation could be increased.

The saline and brackish swampy areas are densely populated by red, black and white mangroves. Because of the nature of the substrate and due to very low light penetration, only special plants can coexist here. However, algae, fungi, a few halophytic shrubs and epiphytes do thrive. These mangrove areas are of such importance to the Island's ecosystem that they must be preserved and where they are disturbed, should be reclaimed.

All three coastal species, red (*Rhizophora mangle*), black (*Avicenna germinans*) and white (*Laguncularia racemosa*) and buttonwood (*Conocarpus erectus*), together form a system indispensable as habitat, wave buffer and major contributor to the marine detrital food web.

Along the Sanibel River and in low swales, the buttonwood-wax myrtle-sea oxeye association is very evident. It is probable that woody vegetation was once scarce in the interior. Now that trees line the banks, additional roosts and rookeries for birds, particularly wading birds and anhingas, have been created.

Although cordgrass is still common, it appears in disjunct patches on Sanibel, no longer covering several square miles of the interior as it once did. The Island vegetation at the turn of the century was probably that of an extensive prairie comprised of the very productive association of cordgrass and sawgrass. Together these two species provide both food and refuge for ducks, some songbirds and mammals. The graminola marsh also has an additional charm. Its simplicity of color, texture and pattern provides a pleasantly aesthetic and relaxing experience for many people.

The marsh elder-Brazilian pepper-cordgrass association is much more common in the interior today, due to disturbance of unwitting introductions. This association has exploited every elevation from spoil pile to ditched bank. Brazilian pepper is a noxious weed that in more than 30 years has spread throughout the wetlands and has replaced desirable native vegetation.

There are few areas of "no vegetation" on Sanibel except where paved, since clearing attracts recovery vegetation almost immediately. Included in this category are lawns and non-woody ornamentals. However, the ecologically sterile, fertilized, pesticided and herbicided lawn is becoming more commonplace.

West Indian flora probably was always relatively scarce, occurring only on Wulfert Point and along narrow upland strips. West Indian flora areas, though not actually endangered, should be protected and reinforced by good management. The most attractive, diverse and healthy tropical plants will flourish in these areas.

Australian pine and Brazilian pepper represent the very worst of the exotic vegetation problems on the Island. Each, when it occurs in a particular area, almost always becomes the dominant plant. These species should be removed and may not be planted deliberately. The invasive characteristics of the lead tree, air potato, java plum, earleaf acacia, exotic inkberries and bowstring hemp result in unacceptable impacts on vegetation communities and wildlife habitat.

Any tree determined to be a threat and nuisance to City public infrastructure should be removed.

Melaleuca had represented a similar problem, but eradication efforts have virtually rid the Island of this exotic plant. The City's phased program for the mandatory removal of Brazilian pepper has thus far impacted 3,200 acres of the City's 4,000 acres of non-conservation lands.

The sea oats, sea purslane, railroad vine, marsh elder, bay cedar and seagrape association includes the best of the beach species. These grow along the level strand and farther back along the dunes, including both herbaceous and woody species.

Because of the special contribution that the vegetation makes in a well-functioning ecosystem, certain associations and plants should be given special protection and encouraged wherever possible. Beach species are indispensable for stabilizing dunes and beautifying the beach. The mangroves are vital to many

aspects of the ecosystem as a contributor to the food chain, bank stabilizer and provider of habitat. The wetlands contain vegetation that makes a superior wildlife habitat and the ridge, with a variety of woody vegetation, offers a pleasant habitat to humans and wild creatures.

Wetlands

The major wetland basin on Sanibel is a 3,500-acre depression located in the Island's interior and characterized by a series of very subtle ridges and swales. This ribbed topography is the result of a long history of storms and tides which have alternately deposited sand and shell fragments which form mounds later to be rounded off by erosion.

The wetland areas serve a series of valuable functions on this small Island. When they are performing at their peak, they moderate the force of water, which can be devastatingly harsh during storm periods on this low Island. Because of the rapid permeability of the low ridges, rainwater can and should be allowed to seep in, replenishing the freshwater lens. Although these hydrologic functions are fundamental to the Island system, they are strongly dependent on the efficiency of the vegetative cover. This cover, which lends variety to the landscape, is the surface manifestation of the combination of the substrate and the water gradient. In turn, the matted grasses and low shrubs modify runoff. In addition to these hydrologic functions, the wetlands are valuable to Sanibel as superior wildlife habitat that must be protected.

Hydrology

Of the aquifers below Sanibel, only two affect the wetlands. Although the saline aquifer at about 30 feet from surface is beneath the clay stratum, it can still intrude on the freshwater

table aquifer and it does through unsealed wells and deep lagoons. For this reason it is necessary to direct as much freshwater as possible to the water table aquifer so that there is sufficient hydrologic pressure to push back this highly saline intruder. In order to maintain a healthy wetland through long dry winters and despite a high evapotranspiration rate, it is essential that all available freshwater is saved. The Sanibel River, ditches, ponds, real estate lakes and borrow pits are the visible manifestations of this aquifer and the more rainwater they can retain the less brackish they become.

Wildlife

Sanibel Island abounds in a wide variety of wildlife. Because of its position at the southern end of the Atlantic flyway, and being an Island subject to a combination of heavy storms, fluctuating tides and currents that affect it, this piece of land provides a necessary stopover for many birds and is a haven for a diverse range of mammals and reptiles, along with a rich environment for marine biota. Sanibel continues to enjoy worldwide renown for seashell collecting. To conserve this tremendously important ecological and economic resource, the taking of live shells within the City limits is now unlawful. Sport-fishing in the waters surrounding the Island also has a far-reaching reputation, attracting visitors year-round. The wealth of natural resources of this community continues to be vital to its economic viability.

Despite some habitat destruction on the Island, overall wildlife diversity is high, especially within saltwater areas. There are at least 280 species of birds, 70 species of marine fish, 48 reptiles and amphibian species and subspecies and more than two dozen species and subspecies of terrestrial mammals. Several species of marine mammals, including Atlantic bottlenose dolphins and West Indian manatees are also common. The freshwater wildlife community has a moderately varied fauna ranging from insects

and crustaceans, a few fish and several mammals and birds. The Island also has three bald eagle nests.

It is not surprising that Sanibel has such a multitude of creatures. Although it is an Island less than 20 square miles in area, there are several factors that contribute to making this a desirable place for birds and fish. Location has a great deal to do with it; it is well known that species diversity increases with proximity to the equator. This is especially true of birds, butterflies, insects and marine organisms, while numbers of benthic or burrowing creatures are likely to show some decline in numbers. Apparently, species proliferation in this subtropical area is a reflection of a higher vegetational productivity as well as an indulgent climate and geographical location. Many kinds of birds are especially drawn to a wind-blown shoreline and island context, while large numbers of marine organisms aggregate in food-gathering efforts along the shorelines. Needless to say, it is harder for mammals to reach and colonize islands, though once a pathway is established, this process advances rapidly.

Enforced isolation on islands heightens genetic mixing and speciation. Despite the fact that this complex system of interaction and adaptation takes place almost imperceptibly and over long periods of time, it is a most important biological end-product of island life and makes it a fascinating area for naturalists and biologists. The remarkable way in which organisms effectuate dispersal manifests extraordinary ingenuity in their search for a suitable habitat.

They are first attracted by a new environment that provides a measure of ecological opportunity no longer available on the mainland. Island colonization takes place in a variety of ways: a combination of unexpected migrants stopover to rest, winds carry in unusual seeds, drifting wood transports with it

unfamiliar species and currents and tides bring new and fascinating fish and crustaceans nearer to shore. Often these creatures find Sanibel to be a pleasing environment; they stay and contribute to the ever-growing gene pool.

The very complete and informative reports on birds, marine life, mammals, reptiles and amphibians and animals of fresh-water habitat have provided the basic data for this account of wildlife on Sanibel. Although an enormous number of birds are quite visible in even a brief visit to the J. N. "Ding" Darling National Wildlife Refuge, it takes several years on the Island to become familiar with its wildlife resources. This report is based upon visits to the Island, reference to scientific studies by the Conservation Foundation and discussions with Island residents who have special knowledge of the subject. Wildlife habitats can and should be closely correlated to the existing vegetation.

Unfortunately, the fauna of a small land area almost always suffer as human population increases. It is an objective of the Plan to indicate a way to lessen this negative stress. An attitude of co-existence with wild creatures must be wholeheartedly accepted by the public. Attitudes cannot be legislated but, with positive education such as that undertaken by Sanibel-Captiva Conservation Foundation, great strides can be made.

Each wildlife group has its own requirements and tolerances. Marine biota is sensitive to excessive sedimentation, toxicity and nutrient pollution and changes in configuration and vegetation in their nesting and sanctuary areas. Over-harvesting of fish and live shells is, of course, a quick way to extermination. High-speed power boats pollute the waters and can directly harm some species and disrupt the marine environment in general. Larger animals co-exist poorly with humans because they need sizeable undisturbed areas in which to roam where hiding places are abundant and where smaller prey exists. If these

requirements are met, the thrill of seeing a bobcat or panther in the wild could remain a possibility on Sanibel.

Birds coexist well with man as long as their food source is plentiful and uncontaminated, and they have private areas for nesting and raising their young. Unfortunately, this has not been the case with reptiles and amphibians that have been deliberately sought and exterminated. Snakes are very sensitive to human intrusion, many being very secretive and less adaptable to environmental modifications than warm-blooded creatures. Next to deliberate killing of these creatures, habitat destruction has been a major cause of their decline. Most lizards, snakes, turtles and crocodilians have very specific water demands though somewhat less specific food requirements.

Regulations that would set the tone of a sanctuary island can be legislated. Areas cordoned off would allow for non-interrupted nesting; maintenance of each historical habitat type would allow for all species to have a place to live; improvement of habitat through encouragement of native vegetation would give desirable species the best chance while rigorous monitoring should inhibit pollution of its air and waters.

Surface Water

The offshore water resources abutting the land area (above sea level) of the City of Sanibel are the Gulf of Mexico, San Carlos Bay, Pine Island Sound and Blind Pass.

The City of Sanibel is located on a barrier island that spans the mouth of the Caloosahatchee River just offshore of its discharge to the Gulf of Mexico. Sanibel is also located at the southern end of the Pine Island Sound Aquatic Preserve. These regional drainage systems significantly influence the quality of Sanibel's water resources, particularly that of the estuary. Tarpon Bay

and numerous bayous are located in the tidal wetlands on the bay side of the Island.

The City, Lee County and the Captiva Erosion Prevention District have constructed a culvert linking Clam Bayou to Dinkins Bayou and have reopened Blind Pass in 2010 to improve the quality of these waters.

The Island's estuaries and aquatic habitats are being negatively impacted by the lack of a comprehensive and environmentally sound water management plan for Lake Okeechobee and the resulting water releases from the Lake into the Caloosahatchee River and Estuary. The nutrient-rich water releases into the Caloosahatchee River and Estuary have resulted in the growth of toxic blue-green algae blooms and red drift algae outbreaks. These blooms have been associated with fish kills, impacts on shellfish, destruction of seagrass beds, mangroves and breeding grounds for many fish species, and impacts on recreational and commercial fishing. This nutrient runoff may have also contributed to a perceived long-term trend of more frequent, more severe and longer duration of destructive red tide events and severe impacts to the J. N. "Ding" Darling National Wildlife Refuge and aquatic preserves.

In addition, water released from Lake Okeechobee also carries large amounts of suspended sediment that are deposited in the mouth of the river and can be re-suspended by wave action. These impacts could lead to serious degradation in estuarine water quality and potentially irreversible impacts to seagrasses and other estuarine resources.

The main drainage way of the interior wetlands is the Sanibel River. Other surface water bodies consist primarily of human made canals and lakes in the dredged areas of the Altered Land Zone.

There are no major industrial or agricultural uses in the City of Sanibel. There are no major water users. Current and projected water needs are based on the demand for potable water by residential and commercial uses. The current and projected demand for potable water is provided in the Water Supply Element of the Plan.

Sanibel's water resources have not been jeopardized by drawdown due to drought or excess demand (use). However, an adequate supply of freshwater could become a serious economic constraint upon future growth and development in the City of Sanibel. Conservation of this precious resource is critical for meeting future demand.

Conservation and Recreational Uses

The recreational use of natural resources is discussed in the Recreation and Open Space Element of the Plan.

The majority of Sanibel's natural resources are managed for conservation purposes. The U.S. Department of the Interior, Fish and Wildlife Service, manages the J.N. "Ding" Darling National Wildlife Refuge. This 5,400-acre preserve is predominately tidal wetlands. The Sanibel-Captiva Conservation Foundation manages approximately 1,200 acres on Sanibel, consisting of predominately interior wetlands.

Plan for Natural Resources

Proper management of the natural resources in the City of Sanibel is essential to the maintenance of the economic well-being of the City and to preservation of its quality of life.

Plan for the Preservation of Ecological Functions Relating to Health, Safety and Welfare

The plan for the preservation of the ecological functions of the Island of Sanibel shall be provided for through the development regulations and performance standards set forth in the Land Development Code.

The key that was used to delineate the ecological zones shown on the Official Zoning Map of the City of Sanibel is provided as an appendix to this Plan.

Plan for the Interior Wetlands Conservation District

In July 1984, the Sanibel City Council adopted an ordinance creating the “Interior Wetlands Conservation District”, in order to extend a higher degree of protection to the interior wetlands than had been accorded under the development regulations in effect on an estimated 2,000 acres of interior wetlands.

Since 1984, three tracts were removed from the District. In 1989, 101 acres of the 2nd addition to the Beachview Subdivision were removed from the District and placed in a Special Use District that imposed specific surface water management requirements. In 2001, the 18-acre site of the existing water treatment plant for the municipality and neighboring Captiva Island was removed from the District and designated a Special Use District for the public utility. Also in 2001, a 3-acre site was removed from the District to allow the development of a 12-unit increased-density BMRH development (Woodhaven) on Casa Ybel Road.

In 2012, a more accurate, GIS-assisted process, calculated the acreage in the District at 1,715 acres.

The need for the Conservation District was evidenced in 1984 by development trends that occurred after adoption of the Comprehensive Land Use Plan in 1976. These trends generally included:

1. Increased development pressures in the interior wetlands as other lands more suitable for development became less available.
2. Development taking place in proximity to the Sanibel River with the potential to pollute ground and surface waters.
3. Lack of requirements contained in the regulations to direct development away from sensitive portions of the site.
4. Excessive amounts of vegetation clearing permitted to support assigned development intensities, particularly for large parcels.
5. Lack of prohibitions against dredging and filling of wetlands, leading to alteration of natural features and functions.
6. Development taking place in subdivisions platted prior to the adoption of this Plan, inadequate infrastructure and substandard lot sizes which were unable to conform with the management standards of this Plan.

Since 1984, there have been many changes in the Interior Wetlands Conservation District. In 2012, recognizing that lands used for conservation purposes are in use, there is virtually no vacant land remaining in the District. Over the past 26 years,

there have been significant acquisitions of freshwater wetlands for conservation purposes. In 2012, 90% of the lands in the Wetlands Conservation District are owned and managed for conservation purposes. The restoration of these natural resources, highlighted by the restoration of the Sanibel River to its historical course as part of the Sanibel Gardens Preserve, represents the further success of the Interior Wetlands Conservation District.

Residential and non-residential development has also occurred in the Interior Wetlands Conservation District, in accordance with the standards and regulations in the Land Development Code for the District.

Five major subdivisions for residential units have been developed or approved for development in the District since 1984. The 67 lots for single family residential development platted in the District have been located on higher land. These lots have been sited in a manner that is not disruptive to the natural functions of the interior wetlands and does not decrease the water storage or hydrologic regime of the wetlands. Significant acreage of wetlands was preserved and dedicated for conservation purposes as part of the creation of these residential lots.

The 12-unit Airport Way Below Market Rate Housing (BMRH) development (single family and duplex units) and the 12-unit Casa Mariposa BMRH development (multi-family units) were developed in the District at the density permitted by the Development Intensity Map. Both projects were built in general accordance with District regulations, even as City-exempt projects.

The Shell Museum, the Sanibel-Captiva Conservation Foundation Maintenance Facility and the Parish Hall for St. Isabel Catholic

Church were also built in the District since 1984, in accordance with District regulations. The Sanibel-Captiva Conservation Foundation administrative facilities were expanded in the District in accordance with District regulations.

In 2012, twelve parcels comprising 72 acres were added to the District and three parcels comprising 6.6 acres were removed from the District.

The purpose and intent of the Interior Wetlands Conservation District is:

1. To protect public health, safety and welfare.
2. To protect and conserve interior wetlands in the Sanibel River watershed so as to restore and maintain the integrity of these lands in as near a natural state as possible;
3. To set forth standards and limitations on the placement of fill on and the excavation of wetlands in and nearby the Freshwater Management Area.
4. To prohibit development activity within 200 feet of the banks of the main channel of the Sanibel River.
5. To identify areas suitable and unsuitable for development within the Sanibel Gardens, Tarpon Bay, and Sanibel Highlands Subdivisions, and to specify the standards at which development may take place in the Sanibel Highlands, Sanibel Gardens and Tarpon Bay Subdivisions.
6. To identify suitable development activities to be permitted and standards to be applied in the

development of wetlands in the Sanibel River watershed.

7. To ensure that, where development activity does take place in the wetland area, it will be located on those portions of the site and in a manner that will be the least disruptive to the natural functions of these environmentally-sensitive lands.
8. To ensure that the maintenance and restoration of wetlands is an integral part of the wetlands management program.

In order to fulfill the above-stated purpose and the objectives for the Interior Wetlands Conservation District, the following additional actions have been and should continue to be undertaken:

1. Proceed with the program of public acquisition, as opportunities, or the need, arise, based upon, but not limited to:
 - a. Lands or lots rendered undevelopable by the standards of the Interior Wetlands Conservation District ordinance.
 - b. Lands or lots within 200 feet of the Sanibel River.
 - c. Lands with little or no elevation above 1.8 feet NAVD (3 feet NGVD) for the placement of dwelling units, in accordance with the standards of the Interior Wetlands Conservation District ordinance.
 - d. Lands abutting parcels currently under public or quasi-public ownership.

2. Continue to encourage the dedication of those portions of lands, not utilized for development under the standards of the Interior Wetlands Conservation District ordinance, to the City of Sanibel or a non-profit conservation entity.
3. Continue to implement a program for the maintenance and restoration of lands dedicated to the City and, to the extent possible, to nonprofit conservation entities, so as to approximate their natural condition, to the extent practical.
4. To implement the plan for sewage treatment, undertake a program to upgrade existing septic tank systems where there is evidence that they are improperly designed, installed or maintained, and that they pose the potential to pollute ground or surface waters of the interior wetlands system.

Plan for Environmentally Sensitive Lands

There are many environmentally sensitive lands in the City of Sanibel that are owned and managed for conservation purposes.

As stated in the Future Land Use Element of the Plan, the principal use of over 65 percent of the area in the City of Sanibel is conservation use. More than eight square miles of the City are owned and managed by the federal government as a wildlife refuge. The Sanibel-Captiva Conservation Foundation owns more than a square mile of additional land that is managed for conservation purposes.

The Future Land Use Element contains a projection that approximately 400 acres of undeveloped land in the City are

located in the tidal and interior wetlands. A major use of this acreage, even if developed at very low residential density, is projected as conservation lands.

The City of Sanibel began a funded program in 1987 to acquire environmentally sensitive lands for conservation purposes. The City has acquired numerous small parcels of land, totaling 400 acres, which will be preserved and protected. An estimated \$1 million to \$1.5 million worth of environmentally sensitive lands has been purchased through this program. In addition to the City's acquisition program, the Plan for Environmentally Sensitive Lands focuses on the restoration and management of these environmentally sensitive lands.

The initial (1976) Comprehensive Land Use Plan initiated development regulations and performance standards based on the ability of each ecological zone to tolerate future development. In 1984, the City established the Interior Wetlands Conservation District to provide a higher degree of protection from development impacts for 2,000 acres of interior wetlands. In 1991, to provide for the use and preservation, maintenance, enhancement and restoration of environmentally sensitive lands, the City of Sanibel established an Environmentally Sensitive Lands Conservation District.

With about two-thirds of the area in the City of Sanibel owned and managed for conservation purposes, an Environmentally Sensitive Lands Conservation District is needed to ensure the protection and preservation of these lands and the coordinated management of these natural resources that function as an ecological system.

The purpose of the Environmentally Sensitive Lands Conservation District is:

- To ensure the preservation of environmentally sensitive lands owned and managed for conservation purposes
- To restrict development in environmentally sensitive lands that is not consistent with conservation purposes
- To promote coordinated management of environmentally sensitive lands
- To encourage enhancement and restoration of disrupted natural systems

In order to fulfill the purpose of the Environmentally Sensitive Lands Conservation District, permitted uses, required conditions and performance standards have been established in the Land Development Code. The District may include environmentally sensitive lands owned and managed for conservation purposes whether publicly or privately owned. The District incorporates lands that have been acquired in the past and will be acquired in the future by the City for conservation purposes. The District map for the Environmentally Sensitive Lands Conservation District is part of the Future Land Use Map and is also included in the Land Development Code.

Plan for Vegetation Preservation

In order to protect the vegetation values identified, it is necessary that the City of Sanibel:

1. Prohibit the introduction of exotic species of plants which out-compete or otherwise displace native species of plants.

2. Encourage the removal of undesirable exotics currently existing on the Island and develop programs for the management of all prohibited exotic species of plants.
3. Limit clearing of native vegetation.
4. Protect valuable native species of plants from destruction.
5. Encourage the use of native species of plants in the landscaping of future developments.

To achieve those ends, performance standards shall be set out in the Land Development Code that establish certain restrictions on the development of land in regard to exotic and native species of plants. However, the standards and criteria for development activity are not sufficient to achieve Island-wide protection of vegetation values. Therefore, the City should encourage sound ecological management of vegetative resources in those portions of the City for which future development is not proposed.

PROTECTED NATIVE PLANTS

Protected native plants are those plant species whose natural range included Florida at the time of European contact (1500 A.D.) as identified on the Atlas of Vascular Plants Website, which is identified as follows: Atlas of Vascular Plants, University of South Florida Institute for Systematic Botany:

<http://www.plantatlas.usf.edu/default.asp>.

PROHIBITED EXOTIC PLANTS

Australian pine -	<i>Casuarina equisetifolia</i>
	<i>Casuarina cunninghamiaria</i>
Brazilian pepper -	<i>Schinus terebinthifolius</i>
Cajeput -	<i>Melaleuca quinquenervia</i>
Lead tree -	<i>Lucaena leucocephala</i>
Air potato -	<i>Dioscorea bulbifera</i>
Java plum -	<i>Syzygium Cumini</i>
Earleaf Acacia -	<i>Acacia auriculiformis</i>
Exotic inkberrys -	<i>Scaevola taccada</i>
	and <i>s. frutescens</i>
Bowstring hemp -	<i>Sansevieria thyrsiflora</i>

Source: Sanibel Department of Natural Resources

Note: The contribution of mature Australian pines to the historical and scenic attributes of some recreational areas is a significant factor in the City's development and implementation of its policy for the management of prohibited exotic plants. When the historical and scenic benefits of retaining mature Australian pines outweigh the safety and environmental benefits derived from their removal, immediate and mandatory removal is not required. These exotic, but long-established features of the community, treasured by some and tolerated by others, may be retained for their historic and scenic attributes.

The City may make additions and deletions to this list through its normal legislative processes.

The following native plants are commonly found on Sanibel and are listed to provide the reader with easy reference to protected native plants and context for the Plan for Vegetation Preservation.

Beach creeper -	<i>Ernodea littoralis</i>	Wild sage -	<i>Lantana involucrata</i>
Sea oats -	<i>Uniola paniculata</i>	Wild olive -	<i>Forestiera segregata</i>
Railroad vine -	<i>Ipomoea pes-caprae</i>	Paradise tree -	<i>Simarouba glauca</i>
Sea purslane -	<i>Sesuvium portulacastrum</i>	Buckthorn -	<i>Bumelia celastrina</i>
Bay cedar -	<i>Suriana maritima</i>	Myrsine -	<i>Rapanea guianensis</i>
Inkberry -	<i>Scaevola plumieri</i>	Wax myrtle -	<i>Myrica cerifera</i>
Bay bean -	<i>Canavalia rosca</i>	Spanish stopper -	<i>Eugenia foetida</i>
Bitter panicum grass -	<i>Panicum amurum</i>	Wild tamarind -	<i>Lysiloma bahamensis</i>
Florida maytens -	<i>Maytenus phyllanthoides</i>	Pigeon plum -	<i>Coccoloba diversifolia</i>
Leather fern -	<i>Acrostichum danacifolium</i>	Varnish leaf -	<i>Dodonaea viscosa</i>
Swamp fern -	<i>Blechnum serrulatum</i>	Coontie -	<i>Lamia integrifolia</i>
Sea oxeye daisy -	<i>Borrchia frutescens</i>	Seven year apple -	<i>Casasia Genipa</i>
Bald cypress -	<i>Taxodium distichum</i>	Yellow elder -	<i>Tecoma stans</i>
Pond apple -	<i>Annona glabra</i>	Wild cotton -	<i>Gossypium hirsutum</i>
Joewood -	<i>Jacquinia keyensis</i>	Marlberry -	<i>Ardisia escallonioides</i>
Seagrape -	<i>Coccoloba uvifera</i>	Satin leaf -	<i>Chrysophyllum oliviforme</i>
Necklace pod -	<i>Sophora tomentosa</i>	Pitch apple -	<i>Clusia rosea</i>
Snowberry -	<i>Chiococca alba</i>	Sweet acacia -	<i>Acacia farnesiana</i>
Red stopper -	<i>Eugenia rhombea</i>	Wild lime -	<i>Zanthoxylum fagara</i>
White stopper -	<i>Eugenia axillaries</i>	Simpson stopper -	<i>Myrcianthes fragrans</i>
Cocoplum -	<i>Chrysobalanus icaco</i>	Mahogany -	<i>Swietenia mahagoni</i>
Jamaica caper -	<i>Capparis cynophallophora</i>	Pamotis palm -	<i>Acoelorrhaphe wrightii</i>
Coral bean -	<i>Erythrina herbacea</i>	Southern red cedar -	<i>Juniperus silicicola</i>
Strangler fig -	<i>Ficus aurea</i>	Royal palm -	<i>Roystonea elata</i>
Gumbo limbo -	<i>Bursera simarouba</i>	Cordgrass -	<i>Spartina bakerii</i>
Mastic -	<i>Mastichodendron foetidissimum</i>	Sawgrass -	<i>Cladium jamaicense</i>
Cat claw -	<i>Pithecellobium unguis-cati</i>	Blechnum fern -	<i>Blechnum serrulatum</i>
Jamaica dogwood -	<i>Piscidia piscipula</i>	White mangrove -	<i>Laguncularia racemosa</i>
White indigo berry -	<i>Randia aculeata</i>	Buttonwood -	<i>Conocarpus erecta</i>
Saw palmetto -	<i>Serenoa repens</i>	Red mangrove -	<i>Rhizophora mangle</i>
Butterfly orchids -	<i>Epidendrum tampense</i>	Black mangrove -	<i>Avicennia germinans</i>
	<i>Tillandsia spp. except Spanish Moss</i>	Christmas berry -	<i>Lycium carolinianum</i>
Whisk fern -	<i>Psilotum nudum</i>	Muhly grass -	<i>Muhlenbergia capillaris</i>
Sabal palm -	<i>Sabal palmetto</i>	Live oak -	<i>Quercus virginiana</i>
Hairy grama grass -	<i>Bouteloua hirsuta</i>	Slash pine -	<i>Pinus ellioti</i>
Hercules club -	<i>Zanthoxylum clava-herculis</i>		
Dahoon holly -	<i>Ilex cassine</i>		

Source: Natural Resources Department and Vegetation Committee

Plan for Wetland Protection

The protection of wetlands is better achieved by continued restoration of the historic hydroperiod in the freshwater wetlands. In order to establish the most suitable water level, detailed topographic and engineering studies have been done. The Tarpon Bay and Beach Road weir control structures are now set at elevations of 3.2 and 2.7 feet NGVD, respectively. These elevations may be manipulated in the event of a flood or potential flood occurrence in accord with the City's Weir Control Policy, adopted by City Council Resolution No. 94-75. An additional weir that can elevate the seasonal water tables in the conservation lands to the west of the Sanibel Highlands subdivision is being considered.

It is also imperative that the Sanibel River, ditches, ponds, lakes and wetlands be protected from any sewage pollution. These water bodies are now largely eutrophic, with high nutrient levels and low dissolved oxygen. The Sanibel River is currently listed as an impaired waterbody by the Florida Department of Environmental Protection. The cause (and remedy) for this is not immediately apparent. However, organic materials reaching the water, whether from pollution, natural plant decay, fertilizers or other are likely contributors. In any event, this should be studied and appropriate remedial action taken (such as source control or dredging of organic deposits, etc.). The excessive growth of undesirable aquatic vegetation is an almost certain outcome of high nutrient levels; this is now evident in various places along the river where algae blooms have been observed. Not only is this unsightly vegetation, but it has negligible value for wildlife.

Wetlands provide natural cleansing of stormwater runoff and prevent nutrients and contaminants from reaching into the Gulf of Mexico. Retaining natural wetlands significantly contributes

to the attainment of good water quality. All options to avoid damage to wetlands shall be considered, including the reduction in the intensity and mass of the proposed development, the reconfiguration of the proposed development and the relocation of the proposed structures.

When public or private projects produce unavoidable damage to wetland areas, restoration or mitigation programs shall be implemented. Mitigation activities for the impacts from the unavoidable losses of wetlands due to development require habitat preservation, restoration or creation. Mitigation shall be on-site wherever possible.

The first priority is always to avoid damage to wetlands.

Where it is not possible to avoid damage to wetlands areas or to mitigate for the unavoidable damage to wetland areas on-site, mitigation for the unavoidable damage to wetlands may be off-site, only if a plan for off-site mitigation is prepared that clearly demonstrates that:

- On-site mitigation would result in a remote wetland area that would be isolated from larger wetland areas and contribute little to improvement in water quality
- The failure to allow off-site mitigation denies the property owner beneficial use of the property, where it is not possible to avoid damage to wetlands areas or to mitigate for the unavoidable damage to wetlands areas on-site
- The off-site mitigation can be undertaken on-Island, on property that is adjacent to or nearby where the unavoidable damage to wetlands areas is to occur

- Off-site mitigation, to create or restore unavoidable damage to wetlands areas, produces an overall improvement in water quality

For any acre of unavoidable wetlands losses, there shall be:

- 3 acres of wetlands created and preserved, or
- 10 acres of wetlands restored and preserved, or
- A proportionate combination of created wetlands and restored wetlands.

Created and restored wetlands should be of the same type of wetland that is to be destroyed.

As an additional measure for achieving maximum ecological preservation of vegetative values, the City implements a program for replacing with more beneficial vegetation all prohibited exotic species of plants, including Australian pines and Brazilian pepper tree, from City-owned land. The City supports the efforts of other levels of government and private individuals with land ownership on Sanibel doing the same. Although the Melaleuca tree has already been virtually eradicated, the community must continue to be alert to eliminate volunteers of this species.

Plan for Wildlife Preservation

Habitat preservation plays a key role in the plan for wildlife preservation.

The City should give further consideration to enacting regulations that would encourage the preservation of the

Island's natural wildlife and would set the tone appropriate for an Island designated as a sanctuary. Special consideration should be given to endangered and protected species.

The endangered smalltooth sawfish (*Pristis pectinata*) is known to inhabit the estuarine waters around Sanibel.

The City should also pursue means to obtain local control over the use of fertilizers, pesticides and other chemicals that will result in the degradation of wildlife habitat, and where possible, develop a program to appropriately regulate their use in order to protect wildlife and wildlife habitat.

All bird nests on the Island are protected under both the Federal Migratory Bird Act and City Ordinance.

Consideration should be given to adopting Federal guidelines for bald eagle protection.

Plan for Water Resources

The Plan for Water Supply is provided in the Water Supply Element of this Plan. In addition, the Plan for Stormwater Management is provided in the Storm Drainage Element of this Plan.

Plan for Water Quality

In order to protect the quality of water resources, the City of Sanibel regulates development activities to protect natural water-cleansing processes and to reduce or prevent the discharge of contaminants into the water system. The Plan for Stormwater Management is provided in the Storm Drainage Element of this Plan. The Plan for the Water Supply (quality and conservation) is provided in the Water Supply Element of

this Plan. The Plan for Vegetation and the Plan for Wetlands, in this section, contribute to the Plan for Water Quality.

However, there is a critical need to improve policies controlling water releases from Lake Okeechobee in order to maintain the water quality of coastal waters surrounding Sanibel. It is vitally important that the U. S. Environmental Protection Agency and the State of Florida implement the Total Maximum Daily Loads (TMDLs) for pollutants provision of the Federal Clean Water Act.

Pollutants have had a dramatic and unacceptable impact on the quality of surface waters surrounding the City. Sanibel is susceptible to over nutrification through runoff from development. Although the City has put a significant effort and investment into wastewater treatment facilities, efforts and investments to improve water quality have not been as extensive in other areas within the watershed of the Caloosahatchee River. Continued surface water runoff within the watershed of the Caloosahatchee River containing nonpoint source pollution contributes to the further degradation of the quality of the waters surrounding the City.

However, this degradation of waters surrounding the City is exacerbated by water releases from Lake Okeechobee exceeding Total Maximum Daily Loads for pollutants.

Intergovernmental cooperation from the U.S. Army Corps of Engineers, the Florida Department of Environmental Protection and the South Florida Water Management District is essential to adequately address these Regional challenges.

Plan for Air Quality

The air quality on Sanibel is considered good. To ensure that the City continues to enjoy good air quality, the impact of

future development on local air quality should be considered. Land uses and transportation facilities (roads) should be compatible with the desired level of air quality.

Increases in traffic volumes, not associated with land use development in the City, is a major contributor to traffic congestion along major roadways in the City. This traffic congestion has the potential to degrade the air quality of surrounding areas. The carrying capacity of the natural resources within the City, as well as the quality of life for residents and visitors, can be negatively affected by poor air quality.

The maintenance of good air quality is a regional concern, requiring intergovernmental coordination for approaches and solutions.

Plan for Hazardous Wastes

Although the amount of hazardous wastes generated in the City of Sanibel is not great, some of this waste is being disposed of improperly. Some hazardous wastes are dumped in wastewater disposal facilities, some onto the ground and some transported to the County landfill. Hazardous waste best management practices should be established to improve hazardous waste storage and disposal methods.

Lee County operates a Hazardous Waste Disposal site.

Plan for Conservation and Recreational Use

Conservation of natural resources is an essential component of the *Sanibel Plan*. The City's development regulations reflect and promote this conservation effort.

Use of natural resources should be compatible with conservation efforts. Commercial uses of natural resources, except for those that are incidental to recreation use that is compatible with conservation use, should be prohibited. The wetlands, particularly in the lowland and the remaining mangrove areas, are not well suited to intensive recreation but may be used for low intensity recreation such as walking, canoeing or bird-watching.

Plan for Surface Water Management

Implementation of the Surface Water Management Plan adopted by the City in August of 1989 has enhanced the viability of the interior freshwater wetlands system.

This plan sets forth the following goal and objectives:

Goal

To safeguard human health and welfare and to maintain and improve the wetland system of the Sanibel River and its tributaries in order to enhance and promote water quality as well as vegetative and wildlife habitat diversity.

Objectives

1. To reduce extreme flooding in developed areas and the length of time of flooding in order to keep roads, driveways, house pads and septic systems drained to the greatest extent possible.
2. To use surface water management as one of many tools in undeveloped areas in order to encourage and support the return to savannah and marsh vegetation as well as other native habitat types,

including but not limited to ridge hammocks, buttonwood sloughs and transition zones and to discourage the continued invasion of exotic plants.

- a. To identify undeveloped areas for habitat preservation and restoration that are large enough to support representative plant and animal populations, economically and physically feasible to manage and compatible with the water management needs of developed areas.
 - b. To increase rainfall detention in undeveloped areas to allow for recharge of the water table aquifer and to return to conditions of environmental extremes in surface water and water table elevations which had controlled natural characteristics in the past.
3. To use natural drainage methods wherever possible with minimum impact to the environment and requiring minimal maintenance. Human-made drainage structures are a less-preferred alternative.

Plan for Enhancement and Restoration of Natural Resources

To increase the productivity and viability of natural resources that have been disturbed or diminished by past activities, restoration efforts can facilitate natural recovery. To that end, extensive restoration efforts by the U.S. Fish and Wildlife Service, the Sanibel Captiva Conservation Foundation and the City have been widely undertaken. Although a lot of progress has been made, as evidenced by the hundreds of acres cleared and maintained free of invasive exotic vegetation and the

restoration of the historic course of the Sanibel River through the Sanibel Gardens Preserve, additional projects have been identified.

The tidal circulation of impounded mangrove areas in Clam Bayou has recently been improved. So has the tidal circulation in the artificial impoundment areas in the J. N. “Ding” Darling National Wildlife Refuge, in the wetlands east of Dixie Beach Road. Elevating the seasonal water tables in the conservation lands to the west of the Sanibel Highlands subdivision is also being considered.

Prescribed fire will continue to be used as a successful management tool to replicate the benefits wildfires have historically had in maintaining natural ecosystems. Such managed burns help maintain Sanibel’s fire adapted freshwater wetland savannahs, thereby improving wildlife habitat. Lands bordering on conservation areas and other lands where wildfires are possible should be managed in a fire-wise fashion.

Goals, Objectives and Policies

Goal Statement

Protect and appropriately manage Sanibel’s natural resources to ensure the conservation of ecosystems by maintaining air quality, water quality, native vegetation, native habitats and species diversity.

Objective 1

Sanibel is and shall remain a barrier island sanctuary.

Policy 1.1. Evaluate all local plans and programs for conservation and natural resource protection to ensure that they are consistent and compatible with one another and that they are unified in their efforts.

Policy 1.2. Strive to sustain ecological balance and preserve and restore natural settings for residents, visitors and wildlife.

Policy 1.3. The adequate and appropriate protection and conservation of natural resources, including wetlands, shall be accomplished through:

- Maintenance, and appropriate expansion, of the Environmentally Sensitive Lands Conservation District,
- Maintenance and appropriate expansion of the Interior Wetlands Conservation District, and
- Maintenance, and appropriate revisions, to regulations, such as the Interior Wetlands

Conservation District and environmental performance standards of the Land Development Code

Objective 2

The City shall strive to manage the Island's carrying capacity to ensure that the Island's natural resources are sustained.

Policy 2.1. The City shall use appropriate methods to sustain and manage the carrying capacity of the beach for use by wildlife. The City may conduct research regarding existing and emerging best practices and establish current base line and future performance metrics or measures necessary to ensure the Island's sustainability during the *Sanibel Plan's* initial (5 years) and long range (10 years) planning periods. While the primary focus on this effort will be the City of Sanibel, regional conditions, trends and projections may also be considered.

The carrying capacity research and resulting management strategies may essentially be an important component of the ongoing implementation and performance evaluation of the *Sanibel Plan's* goals, objectives and policies. This effort would consider the Island's sustainability in a holistic manner.

Objective 3

If the Florida Department of Environmental Protection (DEP) notifies the City of Sanibel that minimum established air quality levels are being exceeded within the City, a program approved by the DEP will be implemented to bring air quality into compliance with minimum established standards.

Policy 3.1. Achieve minimum air quality standards by implementing an air quality improvement program within one year of notification by DEP that minimum established air quality standards are not being met.

Objective 4

Protect and conserve water resources and prevent impairment of the quality and quantity of surface and groundwater resources.

Policy 4.1. To provide filtration of stormwater runoff into surface waters, ensure that setback requirements from open bodies of water are maintained by continued implementation of the development regulations and performance standards established in the Land Development Code.

Policy 4.2. With cooperation from the Department of Environmental Protection, establish a surface water quality monitoring program and seek further cooperation from Lee County, the Department of Environmental Protection and the South Florida Water Management District.

Policy 4.3. Assist the Sanibel-Captiva Conservation Foundation with its groundwater quality monitoring program.

Policy 4.4. With cooperation from the South Florida Water Management District in establishing cones of influence for wellheads, establish a wellhead protection program for existing and future wells.

Policy 4.5. Work toward the elimination of virtually all septic systems on the Island. Connect 99 percent of all homes and businesses to the City's central sewer system.

Policy 4.6. The City shall remain vigilant and proactive in its insistence that the regulation, design and operation of water releases from Lake Okeechobee will not further degrade the quality of coastal waters and the estuaries of Southwest Florida. It is the City's intent to convince the South Florida Water Management District and the U.S. Army Corps of Engineers to change policy so that the waters surrounding Sanibel are no longer threatened. The Sanibel City Council is approaching the water quality problem on three tracks:

- 1) through public education,
- 2) in the policy and legislative arena, and
- 3) as a last resort, through potential litigation.

Policy 4.7. The City shall also remain vigilant and proactive to ensure that surface water runoff from other jurisdictions into the Caloosahatchee River watershed will not further degrade the quality of water in near Island coastal waters, including the estuaries within the boundaries of the City.

Objective 5

Protect and conserve soils and native vegetation communities and maintain the natural functions of the City's ecological zones by continued implementation of the adopted development regulations and performance standards established in the Land Development Code and best management practices.

Policy 5.1. To limit clearing of native vegetation, including the under story and groundcover, ensure the continued enforcement of the environmental performance standards of the Land Development Code and best management practices.

Policy 5.2. Protect valuable native species of plants from destruction by requiring a City vegetation permit for vegetation removal.

Policy 5.3. The planting or seeding of prohibited exotic plants that out-compete or otherwise displace native species of plants is prohibited.

Policy 5.4. In conjunction with the development of any site, prohibited species of vegetation are to be removed from the site and prevented from re-establishing on the site.

Policy 5.5. Reduce the spread of prohibited exotic plants and noxious aquatic vegetation by implementing regulations prohibiting the planting of these species and by requiring their removal when land is developed.

Policy 5.6. Consider development of a program requiring removal, from developed property, all prohibited exotic plants, except for Australian pines.

Policy 5.7. Restrict development in the Blind Pass Zone by including regulations in the adopted Land Development Code that limit development intensity in a manner that is consistent with the dynamic nature of this zone.

Policy 5.8. Continue to implement Local regulations to better protect mangroves.

Objective 6

Protect and conserve wildlife and its habitat, including marine habitat, and maintain the natural functions of the City's ecological zones by the continued implementation of the adopted development regulations and performance standards established in the Land Development Code and best management practices.

Policy 6.1. Natural wildlife corridors will be established and maintained to connect wildlife habitat to the Sanibel River and to provide for wildlife movement along the River.

Policy 6.2. Develop a program for the enhancement of marine resources.

Policy 6.3. Wildlife access to and from the beach will be maintained by restricting the location of fences.

Policy 6.4. Commercial uses of natural resources, except for those uses that are incidental to recreational use compatible with scenic preservation and conservation uses, will be prohibited.

Policy 6.5. Protect sea turtle nesting areas by prohibiting the disturbance of nests, prohibiting mechanical beach cleaning and controlling the emission of light from structures on or near the beach.

Policy 6.6. Protect the habitat of gopher tortoises, eastern indigo snakes, eagles, ospreys, loggerhead

turtles, alligators, pileated woodpeckers and river otters.

Policy 6.7. To ensure the protection of habitat for protected species during the development process, require that viable habitat be preserved and that provisions be made for long-range habitat management and monitoring.

Policy 6.8. Protect manatees by enforcing slower boat speeds in their primary habitats.

Policy 6.9. Protect all bird nests on the Island under both the Federal Migratory Bird Act and City regulations.

Policy 6.10. Protect all bald eagle nests on the Island by adopting and implementing Federal, State and Local guidelines for bald eagle protection.

Objective 7

To ensure protection and preservation of environmentally sensitive lands and the coordinated management of these natural resources that function as an ecological system, retain and expand the Environmentally Sensitive Lands Conservation District for lands owned and managed for conservation purposes.

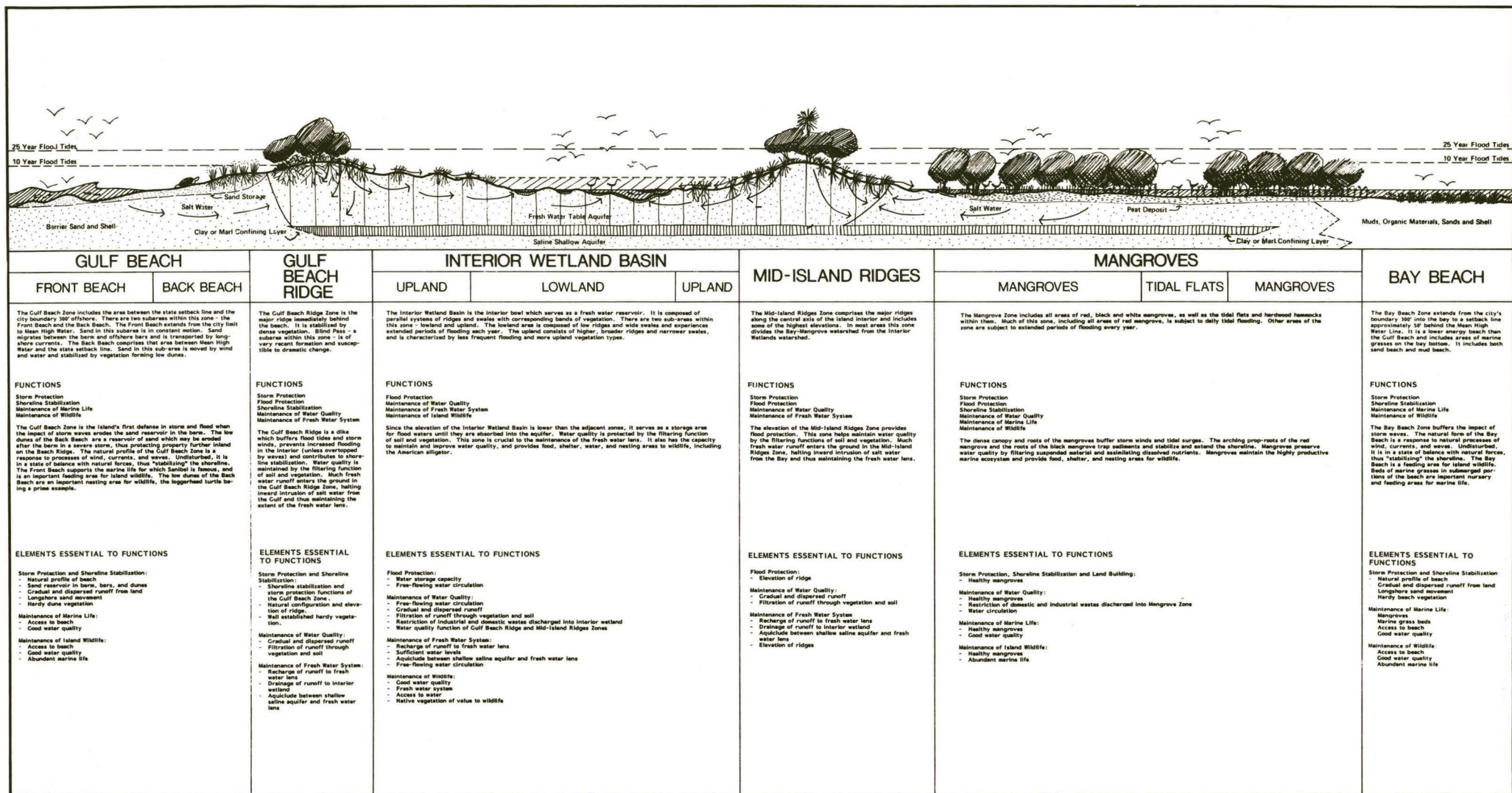
Policy 7.1. Restrict permitted use in the Environmentally Sensitive Lands Conservation District to environmental preservation, passive recreation, surface water management, minor utilities installations primarily for transmission, enhancement and restoration.

Policy 7.2. Coordinate management of lands in the Environmentally Sensitive Lands Conservation District in recognition that these natural resources function as an ecological system.

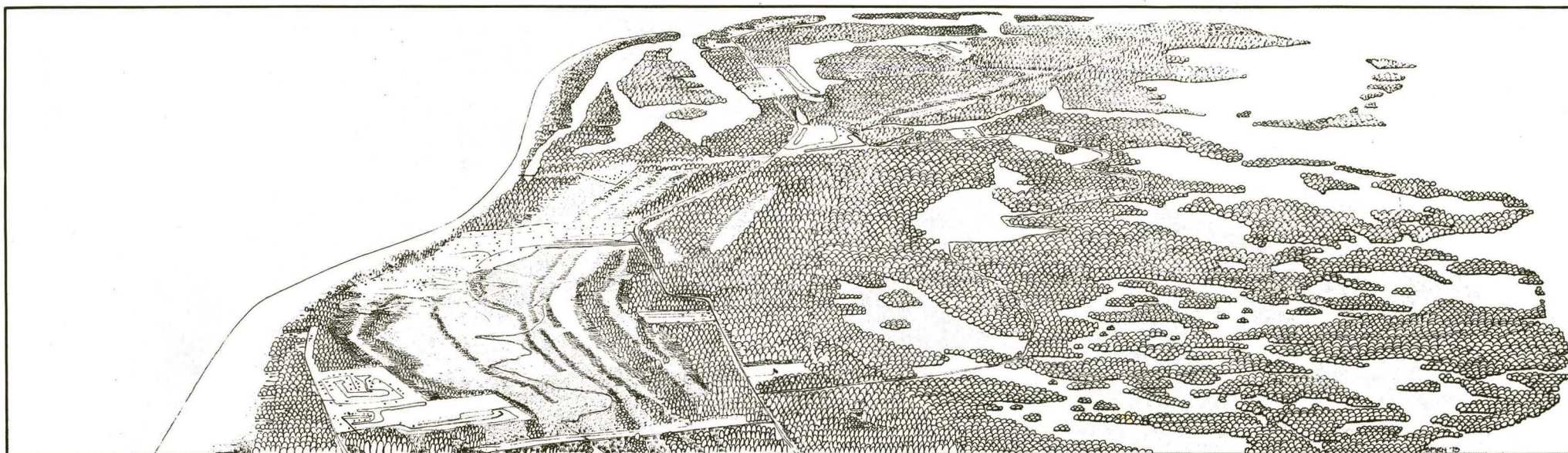
Policy 7.3. Include all lands purchased by the City of Sanibel with environmentally sensitive lands acquisition funds in the Environmentally Sensitive Lands Conservation District.

GULF BEACH		GULF BEACH RIDGE	INTERIOR WETLAND BASIN			MID-ISLAND RIDGES	MANGROVES			BAY BEACH
FRONT BEACH	BACK BEACH		UPLAND	LOWLAND	UPLAND		MANGROVES	TIDAL FLATS	MANGROVES	
<p>The Gulf Beach Zone includes the area between the state setback line and the city boundary 300' offshore. There are two subareas within this zone - the Front Beach and the Back Beach. The Front Beach extends from the city limit to Mean High Water. Sand in this subarea is in constant motion. Sand migrates between the bars and offshore bars and is transported by longshore currents. The Back Beach comprises that area between Mean High Water and the state setback line. Sand in this subarea is moved by wind and water and stabilized by vegetation, forming low dunes.</p> <p>CLIMATE Salt Spray</p> <p>GEOLOGY Oxidized Barrier Sands and Shells</p> <p>SUBSURFACE HYDROLOGY Saline Shallow Aquifer</p> <p>SURFACE HYDROLOGY Mean High Water</p> <p>10 Year Storm Flooding</p> <p>25 Year Storm Flooding</p> <p>SOILS Oxidized Barrier Sands and Shells</p> <p>VEGETATION Widely scattered herbaceous vegetation and shrubs. Sea Oats, railroad vine, sea purslane, sea purslane, yucca, salt bush, invasion of Australian Pine.</p> <p>WILDLIFE Loggerhead Turtle, Bottle-nosed Dolphin, Otter, Manatee, Brown Pelican, Snowy Egret, Red-breasted Merganser, American Oystercatcher, Semi-palmated Plover, Piping Plover, Snowy Plover, Wilson's Plover, Black-bellied Plover, Ruddy Turnstone, Willet, King, Least Sandpiper, Dunlin, Semipalmated Sandpiper, Western Sandpiper, Sanderling, Herring Gull, Ring-billed Gull, Laughing Gull, Forster's Tern, Least Tern, Royal Tern, Sandwich Tern, Caspian Tern, Black Skimmer.</p>		<p>The Gulf Beach Ridge Zone is the major ridge immediately behind the beach. It is stabilized by dense vegetation. Blind Pond is a subarea within this zone - is of very recent formation and susceptible to dramatic change.</p> <p>CLIMATE</p> <p>GEOLOGY</p> <p>SUBSURFACE HYDROLOGY Fresh Water Table Aquifer</p> <p>SURFACE HYDROLOGY Seasonally Flooded</p> <p>10 Year Storm Flooding</p> <p>SOILS Thin Organics</p> <p>VEGETATION Sea grape, yucca, sea oaks, wild olive, cabbage palmetto, wax myrtle, invasion of Australian Pine.</p> <p>WILDLIFE Box Turtle, Gopher Tortoise, Green Anole, Key West Anole, Five-lined Skink, Six-lined Racerunner, Man-bellied Plover, Ruddy Turnstone, Willet, King, Least Sandpiper, Dunlin, Semipalmated Sandpiper, Western Sandpiper, Sanderling, Herring Gull, Ring-billed Gull, Laughing Gull, Forster's Tern, Least Tern, Royal Tern, Sandwich Tern, Caspian Tern, Black Skimmer.</p>	<p>The Interior Wetland Basin is the interior bowl which serves as a fresh water reservoir. It is composed of parallel systems of ridges and swales with corresponding bands of vegetation. There are two sub-areas within this zone - lowland and upland. The lowland area is composed of low ridges and wide swales and experiences extended periods of flooding each year. The upland consists of higher, broader ridges and narrower swales, and is characterized by less frequent flooding and more upland vegetation types.</p> <p>CLIMATE</p> <p>GEOLOGY</p> <p>SUBSURFACE HYDROLOGY Fresh Water Table Aquifer</p> <p>SURFACE HYDROLOGY Seasonal High Water Table at Surface</p> <p>Seasonally Flooded</p> <p>10 Year Storm Flooding</p> <p>SOILS Organics over Sand Marl</p> <p>VEGETATION Vegetation varies according to elevation and water levels. Swales: Cordgrass, sawgrass, andropogon, water hyacinth, buttonwood, cattails, spatterdock, hydrilla, charr, duckweed, widgeon. Low ridges: Marsh elder, leather fern, wax myrtle, cabbage palmetto. Invasion of Brazilian pepper and Australian Pine.</p> <p>WILDLIFE American Alligator, Box Turtle, Chicken Turtle, Soft Shell Turtle, Green Anole, Key West Anole, Five-lined Skink, Six-lined Racerunner, Black Racer, Indigo Snake, Frog, Opossum, Armadillo, Marsh Rabbit, Sanibel Rice Rat, Sanibel Cotton Rat, Raccoon, Otter, Florida Bobcat, Pied-billed Grebe, Anhinga, Least Bittern, Mottled Duck, Blue-winged Teal, King Rail, Virginia Rail, Sora, Common Gallinule, Killdeer, Spotted Sandpiper, Common Snipe, Belted Kingfisher, Long-billed Marsh Wren, Swamp Sparrow.</p>	<p>The Mid-Island Ridges Zone comprises the major ridges along the central axis of the island interior and includes some of the highest elevations. In most areas this zone divides the Bay-Mangrove watershed from the Interior Wetlands watershed.</p> <p>CLIMATE Salt Spray</p> <p>GEOLOGY</p> <p>SUBSURFACE HYDROLOGY Fresh Water Table Aquifer</p> <p>SURFACE HYDROLOGY Seasonally Flooded</p> <p>10 Year Storm Flooding</p> <p>SOILS Thin Organics</p> <p>VEGETATION West Indian Flora, Cabbage palmetto, sea palmetto, sea-grape, guano lime, wild lime, wild coffee, myrsine, wax myrtle, buckthorn, poison ivy, Virginia creeper, century plant. Invasion of Australian Pine and Brazilian pepper.</p> <p>WILDLIFE Copher Tortoise, Green Anole, Key West Anole, Five-lined Skink, Six-lined Racerunner, Black Racer, Indigo Snake, Coral Snake, Diamondback Rattlesnake, Southern Toad, Green Treefrog, Squirrel Treefrog, Opossum, Armadillo, Marsh Rabbit, Sanibel Rice Rat, Sanibel Cotton Rat, Florida Panther, Florida Bobcat, Bobwhite, Smooth-billed Ani, Red-bellied Woodpecker, Great Crested Flycatcher, Purple Martin, Fish Crow, Starling, White-eyed Vireo, Prairie Warbler, House Sparrow, Cardinal.</p>	<p>The Mangrove Zone includes all areas of red, black and white mangroves, as well as the tidal flats and hardwood hammocks within them. Much of this zone, including all areas of red mangrove, is subject to daily tidal flooding. Other areas of the zone are subject to extended periods of flooding every year.</p> <p>CLIMATE</p> <p>GEOLOGY Oxidized barrier sands and shells</p> <p>SUBSURFACE HYDROLOGY Saline Shallow Aquifer</p> <p>SURFACE HYDROLOGY Mean High Water</p> <p>Seasonally Flooded</p> <p>10 Year Storm Flooding</p> <p>25 Year Storm Flooding</p> <p>SOILS Peat Deposits Salt Flats</p> <p>VEGETATION Mostly mangroves with hardwoods at higher elevations. Vegetation responds to elevation and tidal patterns. Red mangroves predominate to the mean high tide line, black mangroves predominate to slightly higher elevations above the mean high tide line. Red mangrove, black mangrove, white mangrove, buttonwood, Seagrass, sea oaks and air plants.</p> <p>WILDLIFE American Alligator, Green Anole, Mangrove Watersnake, Marsh Rabbit, Otter, Florida Panther, Manatee, Bottle-nosed Dolphin, Brown Pelican, Double-crested Cormorant, Great Blue Heron, Green Heron, Snowy Egret, Louisiana Heron, Little Blue Heron, Black-crowned Night Heron, Yellow-crowned Night Heron, White Ibis, Roseate Spoonbill, Lesser Scaup Duck, Red-breasted Merganser, Bald Eagle, Osprey, Clapper Rail, American Oystercatcher, Piping Plover, Snowy Plover, Wilson's Plover, Black-bellied Plover, Ruddy Turnstone, Eastern Willet, Laughing Gull, Least Tern, Black Skimmer.</p>	<p>The Bay Beach Zone extends from the city's boundary 300' into the bay to a setback line approximately 100' behind the Mean High Water Line. It is a lower energy beach than the Gulf Beach, and includes areas of marine grasses on the bay bottom. It includes both sand beach and mud beach.</p> <p>CLIMATE</p> <p>GEOLOGY Muds, Organic Materials, Sands and Shells</p> <p>SUBSURFACE HYDROLOGY Saline Shallow Aquifer</p> <p>SURFACE HYDROLOGY</p> <p>10 Year Storm Flooding</p> <p>25 Year Storm Flooding</p> <p>SOILS Muds, Organic Materials, Sands and Shells</p> <p>VEGETATION Sand beach: Railroad vine, sea purslane, sea purslane, yucca, salt bush, sundrops. Invasion of Australian Pine. Mud beach: Red Mangroves Submerged beach: Marine grasses.</p> <p>WILDLIFE Loggerhead Turtle, Bottle-nosed Dolphin, Otter, Manatee, Brown Pelican, Snowy Egret, Red-breasted Merganser, American Oystercatcher, Semi-palmated Plover, Piping Plover, Snowy Plover, Wilson's Plover, Black-bellied Plover, Ruddy Turnstone, Willet, King, Least Sandpiper, Dunlin, Semipalmated Sandpiper, Western Sandpiper, Sanderling, Herring Gull, Ring-billed Gull, Laughing Gull, Forster's Tern, Least Tern, Royal Tern, Sandwich Tern, Caspian Tern, Black Skimmer.</p>				

ECOLOGICAL ZONES: INVENTORY

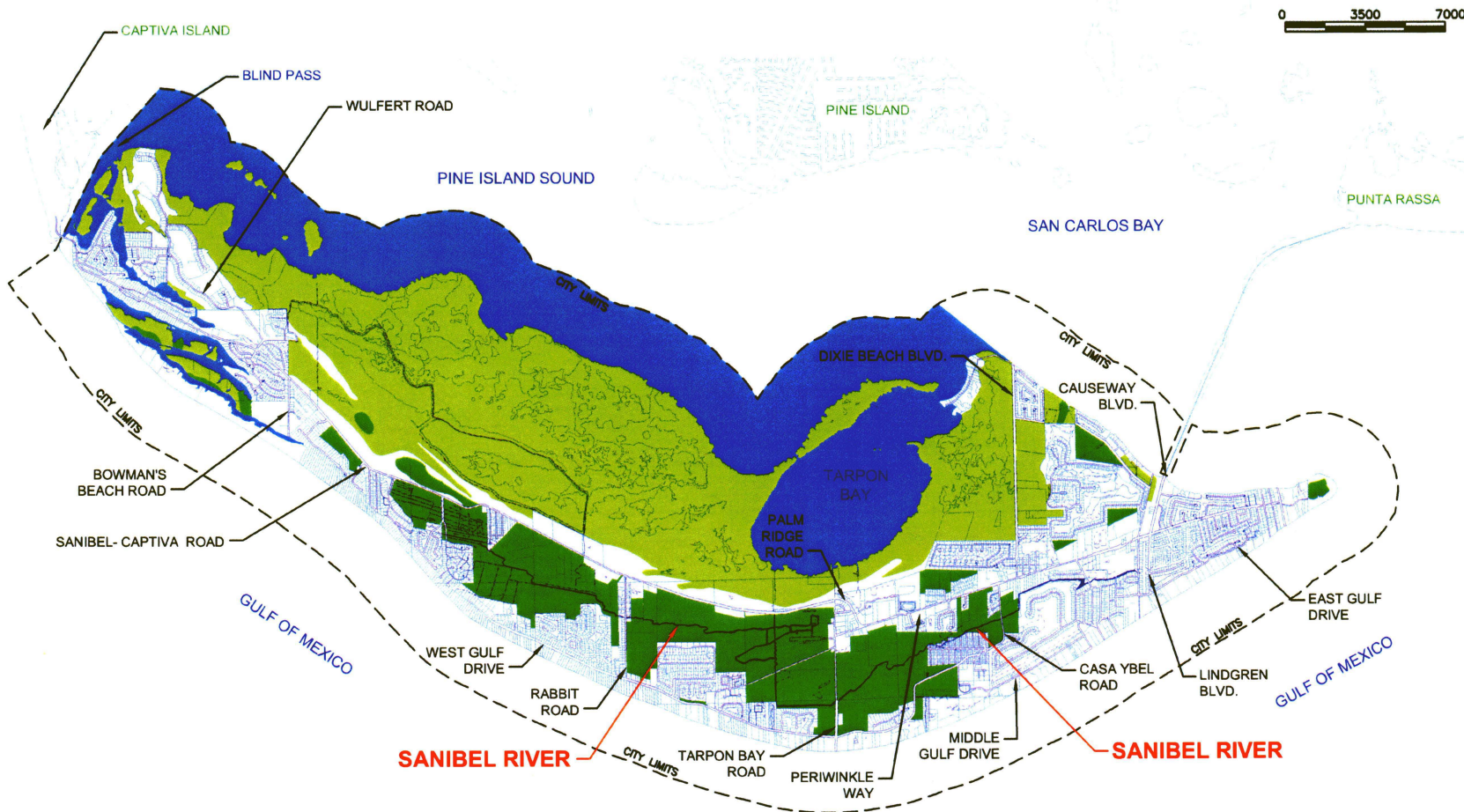


ECOLOGICAL ZONES:FUNCTIONS



GULF BEACH		GULF BEACH RIDGE	INTERIOR WETLAND BASIN			MID-ISLAND RIDGES	MANGROVES			BAY BEACH	
FRONT BEACH	BACK BEACH		UPLAND	LOWLAND	UPLAND		MANGROVES	TIDAL FLATS	MANGROVES		
MANAGEMENT GUIDELINES		MANAGEMENT GUIDELINES	MANAGEMENT GUIDELINES			MANAGEMENT GUIDELINES	MANAGEMENT GUIDELINES		MANAGEMENT GUIDELINES		
STORM PROTECTION AND SHORELINE STABILIZATION Maintain natural profile of beach bars, bays, and dunes: - Prohibit removal of sediments from beach. - Prohibit construction of any sort on Front Beach. - Prohibit construction on Back Beach except to provide beach access. - Restrict public beach access to elevated walkways over the Back Beach. Maintain sand reservoir in bars, bays, and dunes: - Prohibit removal of sediments from beach. Maintain natural patterns of gradual and dispersed runoff from land: - Restrict runoff from paved and developed areas onto beach. Allow for longshore sand movement: - Prohibit construction of groins or any other structures which inhibit or prevent sand movement. Maintain hardy dune vegetation: - Restrict public beach access to elevated walkways over the Back Beach. - Prohibit clearance of hardy native vegetation. Replace Australian Pines on Back Beach with hardy native dune vegetation.		STORM AND FLOOD PROTECTION AND SHORELINE STABILIZATION Maintain natural profile and elevation of ridge: - Prohibit development which would lower existing elevation. Maintain hardy native vegetation: - Restrict clearance of existing native vegetation. - Establish hardy native vegetation in areas which are not well vegetated. - Replace Australian Pine with hardy native vegetation whenever possible. Maintain storm protection and shoreline stabilization functions of Gulf Beach: - Restrict runoff from paved or developed areas from draining onto the Gulf Beach Zone.	FLOOD PROTECTION Maintain water storage capacity of the Interior Wetland Basin: - Prohibit development activities which would result in a reduction of freshwater storage capacity. - Prohibit development which would alter flow patterns of water circulation: - Do not impede or impound water flow. - Improve the Sanibel River system to provide for a continuous free-flowing system. MAINTENANCE OF WATER QUALITY Maintain natural free-flowing patterns of water circulation: - See guidelines above. Maintain natural patterns of gradual and dispersed runoff: - Retard and disperse runoff from paved and developed areas. Filter runoff from paved and developed areas through vegetation and soil: - Limit amount of cleared area and impervious surfaces. Regulate quality of domestic and individual wastes discharged into Interior Wetland Basin: - Provide that all released effluent be of water quality equal to that achieved by advanced treatment.			FLOOD PROTECTION Maintain existing elevation of ridge: - Prohibit development activities which would result in lowering elevation of ridge. MAINTENANCE OF WATER QUALITY Maintain gradual and dispersed runoff: - Retard and disperse runoff from paved and developed areas. Filter runoff from paved and developed areas through vegetation and soil: - Limit amount of cleared area and impervious surface. - Retard runoff over porous soils. MAINTENANCE OF FRESH WATER SYSTEM Maintain recharge of runoff to fresh water lens: - Limit cleared area and impervious surfaces. Retard runoff over porous soils. Maintain drainage of runoff to interior wetland: - Restrict alteration of existing natural drainageways. Maintain integrity of aquiclade between shallow saline aquifer and fresh water lens: - Prohibit excavation of the aquiclade. - See guidelines above.			STORM PROTECTION, SHORELINE STABILIZATION, LAND BUILDING Maintain healthy mangroves: - Protect mangroves. - Restrict excavation or filling. - Maintain good water quality. MAINTAIN WATER QUALITY Maintain healthy mangroves: - See guidelines above. Regulate quality of domestic and industrial wastes discharged into Mangrove Zone: - Provide that all water or other effluent which is released be of water quality equal to that achieved by advanced treatment prior to its release. Maintain natural patterns of water circulation: - Elevate roads and pathways so as not to impound or impede water flow. Maintain existing natural patterns of fresh water runoff from interior. Maintain water quality function of Mid-Island Ridges Zone: - Refer to guidelines for Mid-Island Ridges Zone. MAINTENANCE OF MARINE LIFE AND WILDLIFE Maintain healthy mangroves: - See guidelines above. Maintain water quality: - See guidelines above.		STORM PROTECTION AND SHORELINE STABILIZATION Maintain natural profile of beach: - Prohibit removal of sediments from beach. - Prohibit construction on beach which would result in change of the natural beach profile. - Restrict public access over vegetated areas of beach to elevated walkways. Maintain natural patterns of gradual and dispersed runoff from land: - Restrict runoff to beach from developed areas. Allow for longshore sand movement: - Prohibit construction of groins or any other structures which inhibit sand movement. Maintain hardy beach vegetation: - Restrict public access over vegetated areas of beach to elevated walkways. - Restrict clearance of native beach vegetation. Replace Australian Pines on the beach with hardy native vegetation.
MAINTENANCE OF MARINE LIFE AND WILDLIFE Maintain access to beach from water: - Prohibit discharge of insufficiently treated domestic or industrial wastes. - Restrict runoff from paved and developed areas onto beach.		MAINTENANCE OF WATER QUALITY Maintain gradual and dispersed runoff: - Retard and disperse runoff from paved and developed areas. Maintain integrity of aquiclade between shallow saline aquifer and freshwater lens: - Filter runoff from paved and developed areas through vegetation and soil: - Limit cleared area and impervious surfaces. MAINTENANCE OF FRESH WATER SYSTEM Maintain recharge of runoff to freshwater lens: - Limit cleared area and impervious surfaces. Retard runoff over porous soils. Maintain sufficient water levels to prevent salt water intrusion. Maintain integrity of aquiclade between shallow saline aquifer and freshwater lens: - Prohibit excavation of the aquiclade. Maintain natural free-flowing patterns of water circulation: - See guidelines above.	MAINTENANCE OF ISLAND WILDLIFE Maintain good water quality: - See guidelines above. Maintain fresh water system: - See guidelines above. Maintain wildlife access to water: - Provide for wildlife corridors connecting conservation areas with Sanibel Slough. Maintain native vegetation of value to wildlife: - Restrict clearance of vegetation valuable to wildlife. - Remove exotic plant species which out compete or displace native species.								

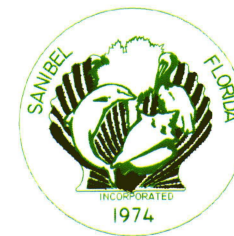
ECOLOGICAL ZONES: MANAGEMENT GUIDELINES



LEGEND

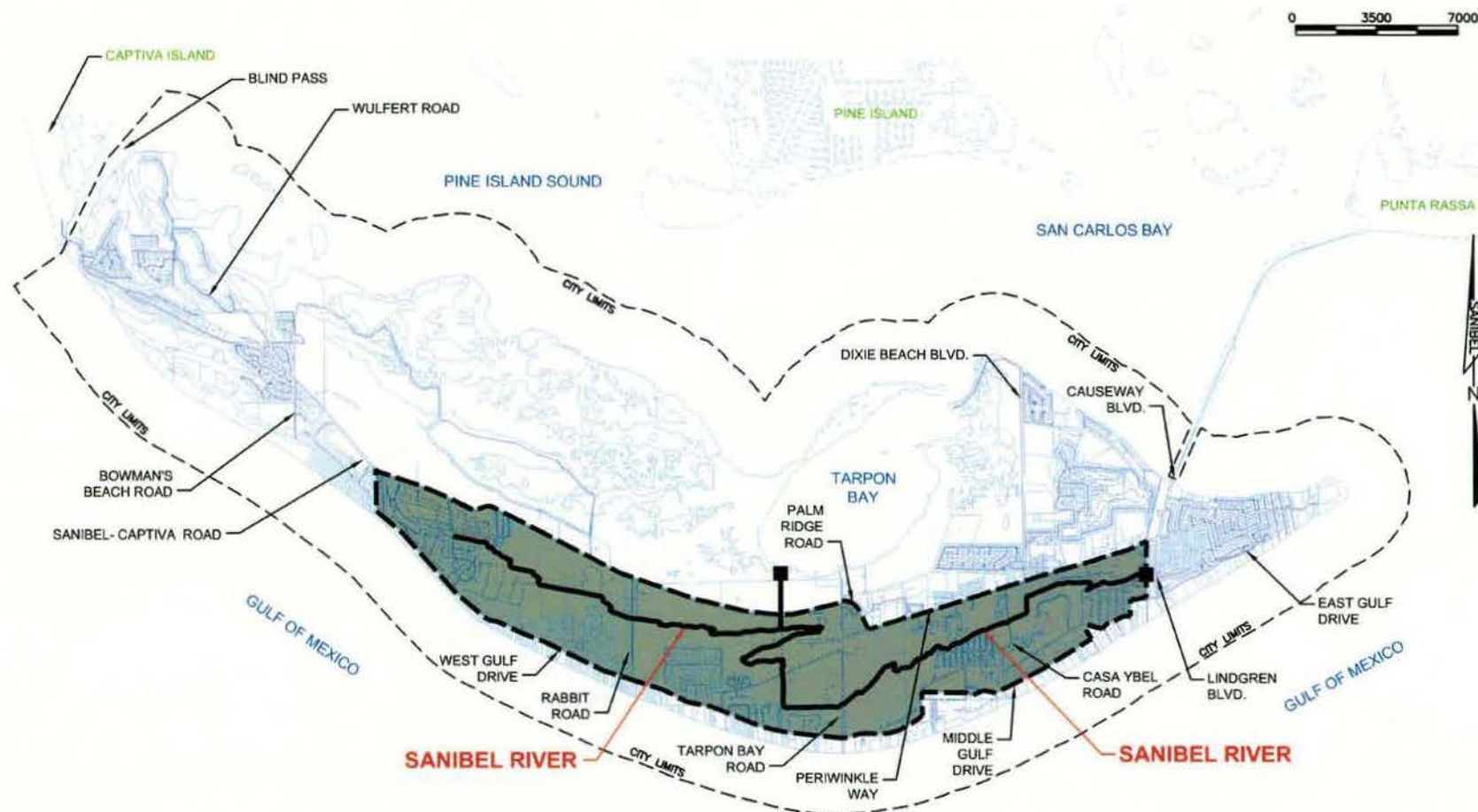
- AQUATIC PRESERVE
- MANGROVES
- INTERIOR WETLANDS

Source: This graphic was redrawn from the 1997 *Sanibel Plan*. The principle source of the base map used in this illustration is from the Lee County Property Appraiser's Office. Prepared by the Planning Department.



INFORMATIONAL
NON-REGULATORY
ILLUSTRATION

WETLANDS

**LEGEND****FRESHWATER MANAGEMENT AREA****SURFACE WATER CONTROL STRUCTURE**

Source: This graphic was updated and redrawn from the 1997 *Sanibel Plan*.

The principle source of the base map used in this illustration is from the Lee County Property Appraiser's Office.

Prepared by the Planning Department.



INFORMATIONAL
NON-REGULATORY
ILLUSTRATION

FRESHWATER MANAGEMENT AREA

Section 3.2.3.

Natural Groundwater Aquifer Recharge Goals, Objectives and Policies

Pursuant to Section 163.3177, Florida Statutes.

Background Discussion

The purpose of this element is to provide for maintenance of the functions of natural drainage features and groundwater recharge areas.

The data and analyses for this element of the Sanibel Plan, pursuant to Section 163.3177(6)(c), Florida Statutes is provided in this subsection.

The location of Sanibel is such that local recharge of the Florida aquifer is nonexistent. The water quantity and quality of the groundwater table aquifer is the major aquifer recharge issue for this community. The protection of wellheads is another.

The groundwater system underlying the City of Sanibel consists of the water table aquifer and the Floridan aquifer (Lower Hawthorne and Suwanee aquifers). The upper and lower Floridan aquifers lie below the water table aquifer and are separated by confining layers with relatively low permeability. A very low percentage of local average annual rainfall percolates into the Floridan aquifer. The South Florida Water Management District has not designated any areas in the City of Sanibel as a recharge area for the Floridan aquifer.

The most significant problem related to groundwater recharge in the City of Sanibel is localized contamination of the water table aquifer from wastewater disposal systems and stormwater runoff.

Penetration of confining layers of the aquifers for well installation creates the potential for interchange of water between aquifers at well sites, thereby effectively creating potential recharge sites. Consumptive use permits from the Water Management District require protection of well field areas to prevent contamination of the aquifers. However, withdrawal from the aquifers for private irrigation purposes can have an adverse impact on the quality of water in the aquifers used by Island Water Association (IWA). This degradation of the water quality of the aquifers results in costlier treatment to produce potable water and thus increases costs to IWA's customers.

The major drainage feature of the City of Sanibel is the Freshwater Management Area. The Interior Wetlands Conservation District has been established within the Freshwater Management Area to regulate development within this major drainage feature of the City. Existing regulations and programs that govern land use and development of natural drainage features, the Freshwater Management Area and the Wetlands Conservation Lands, are adequate for maintaining the functions of Sanibel's natural drainage features and groundwater recharge areas.

The Surface Water Management Plan was developed to control flooding and to enhance the water quality and quantity of this Freshwater Management Area.

Plan for Aquifer Recharge

1. The City of Sanibel's stormwater drainage programs and regulations should continue to emphasize the preservation of natural drainage features.

2. The City of Sanibel should also continue to encourage the reuse of treated effluent for irrigation as a means of increasing recharge of the water table aquifer.
3. The City and IWA should pursue some means of allowing Local regulation of shallow wells.

Goals, Objectives and Policies

Goal Statement

Protect the natural recharge of the groundwater aquifer to ensure the conservation of water resources and the maintenance of water quality.

Objective 1

The quality and quantity of Sanibel's groundwater resources will not be degraded.

Policy 1.1. Excavation that results in penetration of the aquiclude is prohibited.

Policy 1.2. Pursue means to retain local control over the use of fertilizers, pesticides and other chemicals that will result in the degradation of the quality of groundwater. Continue implementation of the program regulating use of fertilizers, pesticides and other chemicals that may result in the degradation of the quality of groundwater.

Section 3.2.4.

Historic Preservation Element

Pursuant to Section 163.3177, Florida Statutes.

Background Discussion

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(7)(1), Florida Statutes*, are provided in this subsection.

Sanibel has a rich historical heritage dating from the first settlements of the Caloosa Indians to the small agricultural, fishing and resort community of the first half of the 20th century.

Sanibel's history over the past century has been one of alternate growth and decline. About 1888, agricultural development started and spread over the next 40 years to all of the Island's arable land. During this period, several hurricanes with accompanying flood tides ranging from nine to 13 feet high struck Sanibel. The last hurricane of that period, in 1926, changed the course of the Island's history, inundating the entire Island with saltwater. After this disaster, many of the residents of the Island were financially ruined and forced to leave. The remainder stayed to seek a livelihood serving winter visitors and tourists.

Little growth occurred between 1927 and 1944, when the permanent resident population is reported to have been 100, except for a gradual increase in the number of visitors and development of cottages along the shore. In the 1950s, Sanibel's reputation for shell collecting and tourism grew, with a parallel development of residents and services.

Until this time, most buildings were constructed on the Island's higher land elevations, approximately five feet above sea level. This pattern changed radically after construction of the Causeway in 1963, when a development boom began on the Island. Land was developed that earlier residents had wisely avoided. The effect of the *Sanibel Plan* and flood regulations has resulted in a return to the use of piling structures, including the raised elevation of multi-storied buildings.

Historic remnants are not merely objects of interest to a pedantic chronicler, an antiquary or a passing tourist. They are testimonies of successful adaptations by past generations and thus can act as beacons to guide present and future generations in their striving to attain a fitting adaptation to the environment. This is particularly true on a barrier island such as Sanibel where structures are vulnerable to destructive tropical storms and hurricanes. Many of the remaining structures are of historic significance because they are irreplaceable as resources of educational importance and evidence of human survival through past disasters. Those structures that remain provide an important lesson in survival. The Caloosa Indians obtained additional elevation for their houses by building mounds of shells. Most surviving structures from the late 19th century were built on high ground or elevated above flood tides on piling. The Lighthouse Keeper's Quarters (1884), the Bailey House (1896) and the Cooper Homestead (1891) are all examples of successful adaptation. These historic sites and structures, among others, are irreplaceable resources that should be maintained for future residents and visitors.

The Historical Preservation Committee has been formed to establish guidelines for registration, classifying and setting priorities for preservation. The following sites and structures have been placed on the historic site list.

**Local Register of
Historic Sites and Structures**

Landmark	Date of Inclusion
Indian Mound "A"	March 19, 1991
O. Bowen Grave	May 21, 1991
Bailey House	May 21, 1991
Cooper Homestead	May 21, 1991
Black School	May 21, 1991
White School	May 21, 1991
Nutt Homestead	May 21, 1991
1910 Post Office	May 21, 1991
Community House	May 19, 1992
Sanibel Community Church	May 19, 1992
Rutland Graves	May 19, 1992
The Beach House	May 19, 1992
Shore Haven	May 19, 1992
Bailey Store	May 19, 1992
Miss Charlotta's Tea Room	May 19, 1992
White Heron House	September 7, 1993
Morning Glories Cottage	March 4, 2003
Rutland Home	March 4, 2003
The Burnap Cottage	March 4, 2003

Source: Local Register of Historic Landmarks

The following sites and structures were identified in the 1976 *Sanibel Plan*, as follows

**Historic Sites and Structures
identified in the 1976 Sanibel Plan**

Sanibel Lighthouse, Brick Hut and Keeper's Quarters:
Point Ybel.

Wulfert Cemetery: Wulfert Peninsula.

Sanibel Cemetery: off Casa Ybel Road.

Clarence Rutland House: Moved to City Hall Site
(Settler's Museum) in 1982.

The Lighthouse Keeper's Quarters and some Indian
Mounds on federal property receive protection.

The Lighthouse and Keeper's Quarters are also listed on
the National Register of Historic Places.

Source: 1976 Sanibel Plan

There are additional sites and structures that may be considered by the Sanibel Historical Society for inclusion in the Local Register of Historic Sites and Structures. The City should protect these and other historic sites by making historical evaluations in accordance with the priorities recommended by the Florida Department of State. Those not protected by Federal or State law should be covered by City Ordinance.

Historic preservation includes more than preserving historic buildings. The City's roadways, particularly the arterial and collector roads, still retain their rural character. As two lane

roads, these up-to-date transportation facilities contribute significantly to the historical character of the City of Sanibel. Retaining the City's historic roadways contributes to the City's historic preservation efforts.

In general, the Gulf beaches on Sanibel still retain their natural characteristics. Retaining the natural Gulf beach also complements the City's historic preservation efforts.

The assemblage of the Sanibel Historical Village and Museum and the restoration of its historic structures is nearly complete. The three structures added to the Local List of Historic Sites and Structures, since the Sanibel Plan was extensively revised in 1997, are at the Historical Village. These structures are the Rutland House, Burnap Cottage and Morning Glories Cottage. The Old Schoolhouse for White Children, recently used as a theater, has been moved to the Historical Village. This historic landmark has been restored and is open to the public. In 2012, Shore Haven and its ancillary Caretaker's Cottage were relocated to the Sanibel Historical Village.

The City has acquired the Sanibel Lighthouse and Keeper's Quarters and the surrounding grounds.

The Sanibel Historical Museum and Village, Inc. [a 501(c) 3] operates the Sanibel Historical Village located on the City Hall site.

Provisions of the Plan for Historic Preservation

1. Maintain a list of Sanibel's historic sites and places with a historical resume and documentation of each.

2. Historic resources should receive the same consideration and protection as natural resources from City departments and official committees.
3. Periodically review this list for updating, additions or deletions.
4. Make historical evaluations in accordance with the priorities recommended by the Florida Department of State.
5. Work with the Florida Department of State to nominate the most valuable historic structures, sites or areas to the National Register of Historic Places, the State Inventory of Historic Sites or another list or designation as appropriate.
6. Notify owners of the property of its historic value and seek their cooperation utilizing the incentive program established by City Council Resolution 92-111.
7. Continue to protect and preserve the irreplaceable historic resources of Sanibel.
8. Maintain an Island Historical Village and Museum that includes historical and archeological exhibits. (The Clarence Rutland House, moved to the City Hall site in 1982, was officially dedicated as the Island Historical Museum on November 10, 1984. Other structures have since been assembled on the grounds to create the village.)

Goals, Objectives and Policies

Goal Statement

Protect and appropriately use historic resources to ensure their preservation as the development anticipated in the Future Land Use Element of the Plan occurs.

Objective 1

Protect historic and archaeological resources, including structures, sites, roadways and beaches to ensure continued preservation and sensitive use and reuse of these resources.

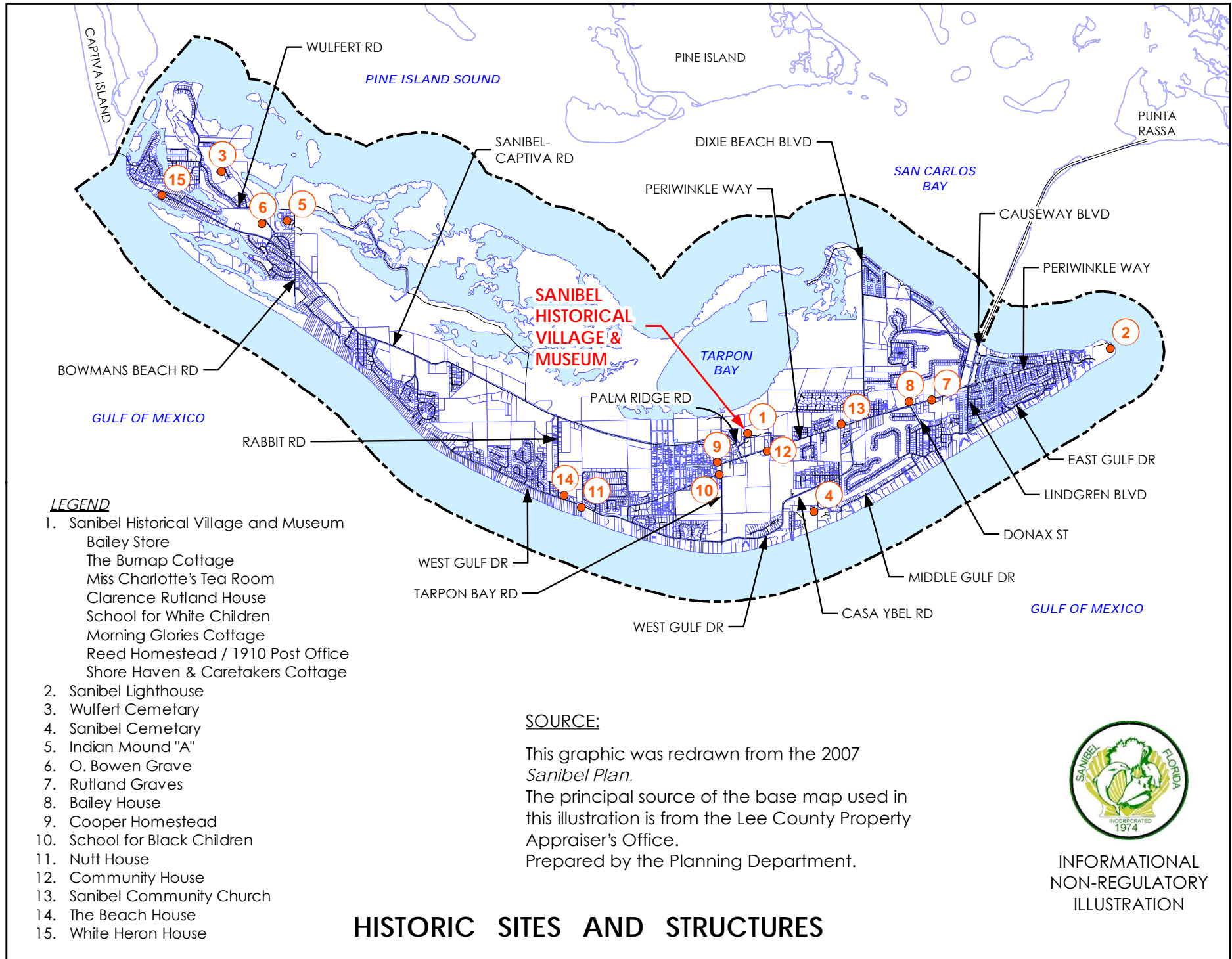
Policy 1.1. First consideration should be given to retaining the designated historical structure in its historical setting and context.

Policy 1.2. Maintain the requirements of the Land Development Code and the City's historical preservation program designed to protect and preserve the archeological and historical resources on Sanibel.

Policy 1.3. Ensure continued visual access to privately owned cultural and historic resources.

Policy 1.4. Retain a design in the historic roadway system that preserves the historic character of the roadways and surrounding land uses.

Policy 1.5. Retain the natural character of the Gulf beaches for their significant contribution to the historical character of the City of Sanibel.



Section 3.2.5. Scenic Preservation Element

Pursuant to Section 163.3177(7)(1), Florida Statutes.

Background Discussion

The development of a Vision Statement for the Sanibel Plan emphasizes the importance of scenic resources in the preservation of the character of the community.

Sanibel is renowned for the natural beauty of its Gulf beaches and subtropical landscape. These are important economic and aesthetic resources for residents, businesses and visitors. Sanibel's reputation as a unique retreat of unspoiled beauty continues to attract more residents and tourists annually. The resources of the Island experienced by most residents and visitors are subject to degradation and therefore require some measure of protection and regulation. These resources are the beaches, wetlands, waterways and water bodies, the wildlife refuge and the major roadways that provide access to them.

The beaches in the east and east central sectors of the Island are to some degree impacted by large condominiums that are constructed close to the beach with no visual screen. As a result, to some extent these are no longer the "unspoiled" beaches that have long attracted visitors to Sanibel. However, at the western end of the Island and some areas of single-family homes on the eastern end, single-family houses are set back sufficiently from the beach and surrounded by dense vegetation so that they do not impair the scenic values of the beach. In this way the "natural" character of the shoreline is preserved for all to enjoy, resident and visitor alike.

A beach setback and buffer of dense vegetation have been employed in new developments near the beach, whatever the density or land use. In addition to the scenic impact, storm protection is enhanced by such a strategy. It also benefits marine and wildlife that use the beach for nesting and feeding.

A limitation on building heights of approximately 45 feet above mean sea level is also important with respect to scenic preservation of the beach zones. Other regulations designed to conserve the coastal environment are also important to scenic preservation. A lower building height limitation is appropriate for single-family residential areas in order to retain the character of the community.

The height of all new buildings is not to exceed three stories above the base flood elevation. However, Section 3.10.4 of the City Charter, as amended on March 1, 2005, addresses building back condominium buildings that are substantially damaged by a natural disaster. Where a condominium building, which is a nonconforming structure, is destroyed or substantially damaged in a natural disaster, reconstruction of which is in all other respects permitted by the Land Development Code, such reconstructed building may exceed the height of the building immediately prior to the disaster by up to one story (1) if, and to the extent, the building must be elevated above the ground level to comply with applicable flood abatement laws or regulations and (2) reconstruction without allowing for such additional height would result in the loss of a dwelling unit by its owner.

Scenic preservation of the J.N. "Ding" Darling National Wildlife Refuge is within the aegis of the U.S. Federal government. To date this has been accomplished with a beneficial impact on the Island. It is most important that the Sanibel-Captiva Conservation Foundation exercise maximum control of scenic

resources in its several land holdings in mangrove and wetland areas so that these are enjoyed in their natural state by residents and visitors.

Another major advantage for the Island's scenic resources is that of the major roadways that give access to all environments and land uses. These scenic roads generally follow the Island's two natural ridges and are connected by several roads that cross the interior. Periwinkle Way, Gulf Drive and Sanibel-Captiva Road are the City's main streets and commercial arteries with fairly high traffic volumes. These two-lane roadways, which are rural in character, contribute significantly to the scenic resources of Sanibel.

Most Island businesses are located along Periwinkle Way and many of the Island's tourist accommodations are on Gulf Drive. Land along Sanibel-Captiva Road is relatively less developed except for the Blind Pass commercial area and scattered residential subdivisions. The variety of visual experience along these roads today is due to the alteration of human-made environment and the natural landscape. This pattern of intermittent commercial development separated by dense trees and shrubs close to the road gives a casual atmosphere to even busy roads.

In order to preserve the casual scenic quality, future commercial and other non-residential uses should be concentrated in nodes along the road, separated by open spaces, recreational and residential uses in much the same manner as they are today.

In 2004, exotic species of trees along Periwinkle Way were destroyed and removed as a result of the destructive forces of Hurricane Charley. Existing native species of trees or plants in the road right-of-way should be preserved, except where they

are a traffic or storm hazard, a nuisance or where necessitated by limited street improvements. If removal of native trees becomes necessary, a provision should be established to preserve scenic quality even as further development or road improvements occur. Such buffers can also accommodate bicycle and pedestrian paths. In commercial areas, curb cuts should be kept to a minimum and shell should be used in parking lots instead of impervious paving such as asphalt. These standards will contribute to the preservation of the "casual" retreat atmosphere and serve safety and storm drainage purposes simultaneously. Signs for commercial establishments should be clearly legible and integrated with the vegetation buffer.

Major cross-Island routes, Casa Ybel Road, Tarpon Bay Road and Rabbit Road, provide a totally different experience of the Island's various natural landscapes. These roads cross through the heavily treed upland wetlands, to the grass lowland and the Sanibel River, to the Gulf Beach Ridge and Gulf Drive. Vegetation buffers should be established and residential uses should be concentrated in upland areas where houses can be screened by trees.

The City of Sanibel abounds with open spaces and preserved lands. Although the scenic value of these natural resources was affected by Hurricane Charley, the most significant damage to the City's scenic resources was along scenic roadways, particularly Periwinkle Way. The City has adopted a Master Plan for the restoration of this important artery which is the main street of the City of Sanibel. Implementation of that plan began in 2006.

Plan for Scenic Preservation

These guidelines for maintaining scenic quality are consistent with other objectives of the plan, and are, in many cases, also recommended for other reasons such as storm protection, traffic safety and water quality maintenance. Guidelines for scenic preservation allow the City of Sanibel to accommodate growth while preserving the beauty of its natural areas and roadways.

The following are the general provisions of the Plan for Scenic Preservation:

1. Consideration should be given to the historical and scenic benefits of mature Australian pines in some open space and recreational areas and these trees should be retained for their historical and scenic attributes.
2. Concentrate future commercial uses on Periwinkle Way and Sanibel-Captiva Road in nodes, rather than spreading them out in a continuous strip.
3. Encourage the use of shell surfacing, or alternatively, other suitable pervious surfacing for parking areas in order to maintain a casual retreat atmosphere. Concrete and asphalt paving of parking areas should be minimized.
4. Integrate signs with the roadway buffers.
5. Prohibit neon and flashing signs.
6. Require vegetation buffers between commercial developments and roadways and along property

lines to enhance compatibility of buildings with community as a whole.

7. Encourage architectural compatibility of buildings within established neighborhoods and the community as a whole.
8. In order to maintain the dark sky of this non-urban community, require outdoor lighting to be directed downward to minimize sky glow.

Goals, Objectives and Policies

Goal Statement

Protect or enhance scenic resources to ensure their preservation as the development anticipated in the Future Land Use Element occurs.

Objective 1

Ensure the preservation of scenic resources by continued implementation of the development regulations and performance standards of the Land Development Code and other City programs.

Policy 1.1. The height of buildings will not exceed three stories above the base flood elevation. However, that where a condominium building, which is a nonconforming structure, is destroyed or substantially damaged in a natural disaster, reconstruction of which is in all other respects permitted by the Land Development Code, such reconstructed building may exceed the height of the building immediately prior to the disaster

by up to one story (1) if, and to the extent, the building must be elevated above the ground level to comply with applicable flood abatement laws or regulations and (2) reconstruction without allowing for such additional height would result in the loss of a dwelling unit by its owner.

Policy 1.2. Encourage beachfront property owners to maintain native vegetation between upland structures and the Gulf and Bay beaches so that the view of Sanibel from its beaches is not dominated by human-made structures.

Policy 1.3. Implement measures leading to maintenance of the Gulf beach dune system with hardy native plant species.

Policy 1.4. Vegetated buffer strips will be established along major roadways. Within the right-of-way, these buffers will provide space for the ornamental plantings and for bicycle and pedestrian circulation.

Part 3.3.

Human Support Systems

To protect the public health, safety and welfare, the water supply, transportation system, wastewater treatment, solid waste disposal, storm drainage, recreation and open space, police services, libraries, City administration, fire protection, power, education, medical facilities and public health and insect control are human support systems provided for residents and visitors within the City of Sanibel.

This Part of the *Sanibel Plan* establishes minimum level of service standards for potable water facilities, roads, wastewater treatment facilities, solid waste disposal, storm drainage systems, recreation facilities and public schools. For municipally provided facilities, capital improvements that are needed to maintain conformance with the minimum level of service standards are to be included in the Five-Year Schedule of Capital Improvements of the Capital Improvements Element of this Plan. For municipally provided facilities, capital improvements for human support systems that are not needed to maintain minimum level of service standards are not included in the Five-Year Schedule of Capital Improvements, but are to be included in the City's Capital Improvement Program.

This Part of the *Sanibel Plan* includes the Plan elements pertaining to the delivery of human support systems, i.e., public facilities. The purpose of this part of the Plan is to include in the Plan a concurrency management system to establish an ongoing mechanism which ensures that public facilities and services needed to support development are available concurrent with the impacts of development.

Pursuant to Section 163.3180, Florida Statutes, the concurrency management system is intended to ensure that issuance of a development order or development permit is conditioned upon the availability of public facilities and services necessary to serve that development. Water supply, transportation (roads), wastewater treatment, solid waste disposal, storm drainage, recreation and public school facilities are the public facilities subject to concurrency requirements.

The City has used its concurrency management system since 1998. During this time, the City's timely provision of capital improvements avoided the occurrence of any deficiencies in the level of service for human support systems. In fact, during these 22 years, no City capital improvement projects were required by the Five-Year Schedule of Capital Improvements to address deficiencies in the availability of public facilities.

In 2012, the City has practically reached "build-out". Well over 90% of the development permitted in the City by the Future Land Use Map has occurred. The City of Sanibel has matured to a redevelopment phase.

In addition, this part of the *Sanibel Plan* establishes Goals, Objectives and Policies for

- The Water Supply Element
- The Transportation Element
- The Wastewater Treatment (Water Reclamation) Element
- The Solid Waste and Recycling Element
- The Storm Drainage Element
- The Recreation and Open Space Element
- The Public Schools Facilities Element and
- The Other Human Support Systems Element

Section 3.3.1. Human Support Systems

Pursuant to Section 163.3177(3), Florida Statutes.

Background Discussion

The term Human Support Systems is used in the *Sanibel Plan* for public facilities, as described in Florida Statutes.

The City retains its concurrency management system to ensure that public facilities are available concurrent with development. However, it is important to note that the City has essentially reached “build-out”. The remaining non-conservation lands available for development consists of vacant lots in existing subdivisions (infill development) and approved subdivisions. There are a few low density tracts that are available for residential development. There are essentially no vacant lands in the Resort Housing District and less than 10 acres of vacant commercially zoned lands.

The City is in a redevelopment phase. The provision of human support systems will focus on maintenance and upgrades of existing public facilities.

The application of the level of service standard for roads concludes that existing roadways are adequate to serve the remaining development and is consistent with the City’s established position that additional roads and additional lanes on existing roads will not be added to the City’s roadways.

The application of the level of service standard for the City’s Advanced Water Reclamation (wastewater treatment) plants demonstrates that there is adequate capacity to accommodate remaining development. Newly developed and redeveloped

properties will have to address the adequacy of the wastewater collection system, both on-site and off-site.

The application of the level of service standard for the Potable Water Treatment Plant demonstrates that there is capacity to serve the remaining development on both Sanibel and Captiva. Newly developed and redeveloped properties will have to address the adequacy of the water distribution system, both on-site and off-site.

The City’s surface water management system is in place and adequate to serve remaining development. Newly developed and redeveloped properties will have to address on-site retention and outfall considerations.

The City’s recreational facilities are adequate to serve the remaining development permitted by the Future Land Use Map. However, the City will continue to provide recreation facilities and programs that are beyond the minimum level of service standards for recreational facilities established in this Plan.

The Public Schools Facilities Element was added to the Sanibel Plan to meet State requirements that have subsequently been repealed. However, many components of the Public Schools Facilities Element are also required by the Interlocal Agreement between the City and the Lee County School District. Following the 2012 evaluation of the Sanibel Plan, the City intends to discuss revisions to the Interlocal Agreement with the Lee County School Board.

The following goal, objectives and policies are applicable to all human support systems, addressed in this Part of the *Sanibel Plan*. Additional goals, objectives and policies are provided for specific elements of this Human Support Systems Part of the

Plan. These objectives, policies and standards establish the concurrency management system for the *Sanibel Plan*.

This concurrency management system is implemented through provisions of the Sanibel Land Development Code.

Goals Objectives and Policies

Goal Statement

Provide adequate human support systems for the residents and land uses in the City of Sanibel, in a manner that protects public health, safety and welfare, promotes orderly, environmentally sensitive growth while protecting investment in public facilities.

Objective 1

Ensure the continued maintenance of an adequate level of service for human support systems through the initial and long-range planning periods of this Plan.

Policy 1.1. The Planning Department will prepare an annual summary of capacity and demand information for each human support system.

Policy 1.2. The City will maintain, in the Capital Improvements Element of this Plan, a Five-Year Schedule of Capital Improvement needs for human support systems provided by the municipality that are needed to comply with level of service standards established in this Section of the Plan. The Five-Year Schedule of Capital Improvements will be reviewed and updated annually in conformance with the review

process for the Capital Improvements Element of this Plan.

Policy 1.3. Capital improvements for human support systems provided by the municipality that are not needed to comply with level of service standards, and, therefore, not included in the Five-Year Schedule of Capital Improvements, are to be included in the City's Capital Improvement Program.

Policy 1.4. Capital improvement projects for human support systems will be undertaken in accordance with the Five-Year Schedule of Capital Improvements provided in the Capital Improvements Element of this Plan.

Objective 2

Ensure that human support systems needed to support development are available, at or above the adopted level of service standards for roads, sanitary sewer, solid waste, drainage, potable water, parks and recreation, and public schools concurrent with the impacts of such development.

Policy 2.1. No permits will be issued for new development that would result in an increase in demand for facilities that do not comply with the minimum level of service standards established in this section of the Plan.

Policy 2.2. Pursuant to the requirements for the concurrency management required by statute, on an on-going basis, the Sanibel Land Development Code will be reviewed and amended, as required, to ensure that development orders and development permits are

issued in a manner that will not result in a reduction in the levels of service below the adopted level of service standards. The concurrency management system of the Land Development Code will retain requirements that, at the time of the issuance of a certificate of occupancy, water supply facilities, roadways, wastewater treatment facilities, solid waste disposal facilities, storm drainage systems, recreation facilities and public schools facilities, are in place and available to serve the new development, in accordance with the level of service standards for public facilities (human support systems) established in the Plan.

Since the City is close to “build-out”, it is impractical to link the replacement of existing recreational facilities to the concurrency management program for the development of additional dwelling units. Nonetheless, it is an objective of the *Sanibel Plan* to provide the recreation facilities listed in the Recreation and Open Space Element of this Plan. The schedule to replace and upgrade recreational facilities, in accordance with the Master Parks and Recreation Plan, will depend on the City’s ability to fund construction and maintenance of these improvements. Funded components of the Master Plan will be included in the City’s Five-Year Capital Improvement Plan, but these recreational facilities will not be included in the Adopted Five-Year Schedule of Capital Improvements.

Section 3.3.2. Water Supply Element

Pursuant to Sections 163.3167, 163.3177, and 163.318 Florida Statutes.

Background Discussion

The purpose of this element is to provide for adequate potable water delivery facilities and services to support existing land uses and future land use projections.

The data and analyses for this element of the *Sanibel Plan*, pursuant to Section 163.3177(6)(c), Florida Statutes is summarized in this subsection.

Adequate supply of fresh water could become a serious economic constraint upon future growth and development in the City of Sanibel.

This Water Supply Element to the *Sanibel Plan* also presents the Ten-Year Water Supply Facilities Work Plan for the City of Sanibel. This Ten-Year Plan also includes Captiva Island, which is part of unincorporated Lee County. Captiva Island's proportionate share of demand on the Water Supply Facilities Plan is approximately 20 percent of total demand.

Ten-Year Water Supply Facilities Work Plan

The population estimates and projections for the City of Sanibel and Captiva Island that were used for the preparation of this Water Supply Facilities Work Plan were taken from the 2012 Lower West Coast Water Supply Plan, adopted November 15, 2012. However, the functional population for the City of Sanibel and Captiva Island, from the Land Use Element of the

Sanibel Plan, was also used in the preparation of this Water Supply Facilities Plan.

These population estimates and projections extend past the timeframe for this Ten-Year Plan, to 2030.

The Island Water Association (IWA), a nonprofit community cooperative with exclusive franchise serving Sanibel and Captiva Islands, owns and operates the public water system on Sanibel. In 2012, the IWA operated five storage tanks which have a total capacity of 15 million gallons of water. The reverse osmosis (RO) plant currently has a permitted capability of 5.99 million gallons of water per day (MGD). The IWA distributes the treated water from its treatment facilities directly to all areas of Sanibel and Captiva. The IWA owns and operates three remote pumping stations to boost the pressure in the outlying areas of the distribution system.

The Lower Hawthorn Aquifer and the Suwannee Aquifer are the current principal source of the domestic water supply for Sanibel and Captiva residents. The subaqueous line connection to the Pine Island Water Association was re-established in 1994.

In 2000, a deep well injection well was placed in service at the Reverse Osmosis plant. The brine discharge line to the Gulf of Mexico has been retained as a backup disposal route. This injection well is also available to the Sanibel Sewer System for wet weather disposal of treated effluent.

In 2000, an amendment to the Future Land Use Map (Ecological Zones Map) established an 18.5 acre Special Use District for the Administrative Offices and Reverse Osmosis Water Treatment Plant of the IWA.

Routine maintenance keeps the reverse osmosis plant and distribution components in good operating condition. The life expectancy of the water delivery system, including plant, pumping stations, storage tanks and distribution lines, is anticipated to extend well beyond the planning period of this Plan.

The potable water treatment and delivery system that serves the City of Sanibel also serves Captiva, which is outside the City's jurisdiction. The City of Sanibel's proportionate share of demand on the water system is approximately 80%. Existing and projected demand for potable water is derived in a manner that is consistent with the population estimates and projections of this Plan.

Demand is presented on the basis of dwelling units and equivalency units for land uses other than residential uses.

Average demand, both existing and projected, are provided in the following table.

Average Demand (in million gallons per day - MGD)			
	2011	2016	2022
Average	3.49	4.1*	4.2*
* Projections from the South Florida Water Management District's Lower West Coast Water Supply Plan			
Source: Island Water Association and Sanibel Planning Department.			

The IWA operates in accordance with a consumptive use permit from the South Florida Water Management District. The

consumptive use permit allows a maximum daily allocation of 8.08 million gallons per day, which is adequate for both existing and projected demand for potable water. The IWA may need to apply for an increase in permitted average daily withdrawals from the brackish water supply to meet future demand conditions.

Both the Water Supply Element and the Conservation Element of the Sanibel Plan encourage the conservation of water resources. The conservation of water resources is the preferred approach for addressing and supplying the demand for water. In 1997, in an effort to reduce consumption, the *Sanibel Plan* was amended to reduce the level of service standard for potable water. The objective of the IWA is to serve existing and projected development on Sanibel and Captiva with existing treatment and storage facilities. Conservation, not continuing increases in the consumption rate, will be required to attain that objective or some expansion, either in production or storage capabilities, will need to be considered.

The actual level of service of the potable water delivery system is approximately 400 gallons per day per unit (dwelling units and equivalency units). This level of service includes surplus system capacity and is, therefore, higher than the level of service requirement established in this element of the *Sanibel Plan*.

Storage capacity to augment flow and pressure for peak demand and fire flow needs is adequate for current and future needs. If future water capacity is required, the IWA has the design and will consider permitting an underground storage and recovery well (ASR).

The Ten-year plan for building water supply facilities to serve existing and projected development relies on the efficient use of existing facilities, but also the expansion of the program to

reuse treated wastewater for irrigation purposes. The IWA and the City of Sanibel need to coordinate on this effort. The reuse program will be expanded as cost-effective ways are identified and implemented.

Growth in Lee County, especially in the western portion of the County, will involve increased extraction of water from the Lower Hawthorn Aquifer. Quality and quantity of water are major concerns.

The reverse osmosis treatment plant has sea water desalting capability should that need ever arise. Although the plant is not configured for sea water at this time, extensive modifications can be made to convert it. Because of the possible limitations on adequate future water supply, several alternatives for supply and conservation were considered. It is important to note that should it become necessary to use the Gulf or Bay for source water, the recovery rate would be very low and the cost of producing potable water would increase significantly.

One important conservation element is the plugging of existing unused wells tapping the Lower Hawthorn and Suwanee formation. These wells are contributing to the deterioration of the City's water supply resource that, along with other factors, might ultimately render it useless. The IWA plugs its wells promptly on abandonment.

Summary for the Ten-Year Water Supply Facilities Work Plan

The production of potable water for distribution is limited by the capacity of the treatment plant. At this point the IWA has no immediate plans to expand the capacity of the reverse osmosis plant; however, the plant can be expanded if unforeseen contingencies arise.

The existing treatment plant's capacity is adequate to maintain the current level of service standard and to meet existing demand and projected demand through the long-range planning period of the *Sanibel Plan* ending in 2022. If an increase in demand occurs, the IWA can construct an underground storage and recovery well (ASR) to accommodate the peak demand periods if deemed feasible. This ASR well is not included in the 5-Year Schedule of Capital Improvements in Part 3.5 Capital Improvements of the *Sanibel Plan*.

The Ten-Year Water Supply Facilities Work Program for the City of Sanibel has identified water supply sources for the long-range planning period of the *Sanibel Plan*. The Land Use Element and Future Land Use Map series of the *Sanibel Plan* are based on and consistent with this Ten-Year Water Supply Facilities Work Program for the City of Sanibel.

This Water Supply Element of the Sanibel Plan contains a policy (2.2) that ensures that the water supply will be available concurrently with the issuance of building permits.

Provisions of the Plan for Water Supply (Strategies and Coordination of Activities with the IWA)

1. The City shall maintain a close relationship with the IWA, whose members largely are property owners and residents of the City, assuring accord in dealing with community problems while remaining alert to any advantages of municipal ownership or franchise should the City so determine.
2. The capital improvement programs prepared by the IWA and the City shall be coordinated.

3. The IWA shall provide and upgrade service at locations where growth is projected to occur.
4. The treatment process for and the delivery of potable water for the City of Sanibel shall be supported by backup power sources for use during periods for prolonged electrical outages.
5. The City requires, as a part of the development permitting process, that all private wells be identified, so they can be considered for incorporation into the well plugging program. The City should continue to implement a program that would lead to plugging of all existing unused wells and phasing out of existing private wells that draw water from the Lower Hawthorn aquifer.
6. The City shall continue to monitor and investigate the general hydrology of the Island.
7. The City encourages the IWA to implement and continue policies that discourage over consumption of potable water.
8. The City shall assist in the implementation of the improvements necessary to upgrade the fire protection system of the City of Sanibel.
9. Maintain minimum pressure in the distribution system when hurricane evacuation order is given.
10. The City shall encourage the use of 100 percent of its reuse water.

Goals, Objectives and Policies

Goal Statement

Provide adequate potable water supply facilities for residents and land uses in the City of Sanibel in a manner that serves existing development, promotes orderly growth, protects investment in existing facilities, and conserves water resources.

Objective 1

Ensure the continued maintenance of an adequate level of service for potable water supply facilities.

Policy 1.1. Preserve and maintain existing potable water supply facilities through implementation of proper maintenance and upkeep procedures.

Policy 1.2. Provide adequate potable water supply facilities. At a minimum, potable water supply facilities will be provided in accordance with the following level of service standard.

Standard for Water Supply Facilities

An average potable water production rate of 300 gallons per day per equivalent residential unit

Policy 1.3. Improvements for replacement, expansion or increase in capacity of potable water supply facilities will be consistent with maintaining the level of service standard for potable water supply facilities.

Objective 2

To ensure the maximum feasible use of existing potable water supply facilities, the expansion of these facilities, including the distribution system, will be consistent with the Future Land Use Element of this Plan.

Policy 2.1. Developments that require the use of potable water must connect to the IWA potable water delivery system.

Policy 2.2. Development orders and building permits for new developments, or the expansion of existing developments that require additional potable water, will not be issued until the developer furnishes proof from the IWA of the availability of potable water to serve the development and makes provision for the infrastructure to deliver the water.

Objective 3

Ensure the conservation of potable water resources through the preservation and protection of the water supply.

Policy 3.1. Through regulations in the Land Development Code, continue to preserve native vegetation within developments and require the use of native vegetation for landscaping and revegetation efforts.

Policy 3.2. Implement the water shortage plan when appropriate, for the purpose of allocating and conserving water resources during periods of water shortage.

Policy 3.3. The City and the IWA should pursue some means of allowing local regulation of shallow wells for irrigation purposes.

Section 3.3.3. Transportation Element

Pursuant to Section 163.3177(3), Florida Statutes.

Background Discussion

The purpose of the Transportation Element, as identified by State statute, is to establish the desired and projected transportation system in the jurisdiction and particularly to plan for future motorized and non-motorized traffic circulation systems.

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(6)(b), Florida Statutes* is provided in this subsection; the 2001 Traffic Study by Kittleson and Associates; the 1995 Transportation Study by HNTB, Inc., and the 1988 Transportation Study by David Plummer and Associates.

This Transportation Element is founded on the City's belief that ever-increasing volumes of automobile traffic are not something like rainfall that has to be accepted. The Transportation Element is also coordinated with the long-range transportation plan of the Lee County Metropolitan Planning Organization.

Sanibel is a barrier island with attractive features for both residents and visitors. As is often the case with areas of exceptional natural beauty, there is a tendency to exploit or overuse the land to the ultimate detriment to that beauty and natural values. Therefore, a primary goal of the City has been to develop and implement a comprehensive plan for controlling and directing growth in the City so that the natural beauty and unique atmosphere is preserved while satisfying the needs of City residents, businesses and visitors.

Land use controls and the development and maintenance of transportation facilities are interrelated to the extent that new developments usually require increased transportation capacity, and additional transportation capacity tends to encourage more development. A specific objective of prior land use plans, continued in this Plan, is the development of a transportation plan that supports and is consistent with the existing and desired development of the City. This is a particular challenge in Sanibel since the desired character of the City does not lend itself to many standard traffic engineering and transportation solutions.

Transportation problems in Sanibel are further aggravated by the transportation demands of approximately 3 million visitors per year, most of whom arrive during the winter tourist season. An additional dimension to the transportation problem is that the existing road system grew in a manner without consideration of the ultimate circulation requirements of the community. The impact of this road network is that there are few alternative routes to any site on the Island. Roads are used both for access to property and to carry through traffic.

Modes of transportation used within the City include private automobiles, recreational vehicles, rental cars, trucks, bicycles, mopeds, motor scooters, taxis, walking, boats, trolleys and tour buses. The automobile is the primary mode of transportation to Sanibel and for movement within the City.

The existing street and road network within the City is depicted on the Existing and Future Traffic Circulation Map. All streets and roads are two lanes. There are no limited and controlled access facilities, public transit terminals and transfer stations, port facilities, airports, rail lines or the like in the City of Sanibel.

Roadways

The City of Sanibel is served by over 80 miles of roads. Over 60 miles of these roads are in public rights-of-way and are maintained by the City. Private roadways account for nearly 20 miles of roads within the City. The City is traversed by one major arterial roadway, Periwinkle Way, which connects to Sanibel-Captiva Road in the center of the City. This arterial runs east and west from the eastern tip of Sanibel to Captiva and generally follows the mid-Island ridge. Periwinkle Way and Sanibel-Captiva Road are two-lane roads serving most of the major commercial uses in the City and characterized by numerous intersections with private and commercial driveways. A system of collector roads connects the City's local roads, both public and private, to its arterial roadway.

There are seven major intersections along Periwinkle Way that provide access to major residential, commercial and recreational areas. These intersections are at Causeway Boulevard, Bailey Road, Donax Street, Dixie Beach Boulevard, Casa Ybel Road, Palm Ridge Road and Tarpon Bay Road.

Shared use paths are provided within the road rights-of-way for the City's arterial roads and for most of its collector roads. With few exceptions, these shared use paths are separated from the traveled way used by motorized vehicles.

The westerly continuation of Periwinkle Way is Sanibel-Captiva Road which is a two-lane arterial road. This continuous route provides the only access road to Captiva Island to the west across Blind Pass Bridge.

Gulf Drive is a collector roadway that consists of East, Middle and West Gulf Drives and generally follows the Gulf beach ridge along the southern edge of the City of Sanibel. Gulf Drive is

connected to Periwinkle Way and the Sanibel-Captiva Road by several north-south collectors, such as Lindgren Boulevard, Donax Street, Casa Ybel Road, Tarpon Bay Road and Rabbit Road.

The only motor vehicle access to the City from the mainland is the Sanibel Causeway (not within the City's jurisdiction) that is an extension of McGregor Boulevard /Summerlin Road. The three bridges of the Causeway were replaced and opened by Lee County in 2007. The Causeway is a two-lane facility with breakdown lanes in each direction that accommodates bicycles.

Alternative Transportation Modes

Bicycles are used extensively within the City primarily for recreation and, to a lesser extent, as a form of transportation to school, work, shopping and recreational sites. The City has an extensive system, more than 25 miles, of shared use paths.

Pedestrian traffic is generally accommodated by use of the shared use paths and/or unimproved roadway shoulders and streets. Private taxi service is available to, from and within the City of Sanibel.

Mopeds and motorized scooters are used on City streets and roads. Due to the fact that the vast majority of these scooters are rental units with drivers generally unfamiliar with their operation and with lower average speed than the autos, they add to traffic delays and can represent a safety hazard.

A privately owned and operated trolley system has operated at various times during the past several years, catering primarily to tourists and visitors. The future of a trolley system as a mode of public transit is the subject of continuing studies and public discussion.

The City Council adopted a position statement on December 6, 2005, addressing the proposal by Lee County to establish an Independent Transit Authority. That statement presents the criteria that the City of Sanibel will consider for its participation in a County or Regional Transit Authority. The position statement provides the basic guidelines for assessing the potential composition, structure, and funding mechanisms of a Transit Authority and the associated system operations and transit vehicle service and design characteristics for compatibility with Sanibel's environment, character and transportation system. The complete position statement is provided in the Mass Transit subsection of the Plan for Transportation that is presented later in this element of the Plan.

Hurricane Evacuation

Planning for an evacuation for hurricanes remains a major concern for the City. Designated hurricane evacuation routes include Periwinkle Way, Sanibel-Captiva Road, combinations of Tarpon Bay Road, Casa Ybel Road, Middle Gulf Drive and Lindgren and Causeway Boulevards and the Sanibel Causeway.

Australian pines along Periwinkle Way were destroyed by Hurricane Charley or removed during recovery efforts. Because of concern with Australian pines and other trees overturning and limb breakage in high winds, the revegetation of the right-of-way along Periwinkle Way will attempt to minimize this hazard while maintaining as much beauty as possible.

Traffic Volumes

Peak season, average weekday traffic volumes on Periwinkle Way typically exceed 20,000 vehicles per day, likely contributing

to the observed increase in traffic diverted to alternative routes.

Since 1990, over 3 million vehicles have crossed the Sanibel Causeway annually. The growth in total Causeway traffic has slowed from historic growth rates since 1990. Lee County has implemented its congestion value pricing structure for the Sanibel Causeway toll. The County has stated that the objective of the congestion value pricing program is to encourage travelers to enter and exit Sanibel Island during off-peak travel times. The City supports this objective; however, only if the program directly benefits the residents of the City of Sanibel.

Existing Level of Service

Roadway capacity is generally defined as the maximum number of vehicles that can reasonably travel through a roadway segment, based upon local conditions for various road categories. The principal parameters affecting capacity are: roadway functional classification, area type and number of lanes.

Level of service (LOS) is a measure of the operational conditions on a roadway and the perception of those conditions by motorists. Since the amount of traffic using the road affects operations, LOS is usually determined by comparing traffic volumes against capacity (volume to capacity ratio - V/C). The ranges for LOS span from "A" being free flow to "F" being forced flow (bumper-to-bumper). LOS ranging from "A" to "C" is generally considered acceptable delay and "D" to "F" as unacceptable delay. For roadway segments, a generalized LOS can be obtained using daily volumes; however, peak period/peak direction analysis provides a better estimate of a roadway operation.

Causeway Boulevard, Periwinkle Way from Causeway Boulevard to Tarpon Bay Road and portions of Casa Ybel Road operate at level of service “E” and “F” under peak season, peak hour existing conditions. The other arterial and collector roadways within Sanibel operate at level of service “D” or better under peak season, peak hour existing conditions.

Police Department personnel typically control the intersection of Periwinkle Way with Causeway Boulevard during the midday and afternoon peak hour time periods. Police also control the intersections of Periwinkle Way with Casa Ybel Road and Gulf Drive with Tarpon Bay Road during the afternoon peak hour time period. Therefore, the LOS at these intersections during the time periods when they are police controlled experience a higher, better level of service.

There is a diversion of traffic flow that presently exists along Gulf Drive/Casa Ybel Road to avoid the congestion of Periwinkle Way. The magnitude of this cannot be fully determined without an origin/destination survey along Gulf Drive/Casa Ybel Road. Significant increases along the diversion route indicate that traffic is seeking alternative routes to the congestion of Periwinkle Way. As traffic on the Island continues to grow, the traffic on the diversion routes can be expected to increase during the peak season.

Origin/Destination

In March 2002, an origin/destination roadside survey was conducted on the Sanibel Causeway. The purpose of that study was to determine and identify the travel characteristics of trips entering the City of Sanibel that will aid in the future identification and evaluation of trip reduction strategies.

On winter weekdays and weekends, the immediate destination for most motorists was Sanibel, approximately 82 percent to 83 percent with the higher percentage found during the weekday. However, considering those motorists who travel on to Captiva Island after first stopping in Sanibel, approximately 31 percent to 29 percent would be destined for Captiva Island.

The vast majority of the Sanibel destined trips were day trips that did not involve an overnight stay.

Sanibel Traffic Component		
	Weekday	Weekend
Resident & Overnight Visitor Trips	31%	36%
Day Visitor Trips	69%	64%
<i>Source: 2002 Origin Destination Survey</i>		

Volume Projections

Historic growth trends from the toll facility on the Sanibel Causeway and land use projections for the City of Sanibel and Captiva Island are used in projecting future traffic conditions. One of the principle criteria for the Transportation Element of the Plan is consistency with the Land Use Element. The City of Sanibel does not use traffic projections for purposes of deciding how much vehicle capacity is needed for the future. The City’s decisions with respect to transportation planning are not dictated by traffic projections.

With this in mind, the City of Sanibel has recognized that both the City’s residential and commercial components are already developed at well over 90 percent and the City is approaching

“build-out”. The City estimates that under the current trend of decreasing growth rates, the City will be completely developed prior to the horizon year of the *Sanibel Plan*. Drastic changes in residential and non-residential development trends are not expected, under a continuation of current policies, to alter this decreasing growth rate.

As the City approaches “build-out” conditions, it can be expected that historic growth rates as represented by the Causeway’s historic volumes will decline further based on capacity limits of local roads. Future traffic growth in Sanibel is, therefore, expected to be between the historic growth rates and the residential rate of growth. A composite traffic growth rate consistent with these factors was developed and applied to the available data.

Very little of the traffic volume through the Sanibel Causeway toll facility is associated with Sanibel residents. The 2002 origin-destination study showed that only 33 percent of the toll facility traffic volume was from Sanibel residents and overnight visitors. This figure is significant because it demonstrates that the number of building permits issued, within current density limitations, for new residences in the City of Sanibel will have minimal impact on toll facility traffic volume. However, off-Island visitors and service providers to new residents do add to toll facility traffic volumes.

For purposes of projecting future toll facility volumes, primary weight was given to historic toll facility growth rates during the winter season, particularly during recent years.

Traffic growth at the toll facility is primarily sensitive to external factors such as visitors that represent a significant component of the travel to, from and within Sanibel.

Level of Service/Future Conditions

Roadways already operating at LOS “F”, i.e., Periwinkle Way and Causeway Boulevard are projected to continue to operate in that fashion. Several additional roadway segments are projected to experience LOS “E” and LOS “F” operations in the future as a result of the overall area growth and growth in visitor traffic. These roadways are portions of Sanibel-Captiva Road, Tarpon Bay Road, Lindgren Boulevard, Casa Ybel Road and Gulf Drive.

The intersection of Periwinkle Way, Causeway Boulevard and Lindgren Boulevard is the confluence of vehicular traffic both entering and exiting the City. The City has been considering improvements to this intersection. In addition to daily benefits that may be achieved by improvements to this intersection, these improvements can improve traffic flow for much of the City. Alternative designs are focused on minimizing the delay for traffic exiting the Island, especially the high volume eastbound to northbound left turn movement. Improvements can help reduce the long queues in the afternoon periods during peak season for exiting traffic. Improvement to the intersection can also help reduce the amount of traffic diverting to other roads to avoid the queue delays.

The analysis of the benefit derived from improvements to that intersection needs to include the cost of the improvements. Additionally, a method of payment will have to be identified before it can be determined if the improvement is warranted. It is important to restore toll revenues and to replace revenues from the weigh station as a funding mechanism for this improvement.

Retaining the existing intersection, as currently constructed, is a viable option. Improvements to this intersection are not

required to attain the adopted level of service standard for the intersecting roads of this intersection.

Plan for Transportation

Past traffic studies show that vehicular traffic volumes in the City of Sanibel have grown from their 1988 peaks to further degrade traffic flow at many critical locations with extended periods of metered flow conditions during the peak season. Options to improve this condition fall into two basic categories: capacity enhancement and demand reduction. These issues are not new to Sanibel and many options were offered in the 1989 *Sanibel Plan* and previous studies. Yet, over the years, the only capacity enhancements have been the Gulf Drive connector, extended hours of police control at critical intersections and some minor intersection improvements. With the continued, albeit slowing, rate of growth in vehicular travel demand to Sanibel, the City needs to consider capacity enhancement and demand reduction options, singly or in combination, in an effort to maintain Sanibel's desired quality of life and community character.

Serious peak season traffic congestion problems and capacity constraints are apparent today under existing conditions. Those capacity constraints and congestion problems are concentrated in several locations and for several hours during the day.

Traffic congestion and capacity constraints are projected to intensify under the existing transportation network and in the absence of significant change. The increased traffic congestion and capacity constraints will tend to extend the hours of peak congestion and necessitate the City's Police Department to direct traffic at more intersections and for a longer period than under present conditions.

From years of dealing with and analyzing peak season traffic congestion, it has become clear that the provisions of additional road capacity through road widening or a bypass route is not in the best interests of the City.

Increased roadway capacity comes at the expense of the permanent residential community. There is ample, existing roadway capacity to permit LOS "C" or better on all of Sanibel's roads if only residential and overnight visitor-related traffic used the roads. Also, during the "off-peak" season, even when all visitor traffic is added there is roadway capacity to operate at LOS "D" or better.

Increased roadway capacity would make Sanibel a less attractive place to both live and visit because there would be decreased opportunities for person-to-person contact and less area for vegetation and wildlife habitat - all of which would make Sanibel a less attractive place for visitors and businesses as well.

Planning for Sanibel's future cannot afford to only react to the past.

Increases in roadway capacity usually come at the expense of walking and cycling space. Sanibel does not intend to hand over more and more of its living space to cars.

Because it is the City's policy to encourage use of alternatives to the private motor vehicle, including public or mass transportation, the City will take no actions to increase roadway capacities by adding lanes to the existing two-lane street and road system because increases in roadway capacities encourage more people to use their cars, making public transportation even less viable.

The City Charter requires approval by qualified City electors for proposals that would or could lead to new vehicular travel lanes, addition of street lights or addition of traffic signals on Causeway Boulevard, Periwinkle Way, Palm Ridge Road and Sanibel-Captiva Road.

In addition to not accommodating the demand for roadway capacity, the City will implement the concept of traffic calming. Traffic calming is a form of traffic planning that seeks to equalize the use of streets between automobiles, pedestrians, bicyclists, and playing children. This is accomplished through the use of devices and techniques that reduce traffic volume and speed in neighborhoods while maintaining maximum mobility and access. Traffic calming also attempts to make drivers aware of the fact that they are sharing the space of a street with other users.

The City will take steps in its street and road designs and traffic management techniques to make it apparent that streets and roads are not just for cars, but are to contribute to a pleasant residential life as well. It is important that the City of Sanibel be a walkable and bikeable community.

The City will attempt through design or redesign to create a sense of place on streets and roads, consistent with the Vision Statement's expression of the Sanibel community's sense of place. Recognizing the street as a place rather than as a channel designed for the benefit of the car and driver will change the psychological feel of the street for all users.

The City will take measures to discourage the use of predominately residential streets for through traffic. Special attention will be given to implementing measures to reduce vehicular speeds on Sanibel's streets and roads. Slower speeds will reduce the frequency and severity of accidents, and provide

increased opportunities for pedestrians and bicyclists to share the rights-of-way and driving surface with motor vehicles.

Ultimately the City will look for opportunities to reduce the amount of land area devoted to streets, roads and parking areas for private motor vehicles.

Therefore, consistent with the other elements of the *Sanibel Plan* and reflective of the Future Land Use Map, and in spite of projected increases in traffic volumes (associated primarily with increases in traffic crossing the Sanibel Causeway), there are no changes proposed for the Existing (2012) and Future (2022) Traffic Circulation Map. Only existing road facilities are depicted on the Existing (2012) and Future (2022) Traffic Circulation Map.

There are no port facilities, airports or rail lines existing or anticipated in the City of Sanibel. The long-term alternative to be selected, therefore, would be the pursuit of measures to reduce auto ridership. The *Sanibel Plan* and this Transportation Element are directed towards that end. The policies identified in the Transportation Element are directed toward reducing auto ridership (volume) rather than significantly increasing the roadway capacity component of the volume to capacity ratio. There are three general categories of policies, which work together.

- Creation of and identification of roadways that will not be widened due to environmental, scenic, historic and aesthetic characteristics and for which lower levels of service will be accepted
- Implementation of capacity enhancement/operational improvements at selective intersections

- Identification and implementation of measures to reduce auto ridership

Scenic, Historic, Environmentally Sensitive Roadways

The designation of “scenic, historic, environmentally sensitive roadway segments” on which reduced levels of service are accepted recognizes that Sanibel has a constrained transportation network resulting from the community’s desire to maintain and preserve the scenic and natural beauty of the City and protect environmentally sensitive areas by not widening roadways.

This lower level of service standard does not by itself solve existing or future traffic problems. However, it can be used in combination with other alternatives. Given the other policies of this Plan and the Transportation Element, it is the desire of the community that the acceptance of lower levels of service on roadways will be temporary in nature. However, it is the intent of the City to accept lower levels of service on those roadways as a tradeoff for protecting the scenic, historic and environmental character of the City.

During the next (initial -2017) planning period of the *Sanibel Plan*, the City intends to review options that can improve the peak hour, peak season, level of service for major roadways.

Capacity Enhancement/Operational Improvements

Recent capacity enhancement/operational improvements have been intersection improvements implemented at selective locations to facilitate operations and improve safety within the constraints of the existing transportation system and policies. The improvements optimize the use of existing facilities while

minimizing right-of-way acquisition and environmental, drainage and land use impacts.

Operational improvements can generally include: left and right turn lanes, improved roadway / intersection markings, intersection geometric configuration changes, improved directional signage and improved vehicular, pedestrian and bicycle interface and reduced conflicts. The identification, programming and construction of these type improvements reflect a continuation of City policies.

Based on existing plans and policies, it was determined that a continuous center turn lane along Periwinkle Way would not in the best interests of the City from a safety, environmental, scenic and aesthetic standpoint.

A major reconstruction of the Periwinkle Way/Bailey Road/Causeway Boulevard and Lindgren Boulevard intersection has been the subject of community concern and discussion for several years. That reconstruction requires special aesthetic, environmental and engineering study.

A method of payment will have to be identified before it can be determined if the improvement is warranted. It is important to restore toll revenues and to replace revenues from the weigh station as a funding mechanism for this improvement. Retaining the existing intersection, as currently constructed, is a viable option.

Improvements to this intersection are not required to attain the adopted level of service standard for the intersecting roads of this intersection.

Auto Ridership Reduction

It is clear that the existing transportation system's capacity to substantially improve service can only be accomplished by reducing the use of motor vehicles to and within the City. To preserve the City's scenic, historic, environmental and small town qualities, it has become a well-established City policy not to expand capacity, either by road widening or by building a bypass. The long-term alternative, therefore, is efforts to reduce auto ridership. The City has clearly indicated that the desired long-term approach to manage traffic is to reduce volume rather than increase capacity.

Measures to reduce auto ridership (i.e., reduce demand for road capacity) include but are not necessarily limited to the following. Some of the options can be individually implemented while others need to be implemented simultaneously.

1. Provide effective mass transit systems, consistent with the City Council's position statement on transit.
2. Expand shared use path system throughout City; increase safety of existing system. It is important that the City of Sanibel be a walkable and bikeable community.
3. Expand pedestrian network.
4. Reduce tourist rental car needs.
5. Implement transit system to/from Sanibel, consistent with the City Council's position statement on transit.

6. Provide off-Island day visitor intercept parking facilities in combination with transit solutions.
7. Restrict auto access and auto travel within City: both daily/weekly restrictions and hourly restrictions.
8. Reserve rights-of-way and implement personal non-auto vehicular system.
9. Stagger on-Island employment work hours.
10. Restrict beach access parking.
11. Advanced information signage.
12. Radio broadcast of traffic conditions.

Mass Transportation

Sanibel does not lend itself very well to typical mass transit operations. Although it is the City's expressed policy to encourage alternatives to use of the private auto, mass transit poses special challenges.

Mass transit works most effectively when there are large numbers of people traveling on a regular schedule along fixed routes. The vast majority of existing auto traffic on Sanibel's roads is made up of visitors. The 2002 origin / destination study showed that approximately one-third of the vehicles coming through the toll facility were "just looking around", with no specific destination.

Another factor compounding the challenge of operating an effective mass transit system is the fact that nearly all persons arrive in Sanibel with a private auto at their disposal.

Because of the resort nature of Sanibel, the City can expect to be besieged with requests to operate trolley or tram tourist attractions masquerading as mass transit. These offers need to be carefully evaluated on a case-by-case basis. Generally, these attractions are more likely to add vehicle trips to Sanibel's roads, than to reduce private auto use.

Opportunities for mass transit to reduce traffic volumes by reducing use of private motor vehicles in a measurable way are not readily available or apparent without further restrictions on private auto access and use.

The City will continue to seek ways in which public and mass transit can be made available to both reduce traffic congestion and to provide an alternative to use of the private motor vehicle.

The City will work with Lee Tran to provide scheduled service to and from Sanibel to connect to Lee Tran's mainland routes, consistent with the City Council's position statement on transit. Also, the City will encourage Lee Tran to provide regularly scheduled route service on Sanibel and Captiva Islands, consistent with the City Council's position statement on transit.

Position Statement on Transit

The City Council adopted a position statement, on December 6, 2005, addressing the proposal by Lee County to establish an Independent Transit Authority. The following statements represent the criteria that the City of Sanibel will consider for its participation in a County or Regional Transit Authority.

These criteria provides the basic guidelines for assessing the potential composition, structure and funding mechanisms of a Transit Authority and the associated system operations and transit vehicle service and design characteristics for compatibility with Sanibel's environment, character and transportation system.

- The City of Sanibel is supportive of a Transit Authority that:
 - Establishes goals and objectives that are consistent with the *Sanibel Plan*, particularly the Transportation Element
 - Contains governing board representation that is proportionate to funding contributions by local participants
 - Develops a capital improvement program to implement a multi-year capital and service transit improvement plan
 - Features a transit improvement plan - with service vehicles equipped to carry bicycles
 - Facilitates coordination between Federal, State, Regional and other Local transportation planning organizations where needs interface
 - Identifies and jointly plans improvements and strategies within shared corridors
- The City of Sanibel will participate in a transit system that:

- Protects and maintains the carrying capacity of the beaches and the Island's natural resources for use by wildlife
- Uses City of Sanibel approved circulation routes and transit stops located within the City's boundaries
- Includes possible modal transfer sites for water transit opportunities for pedestrians, bicyclist and vehicles
- Includes transfer sites for transit corridor connections at Punta Rassa and Captiva Island with on-Island circulation routes
- Reduces roadway traffic congestion
- Meets existing demands
- Uses the City's existing transportation infrastructure
- Allows users to monitor location of transit vehicles and transit schedules in real time
- Provides services derived proportionately to local funding sources
- Transit vehicles that operate within the City of Sanibel should be those that:
 - Are designed to maintain and protect the character of the community with respect to signage, transit stops and vehicle types
 - Operate in an environmental friendly manner

- Are equipped to carry bicycles
- Are capable of providing an alternative form of transportation for emergency evacuation or deployment of goods and services

The City may develop a position statement addressing the use of private busses.

Summary

There are numerous economic, legal and practical issues associated with each of the alternatives to reduce auto ridership. No attempt has been made in this plan to identify, quantify and resolve every issue. Implementation of many of the alternatives is not within the control of the City, requires philosophical changes and has possible impacts on neighboring areas adjacent to the City of Sanibel.

This Transportation Element does reconfirm that the objective of the City is to address its traffic problems through traffic calming techniques and measures to: first, implement intersection capacity enhancement improvements so as to more effectively manage the projected traffic volume increases within the City, and second, to reduce auto ridership rather than to pursue measures to expand roadway capacity. The Transportation Element identifies the priorities and direction to be taken to thoroughly explore the issues associated with efforts to reduce auto ridership. A direction is established so that alternatives selected for implementation will be thoroughly evaluated to ensure the highest degree of success.

Goals, Objectives and Policies

Goal Statement

Provide a safe, convenient and efficient motorized and non-motorized transportation system for all residents and visitors to the City of Sanibel while preserving the natural beauty and unique atmosphere of the Island.

Objective 1

The location and design of Sanibel streets and roads, as well as the traffic control techniques used, should take into consideration the non-urban, tropical, barrier island environment of the community to ensure, within the limits of safety, that this character is maintained.

Policy 1.1. Conventional traffic control techniques such as traffic signals are not desired on the island and the City of Sanibel has determined that they should not be implemented even if signal warrants as defined in the Manual on Uniform Traffic Control Devices are met. Manual traffic control is the desired technique.

Policy 1.2. The City will implement street and roadway design techniques that are intended to produce traffic calming, appropriate for the City's classification of the street or roadway segment.

Policy 1.3. To facilitate the manual control of intersections and to provide a measure of protection for the City's police officers, ensure that each intersection has clear and legible intersection marking with safety lighting for the officer, as necessary.

Policy 1.4. The City will continue to implement current standards, as identified in the Land Development Code, for safe and efficient ingress and egress to adjoining properties, as well as encouraging safe and convenient on-site traffic circulation.

Objective 2

A balanced transportation system is desired which is compatible with other elements of the *Sanibel Plan*. It should provide, to the extent possible, transportation alternatives to the automobile, compatible with the City's character, that create the higher level of service through reduced traffic demand rather than increased roadway capacity.

Policy 2.1. Due to scenic, historic, environmental and aesthetic characteristics and consideration, the City of Sanibel has determined that roadways and roadway segments will not be widened. Therefore, reduced peak hour and daily (peak season and off-season) levels of service will be accepted on those constrained roadways and roadway segments as a tradeoff for the preservation of the scenic, historic, environmental and aesthetic character of the City.

Standard for Roadways

Given the other policies of the Plan,

it is the intent of the City that
Level of Service "F"

is the accepted standards for roadways

Policy 2.2. The capacity, safety and operations of the intersections of arterial roadways with arterials, arterials with collectors, and collector roadways with collector roadways should be improved through a continuing program of intersection capacity enhancement / operational improvements. In the Capital Improvement Program, the City will prioritize the improvements identified in the Transportation Element, conduct detailed engineering surveys of the priority locations, prepare drawings and program the improvements for construction, if warranted, in the Capital Improvement Program.

Policy 2.3. The City should study alternatives to improve the efficiency, safety and appearance of the Periwinkle Way/Causeway and Lindgren Boulevards intersection. The selected improvement, if warranted, should be programmed for construction in future capital improvement programs.

Policy 2.4. All new developments will be reviewed for consistency with the policies of this *Sanibel Plan* and to ensure that such development provides adequate access to the local, collector and arterial roadway network. New developments will be assessed a share of the costs to provide roadway improvements to serve the development.

New developments can satisfy transportation concurrency requirements, pursuant to the requirements and criteria of *Section 163.3180(5)(h), Florida Statutes*.

Policy 2.5. Encourage private enterprise to continue to provide and expand, during the peak season, daily

service to the Southwest Florida International Airport. Work with area hotels, commercial establishments and resorts to undertake an advertising campaign to encourage tourists to the City to use other modes of travel once in the City.

Policy 2.6. Work with Lee County to phase in, over time, appropriate adjustments to the current causeway toll structure.

Policy 2.7. Continue to expand the City's shared use path system wherever it can be accomplished in a fiscally sound manner and whenever it can be accomplished in a manner compatible with surrounding land uses. It is important that the City of Sanibel be a walkable and bikeable community.

Policy 2.8. Improved protection for the bicyclists should be provided throughout the City, and in particular, along Periwinkle Way.

- Provide shared use path markings at intersections of the shared use path with arterials and collectors
- For those segments of the shared use path that cannot be physically separated from the auto traveling lane, consider painting those shared use paths to clearly delineate the auto versus bike areas and/or improve shared use path markings to clearly delineate the separation
- Where possible, provide a physically separated shared use path along or parallel

to Periwinkle Way from Causeway Boulevard
to Tarpon Bay Road

Policy 2.9. Develop pedestrian pathways to serve activity areas and internal traffic in residential and commercial areas, interconnect residential and commercial areas where appropriate, so as to encourage through pedestrian and bicycle traffic and serve the recreational facilities on Sanibel. When financially and physically feasible, these pathways should be similar to, but separated from, those proposed for bikes.

Policy 2.10. Support and encourage Lee County in its continuing effort to locate and develop expanded public beach opportunities within Lee County to relieve some of the strain on Sanibel beaches.

Policy 2.11. Limit the number, size and location of private attractions that, by their nature, contribute to an overuse of limited capacity roadways. Within the context of this policy, an attraction is a land use that generates a significant number of its daily and overall automobile trips from off-Island locations.

Policy 2.12. Discourage further special events that are anticipated to increase traffic volumes on Sanibel during the peak season. Restrict the issuance of special event permits to only those events that are clearly in the best interest of the entire City.

Policy 2.13. Enforce the prohibition on the use of sidewalks and shared use paths by mopeds and motorized scooters.

Policy 2.14. As the Summerlin Road corridor continues to develop, cooperate with and encourage Lee Tran to provide “park and ride” service and expanded public transit service to this area of the County and in the vicinity of the Sanibel Causeway, consistent with the City Council’s position statement on transit. Coordinate that “park and ride” service with the other policies of this Plan to reduce auto ridership implemented by the City including an off-Island trolley / transit system to and from those facilities and Sanibel.

Policy 2.15. Evaluate the feasibility of providing park and ride facilities close to Sanibel. If determined to be feasible, encourage Lee County to provide such facilities, consistent with the City Council’s position statement on transit.

Policy 2.16. Maintain services, such as those provided by the vital volunteer organization, Friends In Service Here, to provide assistance to the transportation disadvantaged. Work with public agencies and private providers to ensure that this need is adequately addressed.

Policy 2.17. Continue to explore the economic, legal and practical feasibility of measures to reduce auto ridership, including, but not limited to:

- Expanded off-Island intercept parking
- Expanded off-Island and on-Island trolley system, consistent with the City Council’s position statement on transit
- Restricted auto access and auto travel within Sanibel

- Restricted Sanibel access to a maximum vehicular hourly “cap”

Review the status of the previously identified objectives and policies and the progress to date on the above measures. After thorough issue resolution and public input, implement appropriate solutions.

Objective 3

The parking strategies of the *Sanibel Plan* are to ensure the provision of adequate on-site and off-site parking for existing and future land uses, in a manner that promotes transportation goals and objectives of the *Sanibel Plan*.

Policy 3.1. Continue to provide adequate on-site or off-site parking for the support of existing and future land uses.

Policy 3.2. Continue to provide adequate on-site or off-site parking for special events.

Policy 3.3. Continue to provide parking spaces for people with disabilities and provide, in accordance with building code requirements, at a minimum, barrier-free access for the disabled and elderly.

Policy 3.4. The amount of parking, public and private, will not overwhelm the resources of individual sites and land uses and will not overwhelm the human-made and natural resources of the City.

Policy 3.5. Parking areas, public and private, will be designed and constructed in a manner that is compatible with the character of the community.

Objective 4

Ensure continued protection of existing and future rights-of-way from building encroachment by continuing to implement the setback requirements of the Land Development Code.

Policy 4.1. Through the Land Development Code, reserve 100 feet of right-of-way along Periwinkle Way and Sanibel-Captiva Road for such future use, exclusive of major roadway widening, that the City may determine to be in the public interest and compatible with the historic, scenic, environmental and aesthetic characteristics and restrictions of the City.

Objective 5

The City will coordinate the Transportation Element with the plans and programs of the State, Region, County and other local jurisdictions.

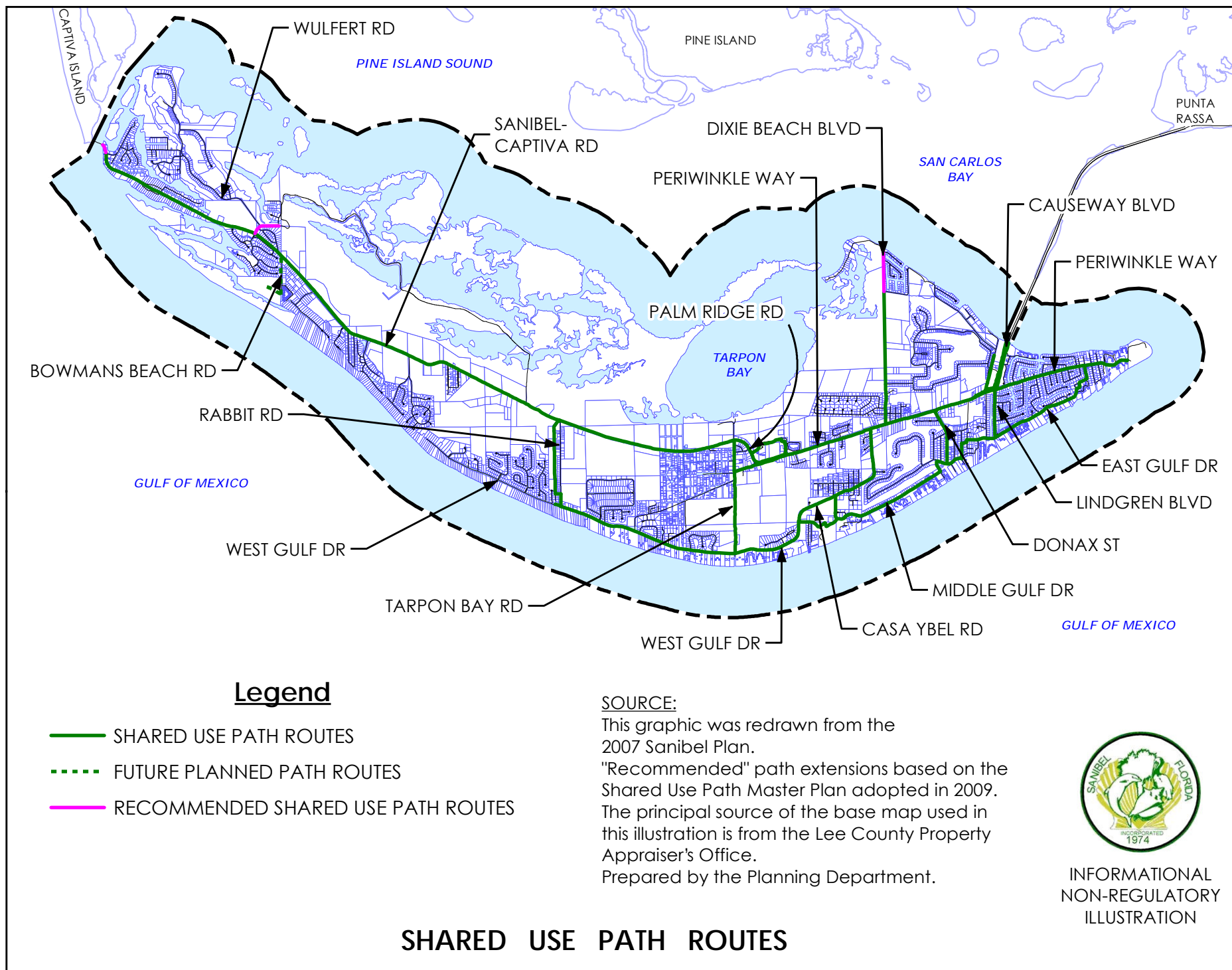
Policy 5.1. The Transportation Element will incorporate, to the greatest degree possible, the long-range plans of the Lee County Metropolitan Planning Organization.

Policy 5.2. The Transportation Element will consider any and all applicable roadway plans of the Florida Department of Transportation and Lee County.

Policy 5.3. The Transportation Element will consider the Florida Department of Transportation adopted Five-Year Work Program, the Florida Transportation Plan, the State Land Development Plan and the Southwest Florida Regional Planning Council’s Regional Policy Plan.

Policy 5.4. Encourage Lee County to operate and maintain their bridge and causeway facility, which runs between the mainland and Sanibel, to satisfy Sanibel's long-term need for an evacuation route to the mainland and a recovery route from the mainland. It is important to keep the bottom of the road bed for the bridges of the Sanibel Causeway elevated above the level of the anticipated storm surge of a Category 3 hurricane and to keep the bridges of sufficient width to permit motor vehicle traffic to bypass disabled vehicles.

Through continued intergovernmental coordination, the City will work with the County to promote the long-term maintenance of this vital transportation facility. The City will review the County's bridge inspection and maintenance reports. The City will also examine any inspection reports responding to natural or human-caused events that may affect the structural integrity of the facility, in order to identify appropriate actions.



Section 3.3.4. Wastewater Treatment Element

Pursuant to Section 163.3177(3), Florida Statutes.

Background Discussion

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(6)(c), Florida Statutes* is summarized in this subsection.

The collection, treatment and disposal of generated sewage in Sanibel are handled by the City. The owners of the few remaining individual septic tank systems continue to treat and dispose of a small percentage of the sewage in the City.

The City government supplements the efforts of other public agencies to protect the health, safety and welfare of its citizens from the impacts of wastewater disposal.

Municipal Sewer Service: the Sanibel Sewer System

The City of Sanibel is served by two major wastewater treatment plants that are owned by the City: the Donax Water Reclamation Facility (WRF) and the Wulfert Water Reclamation Facility. The Donax WRF has a capacity of 2.375 million gallons per day. The Wulfert WRF currently has a capacity of an additional 125,000 gallons per day. The Donax WRF and the Wulfert WRF are physically connected and capable of working together to treat wastewater. The combined capacity of these two plants is designed to serve the City at “build-out”, or for 10,000 equivalent residential connections.

Golf courses are currently used for effluent disposal and a system to reuse treated effluent for other irrigation purposes is

in place. The Island Water Association’s injection well is available for wet weather disposal of treated effluent.

Package Treatment Plants

There are no package treatment plants remaining in the City.

Septic Tank Systems

Septic tank systems continue to provide on-site waste-water treatment for a small percentage of residential and small-scale commercial development.

With the planned expansion of the service areas for the Sanibel Sewer System, in accordance with the Master Plan for Wastewater Treatment, approximately 100 developed land uses in the City still use septic systems. Approximately 50 will be unserved by the Sanibel Sewer System with the completion of the Phase 4 expansion.

Level of Service

The level of service standard for wastewater treatment service is based on an equivalent residential connection (ERC) flow rate of 240 gallons per day of average sewage generation. This ERC flow rate is based on historical peak flow data for the Sanibel Sewer System and incorporates residential, commercial, and infiltration/inflow factors, as well as seasonal fluctuations in the functional population. The average per capita daily flow (2.2 persons per ERC) is 109 gallons per person.

Master Plan for Wastewater Treatment

In 2000, the City updated the adopted 1994 Islandwide Master Plan for Wastewater Treatment. The implementation of the Master Plan is in its final phases.

Impact on the Quality of Surface and Ground Waters

The significant effort and investment the City has put into wastewater treatment facilities, including a collection system for virtually all land uses within the City, was made to improve the quality of surface and ground waters in and around Sanibel. As the City eliminates the nonpoint source of pollution associated with active septic systems, it is also exploring the possibility of regulating the use of pesticides and fertilizers to address another nonpoint source of pollution. Unfortunately, efforts and investments to improve water quality have not been as extensive in other areas within the watershed of the Caloosahatchee River. Continued surface water runoff within the watershed of the Caloosahatchee River containing non-point source pollution contributes to the further degradation of the quality of the waters surrounding the City. This degradation of waters surrounding the City is exacerbated by the water releases from Lake Okeechobee.

Plan for Wastewater Treatment

1. Continue to regulate all sewage collection, treatment and disposal systems to ensure that the fragile environment of the Island remains protected.
2. Implement the updated Island-wide Master Plan for Wastewater Treatment.

- If financially feasible, continue to bring unserviced developed properties onto the Sanibel Sewer System
 - Prohibit, to the extent possible, the construction of new package treatment plants
3. Continue to monitor the availability of reuse water for potential expansion of the reclaimed water distribution system. If opportunities arise in the future, consideration of the reuse of treated effluent for irrigation of residential homes and green areas should be used.
 4. Sludge disposal through contract haulers to approved sludge disposal sites is recommended as the only alternative available.
 5. A level of service standard for wastewater treatment, based on historic operating data, of 240 gallons per day per equivalent residential connection is recommended.

Goals, Objectives and Policies

Goal Statement A

Ensure that water reclamation facilities or septic systems provide a high degree of wastewater treatment in order to protect the environment and the health of the community for the residents and land uses of the City of Sanibel.

Objective A1

The City will use procedures ensuring that prior to issuance of a development permit, an adequate level of service for wastewater treatment capacity is available or will be available or that an approved septic system can be installed at the time of development through implementation of the City's Land Development Code section requiring wastewater disposal permits.

Policy A1.1. Provide adequate wastewater treatment facilities in compliance with State regulations and the requirement of the Land Development Code. At a minimum, wastewater treatment facilities will be provided in accordance with the following level of service standards.

Standard for Wastewater Treatment Facilities		
Type	Use	Gallons Per Day Per Unit
Sanibel Sewer System	All	240

Policy A1.2. Improvements of the wastewater facilities for replacement, expansion or increase in capacity will be consistent with the adopted level of service.

Objective A2

Provide an efficient, cost-effective and environmentally safe wastewater collection, treatment and effluent disposal system for residents and commercial land uses, consistent with the Master Plan for Wastewater Treatment.

Policy A2.1. The City will implement the Land Development Code section requiring wastewater disposal permits and will keep Federal, State and County regulatory agencies informed of City regulations so that these other agencies will regulate wastewater disposal in such a manner as to ensure that the provision of wastewater services is consistent with the City's Land Development Code, Future Land Use Element and the City's Master Plan for Wastewater Treatment Facilities.

Objective A3

The City will ensure that septic tank systems and other individual treatment facilities on the Island are designed and maintained to afford a high degree of protection to the environment and the health of the Island's residents.

Policy A3.1. By requiring a City wastewater disposal permit, the City will ensure that proper design and construction methods are used when the use of septic tanks and/or other individual treatment facilities becomes necessary prior to the issuance of development permits.

Policy A3.2. The City will require a wastewater disposal permit for all construction and/or repair of existing septic systems so that the work is done in a manner that will ensure effective wastewater treatment.

Policy A3.3. Minor additions to existing dwelling units that do not increase the potential for an increase in wastewater generation will not necessitate the upgrading of existing septic systems.

Policy A3.4. Land Development Code regulations will continue to minimize the cost to existing owners who are required to make repairs to their existing septic or individual treatment systems, when the repairs needed to make the existing systems functional are minimal and service from the Sanibel Sewer System is scheduled to be available in a short period of time.

Policy A3.5. The City, through an educational program, will disseminate information on the proper maintenance of septic systems to ensure effective wastewater treatment.

Policy A3.6. Consider establishing a program to monitor septic systems located in marginal or environmentally inappropriate areas to ensure effective wastewater treatment.

Objective A4

The City will monitor the effectiveness of all wastewater treatment and the impact that the wastewater disposal has on the environment and the health of its residents.

Policy A4.1. Existing wastewater facility deficiencies will be brought into conformance with current standards at the time the facility malfunctions, as defined in the Land Development Code.

Policy A4.2. The City will continue to work in conjunction with regulatory agencies to monitor the health and environmental risks associated with wastewater pollution sources.

Policy A4.3. The City will establish an ongoing monitoring program to determine the effects of treated sewage disposal on the groundwater table.

Goal Statement B

On an Island-wide basis, provide for the coordination and integration of wastewater treatment through a comprehensive wastewater master planning effort.

Objective B1

The City will implement the Master Plan for Wastewater Treatment that provides a timetable for development of and coordination of wastewater facilities.

Policy B1.1. The City will continue to use a Citywide approach to growth management, by implementation of the Master Plan for Wastewater Treatment.

Policy B1.2. The City will implement the Master Plan for Wastewater Treatment to ensure that needed wastewater system improvements are conducted in a cost-effective and timely manner.

Policy B1.3. The City will require connection to the Sanibel Sewer System when this service is available.

Policy B1.4. For the purpose of providing the proper services to all of its citizens, in conjunction with orderly growth, the City will continue to implement regulations and programs to encourage the expansion of the City's central sewer system to serve developments in environmentally sensitive areas and areas of high density and concentrated wastewater flows in order to obtain better control over existing and future development throughout the City.

Policy B1.5. The City will continue to investigate additional means of effluent disposal, particularly those that reuse the nutrient laden reclaimed water for irrigation.

Policy B1.6. The City will continue to monitor nutrient levels and look for cost-effective ways to reduce these nutrients.

Policy B1.7. The City will continue to promote the conservation of water in an effort to reduce the production of wastewater by the community.

Policy B1.8. The City will continue to reduce infiltration / inflow into the collection system for the Sanibel Sewer System.

Policy B1.9. The City will continue to conduct ongoing rehabilitation of the sewerage treatment infrastructure.

Section 3.3.5.

Solid Waste and Recycling Element

Pursuant to Section 163.3177(3), Florida Statutes.

Background Discussion

The purpose of this element is to provide for adequate disposal of solid waste in support of existing land uses and future land use projections.

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(6)(c), Florida Statutes* is provided in this subsection.

There are no solid waste facilities located on Sanibel. Florida Statutes preclude the establishment of a landfill within Sanibel City limits, thereby imposing a dependency for sites in other parts of the County. The City of Sanibel contracts with a private solid waste hauler for the provision of trash collection service. The solid waste facilities for this disposal system are located outside the City in Lee County. The City contracts with a private sector waste hauler to collect and take solid waste off the Island. Current law permits the City to seek service for solid waste facilities outside of Lee County; however, the City's current agreement with Lee County requires that solid waste to be taken to the Lee County facility. Lee County provides a landfill area off the Island and operates a resource recovery facility.

Residential customers' billing is included on their property tax bill, while the City's contract hauler charges commercial customers on a per-yard basis for commercial and condominium customers with dumpsters. Pickups are made weekly for residential uses and as often as six times a week for commercial

uses. Residential uses receive separate weekly curbside pickup for recyclable materials and vegetation debris. These services are also available to commercial uses as an option at an additional charge.

The City promotes recycling and provides a recycling drop-off center. The City's land development regulations have been revised to accommodate recycling facilities at existing and new developments.

Lee County provides household hazardous waste collection facility off-island.

The analysis of solid waste facility needs, including design capacity, current and projected demand, general performance and facility life expectancy, are contained in the comprehensive plan for Lee County. An analysis of the problem and opportunities for solid waste facilities replacement, expansion and new facility siting is also contained in the Lee Plan. Lee County will maintain control of administrative functions and franchises under a contractual arrangement for solid waste disposal.

The average level of service for solid waste disposal has been 0.82 tons of garbage per home per year and 0.82 tons of vegetation waste per year.

Plan for Solid Waste Disposal

As long as solid wastes can be disposed of by the present arrangements, no major problem exists and no alternatives need be considered except for those affecting Lee County's operation and maintenance of solid waste facilities. The franchised disposal service is prepared to increase collection equipment to meet the growing population on Sanibel up to the approximately

9,000 living units anticipated in the Plan. Direct costs for providing services for solid waste disposal will continue to be absorbed by the private sector through user service charges.

In providing services for the disposal of solid waste, the City of Sanibel will cooperate with Lee County for the continued provision of adequate solid waste disposal services.

Provisions of the Plan

1. The City should continue to entertain bids for franchise service for solid waste collection and disposal to ensure that this service is being provided in a cost-efficient manner.
2. The City should continue to employ its user pays system of solid waste disposal.
3. The City should strive to achieve State goals for recycling by enhancing and expanding its recycling services.
4. The City should monitor legislative issues related to solid waste disposal.
5. The City should monitor the cost of its interlocal agreement with Lee County to ensure that services for solid waste disposal are being provided in a cost efficient manner.

Goals, Objectives and Policies

Goal Statement

Provide for the appropriate recycling and adequate disposal of solid waste for the residents and land uses in the City of Sanibel, in cooperation with Lee County's provision of adequate solid waste disposal facilities.

Objective 1

Ensure cooperation with Lee County for the provision of an adequate level of service for solid waste disposal facilities.

Policy 1.1. Cooperate with Lee County in its provision of adequate solid waste disposal facilities, its program for determining the cost of solid waste disposal and in implementing a recycling program.

Policy 1.2. At a minimum, solid waste disposal facilities will be provided in accordance with Lee County's level of service standards for solid waste disposal facilities.

Standard for Solid Waste Disposal

Seven (7) pounds per person per day

This standard does not include vegetation debris disposal, which is another 30 pounds per dwelling per week

Objective 2

Continue implementation of a program for the proper storage, collection and disposal of hazardous wastes.

Policy 2.1. Encourage Lee County to continue providing an off-island household hazardous waste collection facility.

Section 3.3.6.

Storm Drainage Element

Pursuant to Section 163.3177(3), Florida Statutes.

Background Discussion

The purpose of this element is to provide for the management of stormwater drainage to control flooding of developed areas and to enhance the wetlands and natural drainage features of Sanibel.

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(6)(c) Florida Statutes* are provided in this subsection and in the Surface Water Management Plan, adopted in August 1989.

All of the City of Sanibel is located in the coastal floodplain. No other regulatory floodplains, such as for rainfall flooding, have been established within the City.

Stormwater runoff characteristics are a direct function of the amount of precipitation, condition and density of vegetation or other groundcover, and the structure and texture of the soil or other surface material and its saturation level. Topography also affects stormwater flow, percolation and overflow rates. Water infiltrates each soil type at a specific rate, characteristically rapid at first, then leveling off until it is no longer absorbed. If precipitation continues, depressions fill, water accumulates and overland flow occurs.

The infiltration rate on Sanibel's shell and sand substrate is exceedingly high and, as a result, overland flow is almost negligible under natural conditions. Rainwater quickly

replenishes the groundwater table and overland flow of water from one area to another would be virtually negligible. This condition, however, is not maintained in development areas unless stormwater is managed by having adequate areas of permeable soil and vegetation.

The City is one of 13 co-permittees that are included with Lee County's National Pollution Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit. The NPDES stormwater program regulates non-point source discharges of stormwater into surface waters of the State from certain municipal, industrial and construction activities.

As the NPDES stormwater permitting authority, the Florida Department of Environmental Protection is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, auditing annual reports submitted by permittees and performing compliance and enforcement activities.

A second phase of NPDES requires permits for construction activities that disturb one or more acres of land. For smaller projects, a program has been developed by the City to implement measures of the NPDES program for stormwater, erosion and sediment control. This program attempts to eliminate particulates in construction site runoff caused by dewatering activities and rainfall.

New development and redevelopment activities that are not exempt from permitting requirements of the South Florida Water Management District are required to provide stormwater drainage systems in compliance with the requirements of the District. Stormwater drainage systems that are required by the District are for a 25-year storm event of three-day duration. However, in accordance with the Future Land Use Element of

this Plan, over 90 percent of the development permitted in the City of Sanibel has already occurred. Therefore, the stormwater management requirements, established in the original *Sanibel Plan*, are retained for infill development.

Stormwater drainage systems for infill development are required to design for the five-year storm event of one-hour duration.

Past environmental damage caused by inadequate human-devised storm drainage systems on Sanibel represented a real threat to several valuable ecological functions, including maintenance and recharge of the freshwater lens, maintenance of water quality and maintenance of natural vegetation and wildlife habitats. To preserve and restore these valuable ecological functions, the City of Sanibel requires that stormwater drainage systems reflect the natural drainage system in a manner that preserves natural processes and causes the least environmental disruption.

The method of dealing with stormwater drainage so as to minimize harmful impact of development on the environment is to preserve and use the inherent capabilities of the site to absorb water effectively with minor modifications to land configuration. By careful site planning and maximizing the areas that retain and absorb stormwater, costly piping, channels and culverts can be reduced. A natural drainage system that is sympathetic to natural processes causes the least environmental disruption and can be less costly to build and maintain. Most importantly, the problems and solutions are localized to the project site and not imposed on adjacent land.

In order to retain Sanibel's native vegetation and wildlife habitats, the existing groundwater system must not be disrupted. It is, therefore, a policy of the City in this Plan that, at a minimum, the stormwater produced by five-year storm

conditions will be collected, retained, and recharged on the site of any development.

The Natural Storm Drainage system can achieve the following:

- Maximize recharge of the shallow groundwater aquifer
- Minimize runoff
- Minimize erosion and siltation
- Minimize vegetation removal
- Minimize maintenance and drainage system costs
- Improve water quality
- Enhance flow in Sanibel River

An invaluable resource to the Island-wide natural drainage system is the interior wetlands. This 3,500-acre depression in the central area of the Island, roughly bordered by Periwinkle Way and Sanibel-Captiva Road on the north and Gulf Drive on the south, plays an important role in terms of stormwater storage during both high frequency as well as more intense storms. The main drainage way of the interior wetland is the Sanibel River.

Historically, the Sanibel River was a semi-continuous slough system that originated in the vicinity of the present Tradewinds subdivision and completed its course near the present Colonnades Condominiums and Colony Beach Estates.

During extreme high water conditions, the River would break over the beach and empty into the Gulf of Mexico at several locations along its path. In 1960, the River was channelized for mosquito control purposes. The primary objective was to

concentrate the surface water in one channel and to maintain as constant a water level as possible. Water level control structures at Tarpon Bay and Beach Road were constructed at this time and continue to be the only River outlets to saltwater under normal conditions.

County roads through the interior wetlands crossed the river over bridges early in the Island's development. However, these bridges were eventually replaced by culverts and fill. In many cases the culverts were woefully undersized and the inverts of the culverts were placed at elevations higher than the normal level of the water in the river. Most of these bottlenecks have since been corrected by the City or in association with private development.

More importantly in terms of storm drainage and the health, safety and welfare of the Island's residents, constrictions in the interior drainage system may cause flooding. During periods of heavy rainfall, moderate to severe flooding once occurred in some areas. At times, substantial portions of major roads were covered often to a depth of six to eight inches for extended periods of time. This was partly due to incorrectly sized and improperly placed culverts. The combination of improving intra-basin flow in the interior wetlands as well as raising the roads gives greater flood protection to emergency evacuation routes in the event of a hurricane. Constricting culverts can also reduce the velocity of the flow in the River and effectively prevent adequate flushing of saltwater from the interior of the Island because of the density relationship between freshwater and saltwater. Typically this results in the discharge from the Island of the overlying freshwater and the retention of the lower strata of saltwater, thus greatly reducing water quality in the interior wetlands. The *Sanibel Surface Water Management Plan* has addressed these concerns.

Surface Water Management Plan

Implementation of the Surface Water Management Plan (SWMP) has been achieved; however, there is preliminary consideration for elevating the seasonal water table in the conservation lands between the Sanibel Highlands subdivision and Tarpon Bay Road.

A long-apparent need for an Island-wide surface water management plan was primarily addressed by the Surface Water Management Plan's dual goals of flood protection and environmental enhancement.

The Goal and Objectives of the Surface Water Management Plan

Goal

To safeguard human health and welfare and to maintain and improve the wetland system of the Sanibel River and its tributaries in order to enhance and promote water quality as well as vegetative and wildlife habitat diversity.

Objectives

1. To reduce extreme flooding in developed areas and the length of time of flooding in order to keep roads, driveways, house pads and septic systems drained to the greatest extent possible.
2. To use surface water management as one of many tools in undeveloped areas in order to encourage and support the return to savannah and marsh vegetation as well as other native habitat types, including but not limited to ridge hammocks, buttonwood sloughs

and transition zones, and to discourage the continued invasion of exotic plants.

- To identify undeveloped areas for habitat preservation and restoration that are large enough to support representative plant and animal populations, economically and physically feasible to manage and compatible with the water management needs of developed areas
 - To increase rainfall detention in undeveloped areas to encourage the recharging of the water table aquifer and to return to conditions of environmental extremes in surface water and water table elevations natural characteristics in the past
3. To use natural drainage methods wherever possible with minimum change to the environment, using minimal amounts of human-made structures and arriving at a system requiring minimal maintenance.

The plan was designed in accordance with South Florida Water Management District criteria, which is a 25-year, three-day storm event, which drops approximately 8.5 inches of rainfall.

In order to implement the revised SWMP, City Council authorized improvements along the Sanibel River. Included in those improvements were the replacement of the old Tarpon Bay and Beach Road Weirs. The old weirs did not have outfall crests high enough to achieve the environmental restoration objectives of the Plan, nor did they have the drainage capacity to satisfy the flood control objectives of the Plan. The new weirs, which are both in place, have considerably longer weir crests set at the optimum water elevation levels of 3.2 feet NGVD (2.0 feet NAVD) at Tarpon Bay and at 2.7 feet NGVD (1.5

feet NAVD) at Beach Road to hold surface water at those desired levels. The new weirs also have greatly increased drainage (sluice) gates that will allow the rapid release of stormwater when the optimum water levels are exceeded.

The final phase of the SWMP was the restoration of the Sanibel River itself. This project called for the removal of vegetative and subsurface constrictions in the river, and the creation of a number of wildlife habitat restoration areas along the River's path. The Sanibel Gardens Restoration project restored a large segment of the historical course of the Sanibel River.

The *SWMP* is administered and managed by a City Council-approved Weir Control Policy. The current policy was adopted by City Council through Resolution No. 94-75 on April 19, 1994, and approved by both the Florida Department of Environmental Protection and South Florida Water Management District.

The principal drainageway of the City of Sanibel is the Sanibel River. The eastern reach of the Sanibel River system discharges stormwater runoff at the Beach Road weir into the Shell Harbor/Sanibel Estates canal system. This canal system, which drains the altered land area at the eastern end of the Island, discharges stormwater runoff into San Carlos Bay. The western reach of the Sanibel River system discharges stormwater runoff at the Tarpon Bay Weir into Tarpon Bay. The area north of Periwinkle Way/Sanibel-Captiva Road (the roadways are generally located along the mid-Island ridge) drains into the estuary. The bayous near Blind Pass drain the western end of the Island.

Permitting of surface water management systems is subject to the regulations of the South Florida Water Management District.

The City of Sanibel has operational responsibility for public drainage facilities of Sanibel. Private property owners have operational responsibility for private drainage facilities, including outfall structures to public drainage features.

The Sanibel Land Development Code requires that post development rates of discharge not exceed predevelopment rates. Retention rather than detention is required to promote recharge of the groundwater table aquifer. The volume of retention is based on requirements of the South Florida Water Management District; however, infill development on existing parcels is required to retain runoff from a five-year, one-hour duration storm. The rainfall intensity for this storm is 2.8 inches. For infill development, the occurrence of greater storm events may result in flooding as retention area capacity is exceeded. However, the impacts of storm drainage systems to handle greater retention outweigh additional benefit achieved. Furthermore, buildings constructed in infill development areas are protected by the base flood elevation requirements of the Federal Flood Insurance Rate Map.

The City of Sanibel is located in a coastal zone. Since 1979, all residential buildings are required to be elevated and commercial buildings or required to be elevated or flood-proofed above a base flood elevation established in the Land Development Code in accordance with elevations prescribed by the Federal Emergency Management Agency and depicted on the adopted Federal Flood Insurance Rate Map.

Regional Impacts on the Quality of Surface and Ground Waters

Pollutants have had a dramatic and unacceptable impact on the quality of surface waters surrounding the City. Sanibel is susceptible to overnutrification through runoff from

development. To improve the quality of surface water and groundwater in and around Sanibel, the City has put a significant effort and investment into its SWMP and its Master Plan for Wastewater Treatment.

The City continues to eliminate non-point source pollution. In 2007, City Council adopted a fertilizer ordinance (no. 07-003) to reduce stormwater nutrient loading from residential and commercial landscapes. The ordinance regulates the amount of nitrogen and phosphorus that may be applied to residential and commercial landscapes, and prohibits the application of fertilizers containing nitrogen and phosphorus during the rainy season. This ordinance, however, does not apply to golf courses. In 2008, City Council adopted a list of Nutrient Management Guidelines for the golf courses in the City. The Nutrient Management Guidelines follow the Florida Department of Environmental Protection's Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses (2007). The recommendations are voluntary; however, the managers of the golf courses on Sanibel have embraced the recommendations and are making significant efforts to implement these Best Management Practices on their courses.

Unfortunately, efforts and investments to improve water quality have not been as extensive in other areas within the watershed of the Caloosahatchee River. Continued surface water runoff within the watershed of the Caloosahatchee River containing nonpoint source pollution contributes to the further degradation of the quality of the waters surrounding the City. This degradation of waters surrounding the City is exacerbated by the water releases from Lake Okeechobee.

There is a critical need to improve policies controlling water releases from Lake Okeechobee in order to maintain the water quality of coastal waters and the estuaries of Southwest Florida.

It is vitally important that the United States Environmental Protection Agency and the State of Florida implement the Total Maximum Daily Loads (TMDLs) for pollutants provision of the Federal Clean Water Act. Cooperation from the U. S. Army Corps of Engineers, the Florida Department of Environmental Protection, and the South Florida Water Management District is essential to adequately address this regional challenge.

Provisions of the Plan for Storm Drainage

In the preparation of plans for surface water management, in conjunction with development, the following principles should be observed:

1. A storm drainage system should provide for the gradual and dispersed drainage of excess surface runoff so that runoff from within the boundaries of the proposed development will approximate natural rates, volumes, quality and direction of flow from that parcel.
 - A storm drainage system should not reduce the volume or quality or increase the rate of water flow from any parcel draining to the interior wetland or Freshwater Management Area
 - A storm drainage system should not result in any surface runoff across or onto the beach
2. Inventory existing drainage problems on an area-by-area basis and identify needed water management improvements.
3. Develop area-wide stormwater management plans on a priority basis and integrate these into the adopted SWMP. Require future development to be consistent with these plans. Bring existing development into conformance with these plans as opportunities arise, e.g., by attaching conditions to development permits.
4. Require acceptable long-term operation and maintenance programs for stormwater drainage systems.
5. Include drainage improvements on a priority basis in the City's Five-Year Capital Improvements Program and budget.
6. Minimize the placement of fill below elevation 1.8 feet NAVD (3.0 feet NGVD) in the Freshwater Management Area.
7. Encourage property owners to periodically remove debris, sand, topsoil and other material from the bottom of swales on their property to maintain proper depth and increase storage capacity.
8. At least annually, inspect and maintain the publicly owned portions of the surface water management system, which includes the Sanibel River, weirs, culverts, catch basins, road side swales and detention and retention ponds.
9. The Tarpon Bay and Beach Road weirs shall be maintained at an elevation that is consistent with the Weir Policy of the SWMP.
10. Manage the surface water management system in accordance with the City Council-approved weir control policy to maximize the water management

objectives of improved flood control and environmental enhancement.

11. Consider establishing, in the Land Development Code, a minimum elevation for the floors of building entryways, garages and storage areas located below the base flood elevation.

In general, after heavy rainfall events there may be periods of several days' duration with standing water in some locations. This standing water will result in inconveniences to residents and visitors, but is necessary to sustain native wildlife and its habitat, to recharge the groundwater aquifer, to impede salt-water intrusion and to nourish the native vegetation.

Goals, Objectives and Policies

Goal Statement

Provide adequate stormwater drainage facilities and systems for the residents and land uses in the City of Sanibel in a manner that provides protection from flooding while preserving natural drainage features, the recharge of the groundwater aquifer, native vegetation and wildlife habitat.

Objective 1

Require stormwater drainage facilities and systems to be designed to the established level of service standard in order to provide protection from flooding for life and property within the City of Sanibel.

Policy 1.1. Preserve, maintain and upgrade existing stormwater drainage facilities and systems by

scheduling the needed work as a part of the City annual work program.

Policy 1.2. Provide stormwater drainage systems that retain the rates, volumes and direction of flow of stormwater runoff consistent with predevelopment conditions. At a minimum, stormwater drainage facilities and systems will be provided in accordance with the following level of service standards:

Standard for Stormwater Drainage Systems

For developments that are not exempt from permitting requirements of the South Florida Water Management District, provide stormwater drainage systems in accordance with the requirements of the District, typically designed for:

the 25-year storm event of three-day duration

For infill developments that are exempt from permitting requirements of the South Florida Water Management District, provide stormwater drainage systems designed for:

the five-year storm event of one-hour duration.

The water quality of stormwater discharge from stormwater management systems shall meet or exceed water quality standards established by Federal and State law.

Policy 1.3. Improvements for replacement, expansion or increase in capacity of stormwater drainage facilities

and systems will be consistent with maintaining the level of service standard for stormwater drainage systems.

Policy 1.4. Stormwater management facilities will be coordinated with adjoining facilities when such coordination will help or enhance maintenance of the Island's natural drainage system.

Policy 1.5. The City will continue to monitor local water quality and take appropriate actions to meet State and Federal standards.

Objective 2

Require stormwater management facilities and systems to be designed to preserve the valuable ecological functions of the natural drainage system in order to protect natural drainage features and the natural recharge of the groundwater aquifer.

Policy 2.1. The regulations in the Land Development Code will be retained to ensure that:

- The Plan for Storm Drainage and these objectives and policies are incorporated in the requirements of the Land Development Code
- Developments that are not exempt from permitting requirements of the South Florida Water Management District are required to provide stormwater drainage systems in compliance with the requirements of the District
- Stormwater drainage systems for infill development that are exempt from South Florida

Water Management District permitting requirements, are required to provide stormwater drainage for the five-year storm event of one-hour duration

- New developments are required to manage runoff from the storm event so that post development runoff rates, volumes and pollutant loads do not exceed predevelopment conditions
- Contaminants contained in construction site runoff are targeted through Best Management Practices (BMP) to curtail sedimentation and erosion and to minimize the delivery of nutrients, metals and organic compounds to downstream waterways
- Through proper enforcement, developments employ stormwater BMP
- Prohibited illicit discharges into the stormwater system are identified and monitored through a system of proactive inspections and enforcement activities against those who discharge illicitly
- Periodic inspection and maintenance of on-site stormwater drainage systems and facilities is provided
- Compliance with upcoming changes to Total Maximum Daily Loads (TMDL) and Numeric Nutrient Criteria is achieved

Policy 2.2. When a development order (permit) is issued, require, at a minimum, retention of a five-year, one-hour duration storm to provide for the recharge of the groundwater aquifer.

Policy 2.3. Require surface water retention areas to be planted with types of native species that can survive in the wet/dry conditions of these areas.

Policy 2.4. The Public Works Department will ensure that the public stormwater management system is inspected and maintained on at least an annual basis.

Policy 2.5. When the South Florida Water Management District identifies prime groundwater recharge areas on Sanibel, the City will establish regulations for the protection of these resources.

Objective 3

Implement the *Surface Water Management Plan* for the Freshwater Management Area of the Sanibel River.

Policy 3.1. Implement the surface water management program and wetlands enhancement features recommended in this Plan.

Policy 3.2. The Tarpon Bay and Beach Roads weirs will be maintained so that the elevation of the weir crest of the Beach Road weir and the Tarpon Bay weir is consistent with the *SWMP*.

Policy 3.3. Stormwater drainage facility and system improvements warranted by the *SWMP* are to be included in the City's Capital Improvements Program.

Section 3.3.7. Recreation and Open Space Element

Pursuant to Section 163.3177(3), Florida Statutes.

Background Discussion

The purpose of the recreation and open space element is to plan for a comprehensive system of public and private recreation and open space sites that are available to the public.

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(6)(e), Florida Statutes* are provided in this subsection.

In the City of Sanibel there are a variety of open spaces and recreation sites and facilities. An abundance of Federal, State, County, Municipal, and private recreation facilities and open space exist on Sanibel. The Federally owned and administered J. N. "Ding" Darling National Wildlife Refuge attracts thousands of visitors from all over the world.

It is anticipated that Sanibel will always attract tourists to its famous beaches and other natural resources. This situation produces a major impact on the Island and must be planned for so that the social and environmental values and the character of the community are protected and so that the commerce generated by such visits can be a benefit to the City and its residents.

When the City was incorporated, it was recognized that recreational facilities required upgrading and plans were made for improving existing and providing for additional facilities. In 2001, the City Council appointed a Parks and Recreation Advisory Committee and retained a consultant to study park and

recreational needs in the City. Public involvement, including focus groups, interviews, needs survey by mail and a town meeting, was a key component of this study. A Master Parks and Recreation Plan was reviewed by the Planning Commission and adopted by the City Council Resolution no. 02-78, on August 6, 2002.

The vision of the Master Parks and Recreation Plan is:

"to provide the City of Sanibel with strategically located special use facilities and neighborhood parks all sensitively woven into the Island's existing environmental 'fabric' to meet residents' recreation and social needs".

In an attempt to ensure that the demand for recreation facilities does not exceed availability, a needs assessment was undertaken in the preparation of the Master Parks and Recreation Plan. These needs for parks and recreation facilities are based on the resident population. However, the seasonal population was considered and is reflected in the Master Plan.

Specific facility needs were identified in the Plan and steps have been taken to implement the Master Plan.

The City's Capital Improvements Plan identified project funds for the improvement of parks and the construction of a new recreation complex to replace the original facility adjacent to the Sanibel School. The recreation complex was completed in 2007. The City obtained funding from a variety of sources for the implementation of the Master Parks and Recreation Plan. Implementation of the Master Plan is complete.

Three grants from the State of Florida were obtained to purchase a parcel of land to enlarge Community Park, to add and replace facilities at Community Park and to add and replace

facilities at Bowman's Beach Park. Upgrades to facilities at Roadside City Park have been completed.

Shared use paths contribute to the City's recreation facilities, as well as to its transportation facilities. The Master Plan for Shared Use Paths is incorporated into this Recreation and Open Space Element of the *Sanibel Plan*.

Proximity and access to recreation facilities is essential to ensure that recreation needs are adequately met. However, because of the relatively small size of the City and the low density of residential areas outside the Resort Housing District, Sanibel is comprised of a single service area for some recreation facilities. The Master Parks and Recreation Plan identified the need to decentralize recreational services in parks in various parts of the City.

Many resource-based open spaces, such as beaches and wetlands, are widely distributed throughout the City. Access to these natural resources has been extended by adding trails for hikers and non-motorized vehicles in locations that do not adversely impact these preservation lands. Additional trail access continues to be provided. In addition to the multitude of passive recreation opportunities afforded by the natural resources in the City and easy access to State waters for fishing and boating, the City has a good system of parks and recreation sites.

The key component of the Master Parks and Recreation Plan was the redevelopment of the Recreation Center. The new facility, opened in 2007, is located at the original site adjacent to the Sanibel School, in furtherance of the State's school siting criteria. Thus the Recreation Center and the Sanibel School will continue to provide a focal point for many community activities.

Another focal point for community activity, special events and informal assembly is being provided by the development of the Sanibel Community Park in the area adjacent to the Sanibel Community Association.

In this element of the *Sanibel Plan*, level of service (LOS) standards have been established for recreation facilities. The City has successfully attained these levels of service. With the adoption and implementation of the Master Parks and Recreation Plan, these LOS standards have been updated and the new standards are reflected in Policy 1.2 of this element.

Fewer than 600 additional dwelling units remain to be developed in the City of Sanibel (which is less than 10 percent of the housing stock at "build-out") and the majority of those dwelling units will be infill development on existing lots for single family dwellings. Since the City is close to "build-out", it is impractical to link the replacement of existing recreational facilities to the concurrency management program for the development of additional dwelling units. Nonetheless, it is an objective of the *Sanibel Plan* to provide the recreation facilities listed here in the Standards for Recreation Facilities.

The City's recreation facilities are adequate to serve existing development and the limited new development that remains to be built in the City. However, the City will continue to provide recreation facilities and programs beyond the minimum level of service standards for recreation facilities established in this element of the Plan.

The schedule to replace and upgrade recreational facilities in accordance with the Master Parks and Recreation Plan will depend on the City's ability to fund these improvements. Funded components of the Master Plan will be included in the City's Five-Year Capital Improvements Plan, but these

recreational facilities will not be included in the adopted Five-Year Schedule of Capital Improvements.

The Community Center is provided by the Sanibel Community Association. The Sanibel Island Golf Club, available to the public, is provided by the private sector. Other private recreation facilities, such as tennis courts, satisfy some demand from neighborhoods and condominium developments.

As the City of Sanibel has matured, open spaces provide the increasingly important function of conservation and protection of natural resources. Furthermore, open spaces contribute to the nonurban atmosphere desired by the residents of Sanibel.

The abundance of open spaces in the City of Sanibel has attracted people to the Island in large numbers. These natural resource-based features of the community create a demand that, at times, seem to exceed the supply. Although the City and other conservation-oriented organizations continue to acquire and manage environmentally sensitive lands, the best means of retaining quality open spaces is through the proper management of the seemingly unlimited demand on the resource.

It can easily be assumed, with the City's 15 miles of Preservation Districts along the Gulf Beach and Bay Beach and 6,000-acre Conservation District on environmentally sensitive lands, that there is a sufficient amount of open spaces on Sanibel. Yet, a level of demand for use that can produce overuse threatens the quality of some of these extensive resources, particularly the beaches.

A stable portion of this demand comes from residents, both permanent and seasonal, but a significant and increasing demand for use of these open spaces comes from day visitors.

As the City of Sanibel continually adjusts to its role in the region, the City's management and participation in the management of these treasured resources must include programs to protect against their overuse and consequent degradation. This is true for Sanibel's beaches, its wildlife refuge and other conservation lands.

About one third of the linear mileage of beaches in Lee County accessible by car is in the City of Sanibel. Although the functional population of the City of Sanibel grows slowly, the functional population of Southwest Florida is growing much faster.

The increase in the population and visitors of Lee County increases the demand for day trips to the City of Sanibel. Demand for the beaches is increasing while the supply of beaches is not.

The maintenance of a natural beach as a vital natural resource is important to the community's quality of life and the economy of the City. For a variety of environmental, social and economic reasons, it is important that the carrying capacity of the beach for wildlife is not diminished. As the City expresses its objective to preserve the natural condition of Sanibel beaches, there is a need to determine acceptable limits of change, if any, to the Gulf Beach Zone. There remains a need to develop a scientific methodology to establish baseline conditions; to monitor the change of conditions over time and to assess the extent to which these changes can be attributed to human activities.

The demand for recreation facilities comes largely from permanent and seasonal residents and has been well addressed since the City's incorporation. Consequently, the City of Sanibel has and is adequately providing for its existing and foreseeable needs for active recreational facilities. An exception to this

situation is the increasing use of the City's shared use path system by day visitors.

The schedule to replace and upgrade recreational facilities, in accordance with the Master Parks and Recreation Plan, will depend on the City's ability to fund construction and maintenance of these improvements.

Plan for Recreation and Open Space

The provisions of the City's Plan for Recreation and Open Space are as follows:

1. After renovating and replacing outdated and worn-out facilities, maintain recreational facilities to keep them functional and to extend their usefulness.
2. Operate recreational facilities and programs in a fiscally responsible manner, employing user fees when this funding is found to be equitable and appropriate.
3. Continue to provide shared use paths throughout the Island that are outside the pavement of major streets and in the right-of-way within the vegetation, in accordance with the Master Plan for Shared Use Paths.
4. The Gulf and Bay beaches of Sanibel, a natural resources that are hard to visit without having recreational experiences, are to be maintained in their natural conditions, thereby ensuring passive recreational opportunities, such as bird watching, that are compatible with wildlife's use of this rare and limited natural resource. Commercial uses of the Gulf and Bay beaches, except for those incidental to recreation use that is compatible with scenic preservation and conservation uses, will be prohibited. Recreational activities in the Gulf and Bay beaches shall not interfere with the conservation of these vital natural resources.
5. Maintain all existing beach access easements and restrict public access across private property except where such easements exist. The establishment of new public accessways to the beach and the expansion of parking areas at existing beach accessways should only be approved if these areas of human activity will not cause further infringement on the carrying capacity of the beach for wildlife.
6. Continue to provide bicycle racks at beach access points and parks as a means of encouraging use of bicycles for transportation to the beach, parks and recreational facilities.
7. Continue to provide restrooms and changing areas at heavily used beach access areas where they can be compatible with surrounding land uses.
8. Restore dunes and beach ridges and dune and beach ridge vegetation in areas of erosion near beach access points.
9. Continue to provide a launching facility for non-motorized water craft, such as canoes and kayaks at Bayview Park, which are compatible with the

carrying capacity of the impacted water body and compatible with surrounding land uses.

10. Continue the ongoing commitment to provide easy access to recreation facilities for the general population and particularly for the very young, senior citizens and people with disabilities.
11. Continue to provide a recreation center for all ages on Sanibel.
12. Continue to provide a senior center (Center 4 Life) on Sanibel. The City is considering improvements (renovation or replacement) for the Center 4 Life facility.
13. Continue to promote cultural activities in the City.
14. Consider development of an area to serve as a focal point for community activity, special events and informal assembly.
15. Support the continued provision of private recreational facilities available to the public (such as the Community Center and golf courses) that are compatible with the goals, objectives and policies of the *Sanibel Plan*. The private sector is expected to continue to play a major role in providing recreation and leisure opportunities to residents as well as visitors.
16. Include preservation and conservation areas in the City of Sanibel such as tidal wetlands and beaches as the heart of the City's open space network. This

resource is a vital component in the Plan for Scenic Preservation.

17. Prohibit the exploitation of the natural resources in preservation and conservation areas, including the prohibition of commercial activities on the beach, except for limited activities that are accessory to resort housing uses.
18. Implement programs and measures that further protect the beaches on Sanibel so that the extent of land use and other human activity is not diminishing the carrying capacity of the beach for wildlife.
19. Pursue opportunities for "unimproved" natural trails for biking and hiking on appropriate City properties.

Goals, Objectives and Policies

Ensure that adequate recreational facilities and open spaces are provided to satisfy the recreational needs of residents to the extent practicable, in a manner that preserves and protects the fragile natural resources of the Island.

Objective 1

Through the implementation of the *Master Parks and Recreation Plan*, the City of Sanibel's system for recreation facilities will continue to provide adequate recreational opportunities for its residents that are compatible with the wildlife's use of natural resources, through the initial and long range planning periods of this Plan.

Policy 1.1. Preserve and maintain existing recreational facilities by providing proper management supported by an adequate operating budget.

Policy 1.2. Provide adequate recreational facilities for the residents of the City of Sanibel. Recreational facilities, which already exist or are being replaced have been provided in accordance with the following level of service standards.

**Standards for Recreation Facilities
for the residents of the City of Sanibel**

No.	Facility
3	Ball Diamonds/Multi-purpose Fields
2	Multi-purpose Court Areas
1	Covered Multi-purpose Area (2 courts)
4	Outdoor Tennis Courts
2	Volleyball Courts (indoor or outdoor)
1	Aquatic Center
1	Golf Course (18 holes)
1	Community Center
1	Boat Ramp (dual launching capability)
1	Skate Area
1	Non-motorized Boat Launching Area
3	Playgrounds

Shared Use Paths are to be provided in accordance with the Master Plan for Shared Use Paths; however, there is no level of service standard for shared use paths.

The City will continue to provide recreation facilities and programs beyond the minimum level of service standards for recreation facilities established in this Policy.

Policy 1.3. Acquisitions of parks and major improvements to recreational facilities, needed to comply with level of service standards for recreational facilities, are to be scheduled in the Five-Year Schedule of Capital Improvements of the Capital Improvements Element of this Plan.

Policy 1.4. Acquisition of parks and major improvements to recreational facilities, not needed to comply with level of service standards for recreational facilities, and, therefore, not included in the Five-Year Schedule of Capital Improvements, are to be included in the City's Capital Improvements Program.

Objective 2

The City of Sanibel's system of open spaces will continue to provide scenic resources and recreational opportunities for its residents through the initial and long-range planning periods of this Plan.

Policy 2.1. Open spaces will be protected from incompatible land uses by requiring a development permit (order) for development of adjacent lands.

Policy 2.2. Retain requirements in the Land Development Code that open spaces (undeveloped areas) be provided within private developments.

Policy 2.3. Use preservation and conservation areas as scenic resources, in a manner that is compatible with the principal purpose of these areas.

Objective 3

Encourage people to use alternatives to the private automobile as a means of transportation to public recreational facilities and open space areas.

Policy 3.1. Limit parking spaces for motorized vehicles (automobiles), as to number and location, in a manner that is consistent with natural resource conservation objectives and compatible with surrounding land uses.

Policy 3.2. Provide shared use paths and routes and secure bike racks as a means of encouraging the use of bicycles as a method of transportation to public recreation facilities and open space areas.

Policy 3.3. Provide safe and convenient shared use paths and routes as a means of encouraging bicyclist and pedestrian access to public recreation facilities and open space areas.

Objective 4

The numerous public accessways to the beaches in the City of Sanibel will be preserved and maintained, as well as improved, if warranted.

Policy 4.1. Public accessways to the beaches should maintain a limited number of parking spaces in order to accommodate access to and use of the beaches in a manner that preserves and protects the fragile beach environment.

Policy 4.2. Reserve a portion of the beach access parking spaces for use by residents.

Policy 4.3. The exploration of programs for reducing auto ridership within the City, identified by the transportation policies of this Plan, should consider providing continued and improved accessibility to public accessways to the beaches.

Objective 5

All levels of government and the private sector will provide recreational opportunities to achieve a balanced recreation system.

Policy 5.1. Efforts to satisfy recreational needs that are not fulfilled by the private sector will be shared by the public and private sectors.

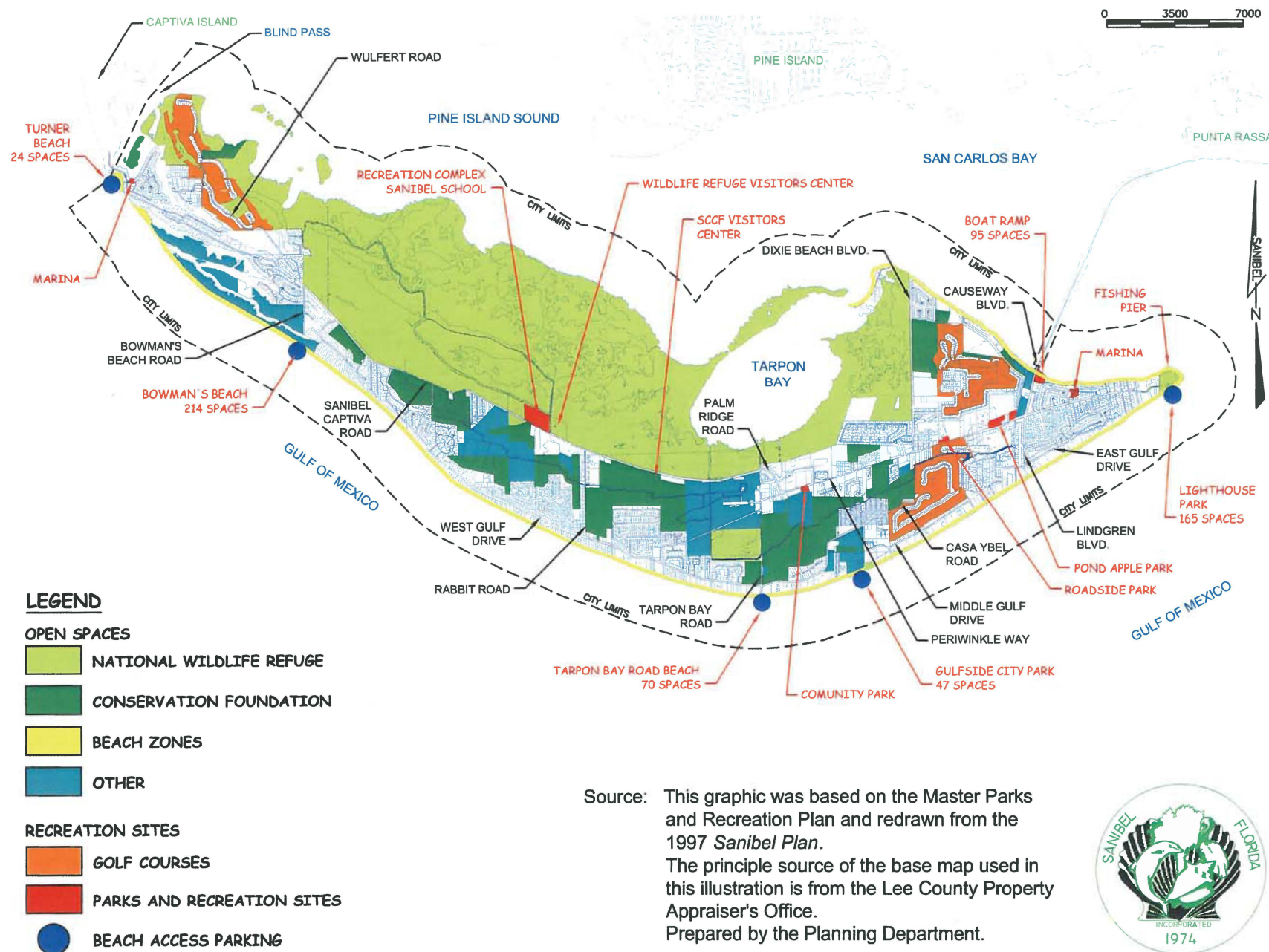
Policy 5.2. The City of Sanibel will coordinate its efforts to provide recreation opportunities, including the preservation of open spaces, with those of the

- J. N. “Ding” Darling National Wildlife Refuge Education Center
- Sanibel-Captiva Conservation Foundation
- Lee County School District
- Lee County Government
- Sanibel Community Association
- The private sector

Policy 5.3. Encourage private developments to provide recreation facilities and open spaces in accordance with the goals, objectives and policies of this Plan by

including land development regulations in the Land Development Code that provide incentives for this.

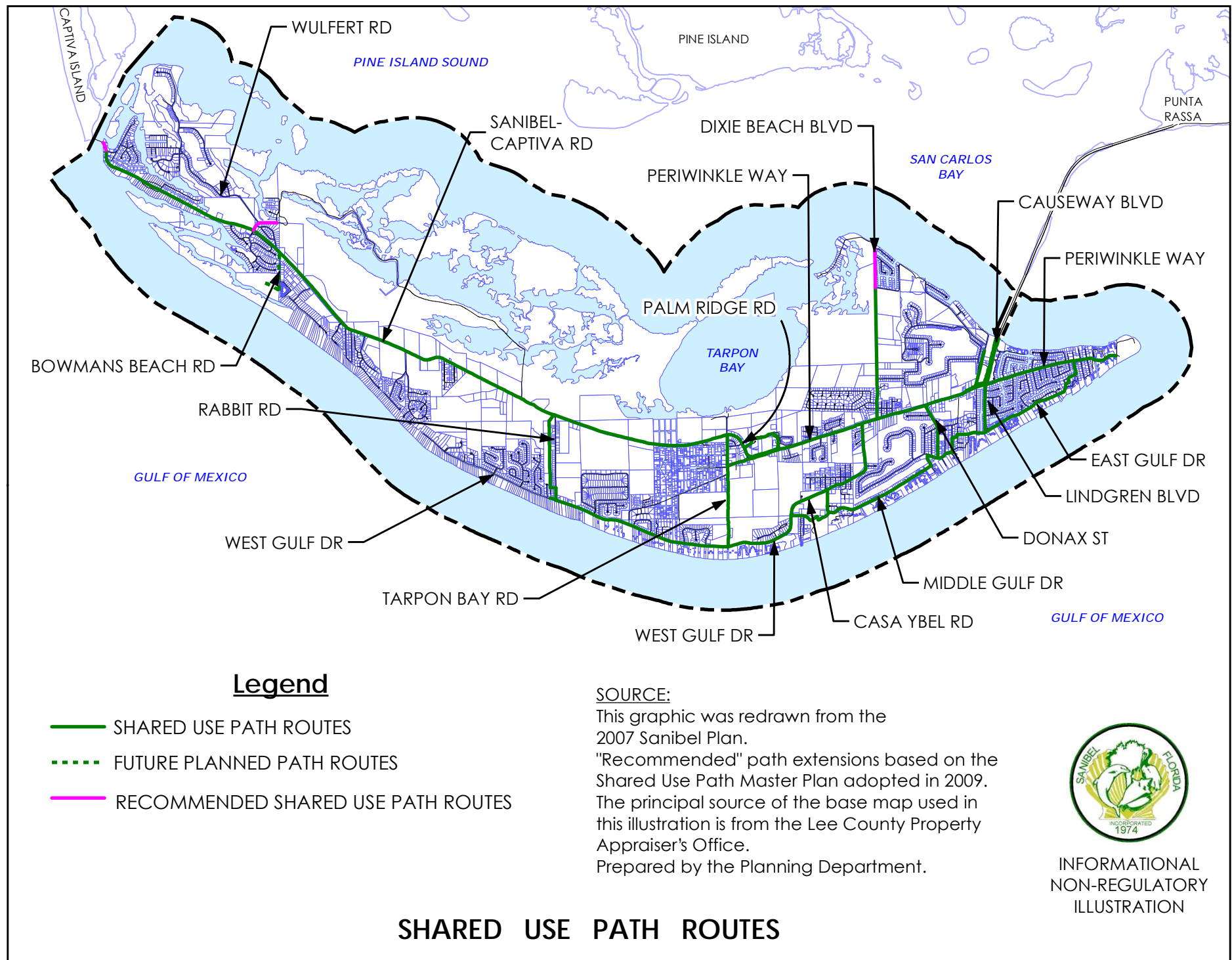
Policy 5.4. Encourage private developers to set aside undeveloped lands suitable for passive recreation or conservation uses by applying land development regulations that provide incentives to do this.



RECREATION SITES AND OPEN SPACES



INFORMATIONAL
NON-REGULATORY
ILLUSTRATION



INFORMATIONAL
NON-REGULATORY
ILLUSTRATION

In 2004, a major addition was completed at The Sanibel School, including permanent classrooms for the middle school. A new library, media center and cafeteria were part of this addition at The Sanibel School. The Sanibel School has an on-site library and the Sanibel Library is about 3 miles from the school.

The City and the Lee County School District have taken other steps to strengthen the linkage between school planning and land use planning. In 2002, the City of Sanibel and the Lee County School Board entered into an interlocal agreement to coordinate: on appropriate population projections; on infrastructure and planning; and on siting of new schools. Pursuant to Florida Statutes, Section 163.31777, that agreement was replaced with the current 2008 interlocal agreement for School Concurrency. But even before the adoption of these agreements, the City and the School Board had coordinated the siting and capacity of The Sanibel School with the location and density of residential development on Sanibel and Captiva.

This coordination is further exemplified by the redevelopment of the City's Recreation Center on lands owned by the School Board and adjacent to The Sanibel School. The Lee County School District has cooperated with the City of Sanibel and with Lee County to accommodate the City's Recreation Center and its courts and fields at The Sanibel School. For decades, since the City of Sanibel was incorporated, a single site housed the Sanibel School and the bulk of active recreation facilities for organized sports on the Island. The Sanibel School was expanded on this site and the Recreation Center and its pools, fields and courts were redeveloped to maintain this effective association of public facility land uses.

The Sanibel School, both historically and currently, is well incorporated into the fabric of this Island community.

The *Sanibel Plan*, including this element, addresses school utilization, school proximity and compatibility with residential development, availability of public infrastructure for public schools and co-location opportunities for other public facilities in relation to public schools. This element of the *Sanibel Plan* reflects the financial feasibility of the Lee County School District to provide adequate public schools in accordance with the level of service standards for public schools established throughout Lee County, including the City of Sanibel and the other incorporated areas of the County.

The Public School System in Lee County

Public education in the City of Sanibel is administered and financed by the Lee County School District.

The Florida Department of Education requires each school district to implement a financially feasible five-year capital facilities work plan that provides for school capacity improvements to accommodate projected student growth.

Currently, the School District operates over 90 public schools from pre-kindergarten to 12th grade. This inventory includes elementary schools, middle schools, high schools, K-8 schools, including The Sanibel School, a 6-12 school, special centers and high-tech centers.

Within the current five-year plan, new elementary schools, middle schools and high schools will provide added school house capacity by 2012. Improvements which increase the capacity of schools and which are budgeted and programmed for construction within the first three years of the plan are considered "committed" projects for concurrency purposes.

Neither the City of Sanibel nor the Lee County School District project the need for any additional public school sites in the City of Sanibel throughout the short- and long-range planning periods of the *Sanibel Plan*, but the City will continue to coordinate development activities and changes in population with the Lee County School District just in case conditions warrant a change in the need for new schools.

The School District constantly monitors development trends to determine where new schools will be needed. The expected cost and timing of these schools is adjusted to match available revenue sources.

Concurrency Boundaries and Level-Of-Service Standards for Lee County

School concurrency is based on a measurement of available school capacity within a defined geographical area, called a “Public Schools Concurrency Service Area” (PSCSA). The School District, the County, and the incorporated areas within the County have agreed to use the School District’s three student assignment zones as concurrency service areas for the County.

“Level of service” (LOS) is expressed as a ratio of student enrollment to school capacity for all schools of each type: elementary school, middle school, high school and special purpose schools.

To establish a formal level of service, the School District first identifies the current level of service that is being provided. Then the District projects future demand from additional students, identifies needed capacity in nearby schools, and determines the cost to construct additional school capacity. This cost is then compared to available funds for construction.

To determine the capacity of each school, the School District uses a methodology established by the State Department of Education known as the Florida Inventory of Schoolhouses (FISH). This capacity is the number of students that may be housed in a school at any given time based on a state-determined percentage of the number of existing “student stations”.

The number of satisfactory student stations is multiplied by the utilization rate specified in the State requirements for educational facilities to create the “Permanent FISH Capacity” for each school. “Permanent capacity” excludes re-locatable classrooms from the capacity of schools and no capacity is assigned to small instructional spaces or to specialized classrooms such as science labs and art or music rooms.

The School District has compiled data showing each school’s current enrollment and its permanent FISH capacity. Projections of future student demand are applied to each school for each year through 2015-2016. New schools are shown as available in future years according to the School District’s current construction schedule.

A “utilization percentage” (enrollment divided by capacity) has been calculated by the School District for each school for each year. This percentage can be thought of as a “level of service” for that school. Subtotals of enrollment, capacity, and utilization percentage are provided by the School District for each school type in each concurrency service area and sub-zone.

The three Public School Concurrency Service Areas for Lee County are delineated on the County-wide map of Lee County School District student assignment zones.

**The Sanibel School:
Capacity, Enrollment and Utilization (Level of Service)**

The capacity, projected enrollment and projected utilization of The Sanibel School is provided below.

The Sanibel School (Elementary)

Year	Capacity	Enrollment	Utilization
2011-12	263	227	86%
2012-13	263	248	94%
2013-14	263	249	95%
2014-2015	263	249	95%
2015-2016	263	261	99%
2016-2017	263	261	99%

The Sanibel School (Middle)

Year	Capacity	Enrollment	Utilization
2011-12	154	115	75%
2012-13	132	124	95%
2013-14	132	126	95%
2014-2015	132	125	95%
2015-2016	132	132	100%
2016-2017	132	132	100%

High school students attend public schools or private schools located off the Island. The capacity, enrollment and utilization of the high schools reported in the Lee County School District's Five-Year Capital Facilities Work Plan for the South Zone are estimated to be considerably below 100% utilization and are projected to remain well below 100% utilization for the next five years.

The capacity, enrollment and utilization of all public schools in the County is reported in the Lee County School District's 2012-2013 Work Plan and Five-Year Capital Facilities Work Plan.

Any deficiencies that may occur in the future will be addressed by the Lee County School District with the use of re-locatable classrooms. Re-locatable classrooms will be used to maintain the level of service on a temporary basis when construction to increase capacity is planned and is in process. The temporary capacity provided by re-locatable classrooms may not exceed 20 percent of the permanent FISH capacity and may be used for a period not to exceed three years. Re-locatable classrooms may also be used to accommodate special education programs as required by law and to provide temporary classrooms while a portion of an existing school is under renovation.

According to the 2010 U.S. Census, 469 children from 5 to 19 years old (7.2 % of City population) reside within the City of Sanibel. In the City of Sanibel, school-aged children represent a relatively low percentage of the total population.

Reductions in projected enrollment at The Sanibel School are reported from the Lee County School District's Five-Year Capital Facilities Work Plan. Even with a modest increase in the number of dwelling units, the actual number of school-aged residents within the City may decline over the next 10 years.

Capital Funding and Financial Feasibility

The Lee County School District relies on both local and State funding for new construction and renovation.

The primary local funding is from property taxes and school impact fees. The School District may also sell bonds or offer certificates of participation. School expansion projects also rely

on state capital outlay funding sources derived from motor vehicle license taxes, known as Capital Outlay and Debt Service funds, and gross receipts tax revenue from utilities, known as Public Education Capital Outlay funds.

Each year, the Lee County School Board is required by State law to adopt a financially feasible Five-Year Capital Facilities Work Plan. That plan details the capital improvements that are needed and the revenues that are available to meet the demand for additional student stations.

The School District's capital improvements program does not require funding from Lee County or the Municipalities within the County. The School District's capital financing plan is sufficient to fund necessary capital improvements County-wide and is financially feasible.

The Lee County School District has demonstrated that, over the coming five years, the District has a financially feasible plan to provide adequate school capacity in all three of its concurrency service areas, including the South Zone containing the City of Sanibel. The *Sanibel Plan* reflects that the Lee County School District has achieved and will maintain the level of service standard for public school facilities adopted in this element.

The City's Five-Year Schedule of Capital Improvements in the Capital Improvements Element of this Plan will include Lee County School District school facilities projects within the City that are needed to address future needs.

The City incorporates into the Capital Improvements Element of the *Sanibel Plan*, the Lee County School District 2012-2013 Work Plan as adopted by the Lee County School Board on September 25, 2012. The City shall incorporate the School Board's annual updates of the above into the Capital Improvements Element.

The Lee County School District 2012-2013 Work Plan identifies school facility projects which are necessary to address existing deficiencies and meet future needs. The Plan demonstrates that the School District can achieve and maintain the adopted LOS standard for the five year planning period, supported by data and analysis that demonstrates financial feasibility.

Proportionate Share Mitigation

When the student impacts from a proposed residential development cause the adopted level of service for public school facilities to fail, the developer must address mitigation of the deficiency in school capacity. Proportionate share mitigation must create a sufficient number of additional student stations to maintain the established level of service with the addition of the demand generated by the development. Mitigation options include, but are not limited to, the options identified in the City's interlocal Agreement with the School District.

The amount of the required mitigation shall be determined using the following formula:

$$\begin{aligned} &\text{Proportionate share mitigation amount} = (\text{equals}) \\ &\quad \text{the number of housing units by type} \times (\text{times}) \\ &\quad \text{the student generation rate by type of unit} \times (\text{times}) \\ &\quad \text{the student station cost} \end{aligned}$$

The student station cost will be adjusted to local costs by using the total cost per student station established by the Florida Department of Education, plus a share of the land acquisition and infrastructure expenditures as determined annually in the Lee County School District Work Plan.

The cost of the proportionate share mitigation required by the developer shall be credited toward the payment of impact fees imposed by local ordinance for the same need. If the cost of the mitigation option agreed to is greater than the school impact fees for the development, the difference between the developer's mitigation costs and the impact fee credit is the responsibility of the developer. Any mitigation accepted by the School District and subsequently agreed to by the City shall result in a legally binding agreement between the School District, the City and the developer.

Coordinated School Planning and Shared Costs

Coordinated school planning requires the School District to submit proposed school sites to the affected local government for review and approval. This process also permits the School District and City to jointly determine the need for and timing of on-site and off-site improvements necessary to support each new school. Necessary infrastructure improvements may include potable water lines, sewer lines, surface water management systems, roadways including turn lanes, site lighting, bus stops, and shared use paths. These improvements are mandated at the time of site plan approval and can address the timing and responsibility for construction of required on-site and off-site improvements.

State law requires the School District and local governments to consider co-locating public schools and public facilities. This coordination is exemplified by the redevelopment of the City's Recreation Center on lands owned by the School Board and adjacent to The Sanibel School. The Lee County School District has cooperated with the City of Sanibel and with Lee County to accommodate the City's Recreation Center and its courts and fields at The Sanibel School.

During the preparation of its educational plant survey, the School District can identify future co-location and shared-use opportunities for new schools and public facilities. Co-location and shared use opportunities can likewise be considered by the City when updating the *Sanibel Plan* and when planning for libraries, parks and open spaces, community centers, and governmental facilities for health care and social services.

Projected Additions to Capacity during the five and 10 Year Planning Periods

In the ten year planning period of the *Sanibel Plan* (2022) the Lee County School District plans to add two elementary schools, one middle school and one high school in the South Concurrency Service Area. The District has acquired a bank of land that will accommodate these facilities.

Goals, Objectives and Policies

Goal Statement:

Through coordination with the Lee County School District, provide adequate public education facilities and services in a high-quality educational environment that is accessible for all school-aged children residing in the City of Sanibel.

Objective 1

Implement the interlocal agreement with the Lee County School District to coordinate on appropriate population projections and the location of public schools with supporting infrastructure and other public facilities.

Policy 1.1. Coordinate the location of public school facilities with the Future Land Use Map of the *Sanibel Plan* to ensure that existing and proposed school facilities are located consistent with the existing and future residential areas they are to serve and proximate to appropriate existing and future land uses.

The Land Use Element of the *Sanibel Plan* contains the Policy (B4.2) that “Public schools are permitted in the Altered Lands and Mid-Island Ridge zones designated on the Ecological Zones Maps of the Future Land Use Maps series of the *Sanibel Plan*.”

Policy 1.2. Implement the interlocal agreement with the Lee County School District to coordinate on infrastructure and land use planning and on the siting of new schools.

Policy 1.3. The City and the Lee County School District shall jointly determine the need for and timing of on-site and off-site improvements, such as sidewalks, shared-use paths, and turn lanes, necessary to support public schools and shall enter into an agreement identifying the timing, location, and the party or parties responsible for constructing, operating, and maintaining off-site improvements necessary to support public schools.

Policy 1.4. Preserve and maintain existing facilities through implementation of proper maintenance and upkeep procedures.

Policy 1.5. Expand and add facilities as needed to provide adequate service.

Policy 1.6. Governmental agencies providing parks, libraries and community centers are strongly encouraged to locate them near schools.

Policy 1.7. The City will coordinate with nearby local governments and the Lee County School District on emergency preparedness issues related to public school facilities. Unlike many of the Lee County School District’s public school facilities, the location of The Sanibel School, on a barrier island, is unsuitable for use as a hurricane shelter.

Policy 1.8. Public school facilities shall be sited and designed in general conformance with the conditional use standards for institutional uses in the Land Development Code. Standards and conditions may not be imposed which conflict with those established in *Section 1013.33, Florida Statutes* or the Florida Building

Code, unless mutually agreed to by the Lee County School District.

Objective 2

Ensure continued maintenance of an adequate level of service for public school facilities through implementation of the level of service standards (LOS) for public schools that are contained in the most current interlocal agreement with the School District and this element of the Sanibel Plan in order to meet future needs.

Policy 2.1. The minimum acceptable level of service standards for public schools within the City of Sanibel shall be:

School Type	Level of Service Standard*		
Elementary:	100% of	permanent	Florida
	Inventory	of School	Houses
	Capacity**		
Middle:	100% of	permanent	Florida
	Inventory	of School	Houses
	Capacity**		
High:	100% of	permanent	Florida
	Inventory	of School	Houses
	Capacity**		
Special Purpose:	100% of	permanent	Florida
	Inventory	of School	Houses
	Capacity**		

* As adjusted by the School Board annually to account for measurable programmatic changes. For the purposes of this policy, measurable programmatic change means a change to the operation of a school and measurable capacity impacts including, but not limited to, double sessions, floating teachers, year-round schools and special education programs.

Re-locatable classrooms may be used to maintain LOS on a temporary basis when construction to increase capacity is planned and in process. The temporary capacity provided by re-locatable classrooms may not exceed 20% of the Permanent FISH Capacity and may be used for a period not to exceed three years. Re-locatable classrooms may also be used to accommodate special education programs as required by law and to provide temporary classrooms while a portion of an existing school is under renovation.

** “Permanent capacity” means the combined capacity for all schools of each type that are located in the Public School Concurrency Service Areas.

Implementation of these concurrency standards for public school facilities, since April 1, 2008, is through administration of the interlocal agreement with the Lee County School District. PSCSAs exclude multi-zone magnet schools and special centers.

Policy 2.2. The City of Sanibel adopts the Lee County School District’s School Assignment Zones Map as Public School Concurrency Services Areas (PSCSA). PSCSAs depicted on the School Assignment Zones for Lee County Map shall be measured against capacity in the three Student Assignment Zones (the South, which contains

the City of Sanibel and the abutting East and West Zones).

Amendments to the school concurrency area will be undertaken pursuant to the interlocal agreement with the Lee County School District for school concurrency to ensure that utilization of school capacity is maximized to the extent possible. The City staff and the staffs of the Lee County School District and Lee County will discuss the need to amend the PSCSAs prior to the initial annual amendment following the release of the 2010 Census data. School District staff will present any proposed modification to the PSCSAs, taking into account transportation costs, court approved desegregation plan as well as other factors, for comment and input. The Lee County School District will be the lead agency for making application to amend the Sanibel Plan and the Interlocal Agreement for School Concurrency to change the adopted PSCSAs.

Policy 2.3. If adequate capacity to address student impacts will not be in place or under actual construction within three years in the concurrency service area where the development is located, the School District will look to a contiguous concurrency service area for capacity. If sufficient capacity to address student impacts will not be in place or under actual construction within three years in the contiguous concurrency service area, the developer must address mitigation of the deficiency in school capacity. Proportionate share mitigation must create a sufficient number of additional student stations to maintain the established level of service with the addition of the demand generated by the development. Mitigation options include, but are not limited to, the options

identified in the City's interlocal agreement with the School District.

If mitigation can be agreed upon, the City and the School District will enter into an enforceable binding agreement with the developer. If capacity is not available and mitigation cannot be agreed upon, the City cannot approve the application until such time as capacity becomes available.

Policy 2.4. Public school concurrency is implemented through the City's review of applications for residential development to determine whether the adequacy of public facilities and services meet or exceed the level of service standards established in this element of the *Sanibel Plan* and that adequate public facilities are available when needed for the proposed development.

Policy 2.5. The following residential uses are vested and are not subject to concurrency review for public school facilities:

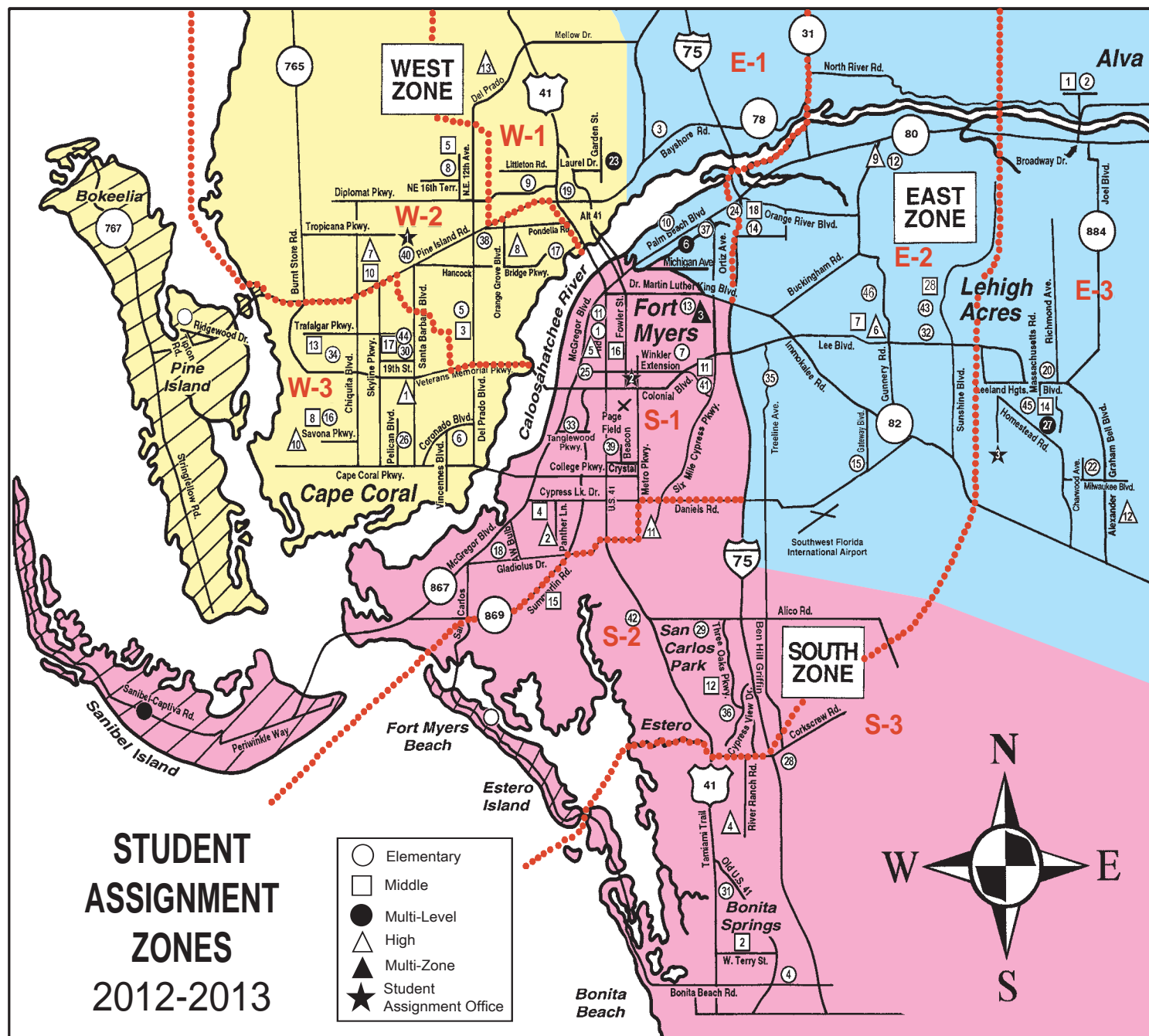
Lots for single family and duplex units that were created or that have received preliminary plat approval prior to April 1, 2008;

Residential units in multi-family developments having received final approval prior to April 1, 2008; and

Residential units constructed under the City's Below Market Rate Housing (BMRH) Program that are located on lots for single family and duplex units that were created prior to April 1, 2008.

Policy 2.6. The Lee County School District maps entitled:

“Student Assignment Zones for Lee County” map depicting public school concurrency service areas and existing locations of public school facilities, by type, and ancillary plants; and “Educational and School District Facilities in Lee County 2008-2009” map depicting the planned general location of public school facilities, renovated facilities and ancillary plants, by year, for the five year planning period and for the end of the long-range planning period of the Lee Plan are hereby adopted and shall be maintained as part of this element.



Source: The Lee County School District

Section 3.3.9.

Other Human Support Systems

Pursuant to Sections 163.3177(7)(e), Florida Statutes.

Background Discussion

In addition to roads, water, wastewater treatment, solid waste disposal, storm drainage, parks and public schools, there are other essential human support services provided within the City. These human support systems and services are inventoried and analyzed in this element of the Plan.

Police Service

The City of Sanibel provides local police services. On February 18, 1975, the Sanibel Police Department was formed. The Sanibel Police Department is located in a wing of the City Hall complex. In conjunction with the public assembly room, this wing (designed to withstand storm flooding and winds) operates as the control center for natural disaster response and operation. There are no detention facilities in the Police Department; all prisoners are transported to the Lee County Jail. Sanibel Police Department has state-of-the-art police equipment in its communication room and police vehicles.

Police responsibilities include the following: the protection of life, limb and property; enforcement of State and Federal laws and City ordinances; apprehension of offenders; general keeping of the peace; 24 hour per day police dispatch and traffic control. The Sanibel Police Department is a primary safety answering point (PSAP) and has implemented this emergency response program as part of the Lee County enhanced 9-1-1 system and in cooperation with other local providers of emergency services. The Sanibel Police Department has mutual

aid agreements with other local police departments. In addition, the Sanibel Emergency Management Plan (SEMP), under the control of the Police Department reporting directly to the City Manager, provides operational procedures for responding to emergency situations, including hurricane evacuation.

Fire Protection

The Sanibel Fire and Rescue District provides fire protection services within the City of Sanibel. This independent District operates in cooperation with City Administration, but is not part of the City's capital and operating budget. The service area of the Sanibel Fire and Rescue District coincides with the boundaries of the City of Sanibel plus a portion of the Causeway.

In 2005, the Sanibel Fire and Rescue District completed an addition to Sanibel-Captiva Road Station no. 2. In 2006, the District replaced Palm Ridge Road Station no. 1.

A training structure and a helicopter pad are part of the redeveloped Station no. 1. Emergency Medical Services also use Station no. 1.

The District continues to have an interest in having a Fire and Rescue station on the east end of the Island. This station could also house Emergency Medical Services, if Lee County EMS identifies the need.

The Fire Control District has paid personnel. The Fire Control District has a mutual aid program with the Captiva Fire and Rescue District for fire protection.

As of January 2011, the City of Sanibel was reclassified by the Insurance Service Office to a fire rating of 5, on a scale of 1 to 10 with 1 being the best rating, for fire insurance purposes.

Provisions of the Plan for Fire Protection

The Fire Control District and the Island Water Association should continue with their cooperative fire hydrant installation program with the objective of having a fire hydrant within five 500 feet of all developed property.

City Administration

The City Hall Complex, completed in 1983, may require additional administration space. A public works facility, located adjacent to this site, has met the operational needs for public works.

The off-Island facility for emergency operations and initial recovery may not be City-owned. The City may continue to arrange for and use existing space in appropriate off-Island locations for this activity. City personnel are assigned to the County Emergency Operation Center during a major storm event or other disaster.

The Sanibel Library, the Sanibel Historical Village and the Barrier Islands Group for the Arts are located at the City Hall site.

Provisions of the Plan for City Hall

Due to the significant amount of additional development at the City Hall site, a conceptual plan for the longer-term “build-out” use of the site should be developed.

Keep the City Hall property available for recovery operations following a natural disaster.

Library Services

The library on Sanibel was organized in 1962 by a citizen’s group and incorporated under Florida Statutes as a nonprofit organization.

A 19,000 square foot library was constructed next to the Sanibel City Hall in 1994. In 2004, a 10,000 square foot addition to the library was constructed, providing expanded computer services and multimedia materials. The local history section has been expanded.

In 2005, the Sanibel Library District was established and, in 2006, the initial Board of Directors was elected.

Power

The City of Sanibel receives electric power service from a Distribution Cooperative, Lee County Electric Cooperative (LCEC) who purchases power through wholesale power providers. The electric service is transmitted by overhead high voltage power lines that cross Pine Island Sound to the Sanibel substation on Sanibel-Captiva Road.

In 1999, the electric substation on Sanibel-Captiva Road was rebuilt and expanded. Electric power is distributed from the new 138 kilovolt substation located on Sanibel. Four main distribution feeders are strung aurally on the Island.

Provisions of the Plan for Electric Utility

1. For aesthetic reasons, all future electrical lines should be installed underground when the state-of-the-art makes it practical, reliable, readily repairable and economically feasible. When it becomes practical and economically feasible, the City and the power supplier should consider preparing plans to rebuild underground if a hurricane or other disaster destroys a substantial part of our overhead power distribution system so as to reduce vulnerability in the future.
2. All new local service and to-the-house lines will be required to be installed underground in new subdivisions when practical and economically feasible.
3. For aesthetic reasons, existing utility service should be placed underground where legally appropriate, practical, reliable, readily repairable and economically feasible.
4. In the event of a hurricane or other potential disaster, the City should work closely with the cooperative to keep electric service available as long as it is deemed safe; however, the electrical system should shut down in advance of a hurricane landfall to further encourage evacuation.
5. The City should arrange for a study of residential and commercial power rates charged by the cooperative and other suppliers, if deemed necessary.

6. The Lee County Electric Cooperative is encouraged to upgrade its existing lines and electrical systems to improve reliability and compatibility with adjoining and nearby land uses.
7. Encourage more efficient use of electrical energy.
8. The City is receptive to applications of new technologies to generate or conserve electricity, such as solar panels to heat swimming pool water; however, such apparatuses have to be designed, installed and used in a manner that is compatible with the character of the community and the neighborhood in which they are located.

Medical Facilities and Public Health

There are a number of health care professionals on Sanibel. For health care requiring hospitalization, or more intensive care than that which can be provided locally, Sanibel residents and visitors have access to several hospitals available in Lee County. These facilities are located approximately 30 to 90 minutes driving time from Sanibel when traffic is light.

There is and it is anticipated that there will continue to be ample medical care as well as hospital beds in Lee County to serve the medical needs of Sanibel residents. However, facilities for ambulatory (emergency) services and routine medical services can provide better availability for City residents when they are located on-Island.

Emergency medical assistance is provided by Lee County emergency medical technicians. Qualified technicians are available to handle medical emergencies and provide public ambulance service via air or road to nearby hospitals if required.

There is at least one ambulance on service 24 hours a day. A helicopter pad is available at the Palm Ridge Road Fire Station no. 1. Other facilities and locations for helicopter landings are also available on the Island.

Approval of the Heartsmart® Program, AED and other employee training, and defibrillators in emergency vehicles and public facilities have improved emergency response to medical emergencies. Defibrillators are in City Hall, the Public Works building, the Recreation Center, the Senior Center (Center 4 Life), the Library and the Barrier Island Group for the Arts. The saving of as many as four lives is attributed to improved response to medical emergencies.

There are a number of private nursing homes and one County nursing home located in the Fort Myers area.

Provisions of the Plan for Medical Facilities and Public Health

1. The City recognizes the need for state-of-the-art medical facilities and associated pharmacologic services to serve Island residents. The City shall support and encourage the provision and expansion of private and public health care facilities on the Island as needs arise.
 - It is important that facilities for routine medical services be located on the Island. On-Island facilities and services can better meet immediate care needs of the City's residents of all ages. Availability to routine medical services for City residents is improved by on-Island facilities and services.

- For emergency care, treatment during the "golden hour" is critical. Because of age and the length and quality of life of residents, it is a must that the population's emergency medical needs are met. As an Island, vulnerable by its geographic nature, it is important that facilities for ambulatory service, by both land and air, be maintained.

2. Public health continues to be a matter of vital concern on Sanibel. It is essential that City policy be formulated which not only conforms to State and County provisions for public health and preventive medicine, but exceeds those provisions and addresses the particular needs of the Island's residents, the Island environment, and special considerations regarding hurricane evacuation.
3. A comprehensive and environmentally sound water management plan for Lake Okeechobee and the resulting water releases from the Lake is critically needed to address the nutrient-rich water releases into the Caloosahatchee River and Estuary that have resulted in creation of toxic blue-green algae blooms and red drift algae outbreaks and that may well have contributed to a long-term trend of more frequent, more severe and longer duration destructive red tide events.

Education

Public School Facilities that are financed and administered by the Lee County School District, including The Sanibel School, are addressed in Section 3.3.8 Pubic Schools Facilities Element. In

addition to public schools (The Sanibel School), there are other educational programs available on Sanibel.

Pre-school and childcare facilities are provided by the private sector. The Children's Center of the Island has been operating at its present location for 35 years. The Sanibel Sea School provides educational programs.

Lands owned and managed for conservation purposes provide educational programs as an accessory and supportive use to their preservation efforts.

The Sanibel Library, the Bailey-Matthews Shell Museum, the Sanibel Community Association, the Barrier Island Group for the Arts, and numerous service organizations provide a variety of educational programs.

The City of Sanibel is conducive to educational pursuits that further disseminate and implement the Sanibel Plan.

Provisions of the Plan for Education

1. Public education of school children from Sanibel will continue to be financed and administered by the Lee County School District.
2. Coordinate with the Lee County School District, as prescribed in the interlocal agreement adopted pursuant to Florida Statutes, Section 163.3177 (12), on appropriate population and school enrollment projections, on infrastructure and planning and on the siting of new schools that may affect attaining Level of Service standards for public school facilities by the City of Sanibel.

3. The City should encourage the multiple use, and as the situation arises, the adaptive reuse of existing structures for educational purposes by being alert to this potential in the development permitting process.
4. Private education facilities locating on this barrier Island, in a coastal high-hazard zone, shall be small scale with a limited intensity of use that is compatible with surrounding land uses and the community as a whole.

Insect Control

In 1958, the Lee County Mosquito Control District was created to provide control of mosquitoes in most of Lee County, including Sanibel. Responsibility for suppressing mosquitoes is in the hands of the Board of Commissioners of the Lee County Mosquito Control District. Chapter 67-1630, Laws of Florida, created the Lee County Mosquito Control District and authorizes the Board to:

"do any and all things necessary for the control and elimination of all species of mosquitoes and other arthropods of public health importance . . ."

"The Board is authorized to use any and all mechanical, physical, chemical or biological control measures as the Board may deem necessary to accomplish the purposes of this chapter."

The District is governed by a board of six commissioners, who are elected on a nonpartisan basis to four-year terms. By law, one member of the board must reside on either Sanibel or Captiva Island. Activities of the District are coordinated closely with those of the Lee County Health Department.

The Lee County program, the first large-scale attempt to use biological controls in an organized mosquito abatement program, considers the potential for reducing overall pest mosquito populations. Cooperative work of this type assures the residents that the program carried out by the Lee County Mosquito Control District is constantly updated and that the benefits of new research are incorporated here, even as they are being developed.

Provisions for the Plan for Mosquito Control on Sanibel

An integrated pest management approach requires strict adherence to the following:

1. A consistent high water table in the interior wetlands should be maintained, in general, the higher the better, consistent with developed land uses. This will virtually eliminate salt marsh mosquito breeding in these areas.
2. Drainage patterns should be kept as natural as possible. The proposed improvements to the drainage system should be carried out in order to increase intra-basin flow. The drainage improvements will enable retention of a more consistent water level in the interior wetlands, thus exposing less area to the successful hatching of mosquito larvae.
3. A population of larvivorous fish should be maintained wherever possible on the Island.
4. Mosquitoes should be controlled in the larval stages whenever possible, generally keeping the Island free of biting adults. Larvicides should be chosen on the

basis of safety both to humans and wildlife and applied in a lawful manner.

5. Chemical control of adult mosquitoes should be kept to a minimum, consistent with acceptable control and lawful application.
6. Continued research should be encouraged which will lead to alternate additional methods of control, thereby avoiding dependence on a chemically oriented mosquito control program.

Telecommunication Devices

It is the intent of the City to provide City residents, businesses, visitors and public service agencies with access to the latest telecommunications services and technology within the context of and in a manner consistent with the *Sanibel Plan*, consistent with the Telecommunications Act of 1996 and any other lawful regulation passed pursuant to and in compliance with that act.

Provisions of the Plan for Telecommunication Devices

The standards and requirements for telecommunication devices are contained in the Land Development Code. These standards and requirements are intended to protect public safety and welfare by requiring adherence to development and construction standards which:

1. Minimize the threat to public safety
2. Protect public park, conservation and environmentally sensitive lands from both the physical and visual intrusion of telecommunications devices

3. Minimize the adverse visual effects of telecommunications devices from residential areas, from scenic roadways, from public view and from the waters and beaches surrounding Sanibel Island
4. Protect the Island's wildlife, including birds, from the threat posed by antennas and support structures
5. Ensure compliance with the City's dark sky policy consistent with the provision of telecommunications services

Goals, Objectives and Policies

Goal Statement

Provide adequate police services, fire protection, City administration, library services, power, medical facilities and public health, education and insect control services for residents and land uses in the City of Sanibel.

Objective 1

Ensure continued maintenance of an adequate level of service for these other human support systems.

Policy 1.1. Preserve and maintain existing facilities through implementation of proper maintenance and upkeep procedures.

Policy 1.2. Expand and add facilities as needed to provide adequate service.

Part 3.4.

Intergovernmental Coordination

The purpose of this part of the *Sanibel Plan* is to resolve incompatible goals, objectives and policies and development proposed in this Plan and to respond to the need for coordination processes and procedures with Local, County, Regional, State and Federal agencies.

In addition to the stated purpose of this Part of the *Sanibel Plan*, this element responds to the need for coordinating procedures with the public and private sector providers of human support systems.

This part of the *Sanibel Plan* establishes goals, objectives and Policies for intergovernmental coordination.

Section 3.4.1.

Intergovernmental Coordination

Goals, Objectives and Policies

Pursuant to Section 163.3177, Florida Statutes.

Background Discussion

This section of the *Sanibel Plan* establishes goals, objectives and policies for the implementation of the Plan in coordination with the plans and programs of Federal, State, Regional, County and Municipal units of government and with the public and private sector providers of human support systems.

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(6)(h) and (9)(h), Florida Statutes* are provided in this subsection.

Local Taxing Authorities and Intergovernmental Revenues

The City of Sanibel administers four *ad valorem* property tax levies: an operating levy, a voter-approved sewer debt levy, a voter-approved land acquisition levy, and a voter-approved recreation center levy. Each of these levies is established annually during the budget adoption process defined by *Section 200, Florida Statutes*.

In addition to the City of Sanibel, there are units of government and independent districts which provide services to the City and have authority to levy taxes against properties within the geographic boundaries of the City of Sanibel, but which do not have regulatory authority over the use of land. These units of government and independent districts are Lee County (a general and a capital levy), the Lee County School District (a local and a State levy), the Sanibel Fire and Rescue District, the Sanibel Public Library District, the West Coast Inland Navigation District, South Florida Water Management District (an operating and an Everglades Restoration Levy), the Lee County Mosquito Control District and the Hyacinth Control District.

In 2012, the City estimates that it will receive \$1.4 million in revenue from the Local Option Gas Tax. It is vitally important to the City of Sanibel that the City's share of the Local Option Gas Tax be preserved. It is also important to restore Causeway toll proceeds revenues and to replace revenues from the weigh station, as a funding source for road maintenance and improvements. The City has forgone approximately \$850,000 annually in revenue from Sanibel Causeway surplus toll revenues since February 2005. These intergovernmental revenues have

been an important source of funding available for road maintenance and improvements.

Implementation of the *Sanibel Plan*

The implementation of the *Sanibel Plan* depends on the coordination of a variety of public and private entities. A summary of the participants and procedures of this coordination is presented.

Safety

Operational procedures for response to natural disasters, including hurricane evacuation, are implemented by the Sanibel Emergency Management Plan. The Sanibel Emergency Management Plan is coordinated with Lee County's and Southwest Florida Regional Planning Council's hurricane plans. The City Manager has primary responsibility for coordination of natural disaster planning with the County and Region. The Sanibel Emergency Management Plan assigns operational responsibility for emergency situations.

In addition to coordination with County and Regional hurricane plans, the Sanibel Emergency Management Plan has established coordination mechanisms with area police departments, the Sanibel Fire and Rescue District and area fire departments and emergency services. The recovery section of the Sanibel Emergency Management Plan is consistent with Federal and State disaster relief programs.

Safety improvements to roads and shared use paths, in both County-owned and City-owned rights-of-way inside the City, are discussed in the Transportation Element of this Plan.

Preservation of Natural, Environmental, Economic and Scenic Resources

The U. S. Department of the Interior, Fish and Wildlife Service, which manages the J. N. "Ding" Darling National Wildlife Refuge, and the Sanibel-Captiva Conservation Foundation provide resource management for about two-thirds of the land area within the City of Sanibel. The City has maintained cooperative mechanisms with the Refuge and Foundation directed toward resource preservation.

To preserve natural resources, the following federal, state and regional agencies have land use review and environmental regulatory authority over specific activities:

- The U. S. Army Corps of Engineers
- The Florida Department of Environmental Protection
- The Florida Game and Freshwater Fish Commission
- The Florida Department of Economic Opportunity
- The Florida Department of State
- The South Florida Water Management District
- The Southwest Florida Regional Planning Council

The City Manager has primary responsibility for intergovernmental coordination with these Federal, State and Regional regulatory agencies and coordinates permitting for public and private development activities in the City of Sanibel that are under the jurisdiction of these agencies.

Human Support Systems

The provision of human support systems for the residents and visitors of the City of Sanibel is linked to cooperation with the private sector, Lee County, Regional agencies and the State of Florida. The following Federal, State, Regional, County and

private sector entities cooperate with the City of Sanibel in the provision of human support systems:

- The Island Water Association
- The Florida Department of Transportation
- The Lee County Department of Transportation and Engineering
- The Lee County Public Works Department
- The Lee County Department of Parks and Recreation
- The U.S. Department of the Interior: Fish and Wildlife Service
- The Sanibel-Captiva Conservation Foundation
- Clinic for Rehabilitation of Wildlife
- The Sanibel Library
- The Sanibel Community Association
- Barrier Island Group for the Arts
- The Bailey-Matthews Shell Museum
- The Beachview Country Club
- The Dunes Country Club
- The Lee County Electric Cooperative
- The Sanibel Fire and Rescue District
- Florida Department of Environmental Protection
- The Florida Department of Children and Families (County Health Department)
- Private health care providers, Community health care providers, Mental health care providers and Community hospitals
- The Lee County School District
- The Lee County Mosquito Control District
- Land line and cellular telephone services
- Telecommunications services
- Private waste haulers and recyclers

In the provision of human support systems within and supporting the City of Sanibel, the following State, Regional and County agencies have land use review and environmental regulatory authority over specific activities:

- The South Florida Water Management District
- The Florida Department of Transportation
- The Metropolitan Planning Organization
- The Lee County Department of Transportation and Engineering
- The Florida Department of Environmental Protection
- The Public Service Commission
- The Florida Department of Children and Families (County Health Department)

The City Manager has primary responsibility for coordination with State, Regional, County and private sector providers and regulators of human support systems and coordinates permitting for public and private development activities in the City of Sanibel that are under the jurisdiction of these agencies.

Capital Improvements

The coordination of facility locations and service delivery, as well as construction activities, contributes to the effective use of capital improvement funding. The City Manager has primary responsibility for the coordination of municipal capital improvement projects with capital improvement projects of Federal, State, Regional, County and private sector entities.

Land Use

The coordination of the *Sanibel Plan*, with the comprehensive plans of adjacent Municipalities, Lee County, the Southwest Florida Regional Planning Council and the State of Florida is

addressed in Section 1.4 (Coordination of Plan with Plans of Surrounding Areas) of the Plan.

The City Manager has primary responsibility for coordinating the *Sanibel Plan* with the comprehensive plans of adjacent municipalities, Lee County, the Southwest Florida Regional Planning Council and the State of Florida.

The City of Sanibel and Lee County have entered into an intergovernmental cooperative planning agreement to address any substantial change in zoning for land on Captiva or land located within the Summerlin Road Corridor (an area bordered on the north by Cypress Lake Drive, on the west by the Caloosahatchee River, on the south by San Carlos Bay and Estero Bay and on the east by Cleveland Avenue and Hendry Creek).

Charlotte Harbor Resource Planning and Management

Pursuant to Section 163.3177(4)(b), Florida Statutes.

In order to protect barrier islands, estuarine area and coastal wetlands in Southwest Florida, Charlotte Harbor, including its estuary and watershed, was declared an Area of Critical State Concern in 1975, pursuant to *Section 380, Florida Statutes*. In 1995, the Charlotte Harbor was recognized as an “estuary of national significance” and accepted into the National Estuary Program. The Charlotte Harbor Comprehensive Conservation and Management Plan was adopted in 2000.

The City supports the Program’s efforts to improve the environmental integrity of the Charlotte Harbor study area, to preserve, restore and enhance seagrass beds, to reduce point and non-point sources of pollution, and to provide the proper freshwater inflow to the estuary to ensure a balanced and productive ecosystem.

Coordination of permitting with State or Federal Agencies

The City shall no longer require, as a condition of processing or issuing a development permit, that an applicant obtain a permit or approval from any State or Federal agency unless the agency has issued a final agency action that denies the Federal or State permit before the City takes final action on the application. Issuance of a development permit by the City does not, in any way, create any right on the part of the applicant to obtain a permit from a State or Federal agency and does not create any liability on the part of the City for issuance of the permit, if the applicant fails to obtain requisite approvals or fulfill the obligations imposed by a State or Federal agency or undertakes actions that result in a violation of State or Federal law.

The City will attempt to inform applicants for development permits as to the State and Federal permits that may be required for the proposed development. The City may also include, as a condition of the development permit, that all other applicable State and Federal permits be obtained before commencement of the development.

Achievements in Intergovernmental Coordination

The City has worked toward and attained several significant successes in intergovernmental coordination. Highlights of these achievements are presented in the following text.

Hurricane Evacuation and Recovery Efforts

The coordinated and collaborated efforts of other units of local government with the City during the recovery from Hurricane Charley was expected and delivered. The City of Sanibel, the Sanibel Fire and Rescue District, the Island Water Association, U. S. Fish and Wildlife Service and the Lee County Electric

Cooperative worked together on a daily basis and cooperated fully on the community's recovery from the damage from Hurricane Charley. The effectiveness of the initial recovery efforts following the storm was enhanced by the cooperation and collaboration of many other units of government, including the Federal Emergency Management Administration, U.S. Department of Forestry, U.S. Customs, the National Guard, Florida Department of Law Enforcement, Florida Fish and Wildlife Conservation Commission, Florida Marine Patrol and Lee County Emergency Medical Service.

Planning and Siting of New Schools

An interlocal agreement with Lee County School District, addressing the planning and siting of new schools on Sanibel, was a model of compliance with Florida Statutes, Section 163.3191(2)(k). The City's working relationship with the Lee County School District, through an interlocal agreement, continues to be an essential component of the successful implementation of the City's Master Parks and Recreation Plan. A revised interlocal agreement for school concurrency was adopted in 2008 to comply with *Florida Statutes, Section 163.3177*.

The Public Schools Facilities Element was added to the *Sanibel Plan* to meet State requirements that have subsequently been repealed. However, many components of the Public Schools Facilities Element are also required by the Interlocal Agreement between the City and the Lee County School District. Following the 2012 evaluation of the *Sanibel Plan*, the City intends to discuss revisions to the Interlocal Agreement with the Lee County School Board.

Parks and Recreation

The Lee County Department of Parks and Recreation also contributes to the City's Parks and Recreation Program. Another interlocal agreement with Lee County addresses Bowman's Beach. This interlocal agreement is important to the City of Sanibel for the successful implementation of the Recreation and Open Space Element of the *Sanibel Plan*.

Library Services

The City's working relationship with the Sanibel Public Library resulted in the library locating adjacent to City Hall. Some parking frequently used by the library is located on City Hall property.

Land Conservation: Natural Resources

The City's relationship with the Fish and Wildlife Service of the United States Department of the Interior at the J. N. "Ding" Darling National Wildlife Refuge has resulted in the designation of the City as a "Gateway Community" recognizing the accomplishments of the successful relationship between the City and this Federal land use. This successful relationship promotes the comprehensive management of natural systems on Sanibel Island.

The Sanibel-Captiva Conservation Foundation's relationship with the City coordinates the comprehensive management of natural systems and promotes the acquisition and restoration of environmentally sensitive lands.

Water Quality

An interlocal agreement with Lee County and the Captiva Erosion Prevention District to open Blind Pass and to connect Clam Bayou to Dinkins Bayou to improve water quality in these bodies of water was developed as part of an intergovernmental effort to restore and enhance natural resources.

Lee County and other Local governments in the Region share the City's concern about the impact of water releases from Lake Okeechobee on the Pine Island Aquatic Preserve.

Roads and Transit

An interlocal agreement with Lee County addresses Periwinkle Way and Sanibel-Captiva Road. This interlocal agreement is important to the City of Sanibel for the successful implementation of the Transportation and Land Use Elements of the *Sanibel Plan*.

Remaining Challenges in Intergovernmental Coordination

Day-to-day cooperation remains a challenge requiring continued effort. Although it is important to recognize successes in intergovernmental coordination, there are challenges remaining. Identification of these challenges is presented in the following text.

Water Quality

There is a critical need to improve policies controlling water releases from Lake Okeechobee in order to maintain the water quality of coastal waters and the estuaries of Southwest Florida. It is vitally important that the United States Environmental Protection Agency and the State of Florida implement the Total

Maximum Daily Loads (TMDLs) for pollutants provision of the Federal Clean Water Act.

Pollutants have had a dramatic and unacceptable impact on the quality of surface waters surrounding the City. Sanibel is susceptible to over-nutrication through runoff from development. Although the City has put a significant effort and investment into wastewater treatment facilities, including a collection system for virtually all land uses within the City, efforts and investments to improve water quality have not been as extensive in other areas within the watershed of the Caloosahatchee River. Continued surface water runoff within the watershed of the Caloosahatchee River containing non-point source pollution contributes to the further degradation of the quality of the waters surrounding the City. However, this degradation of waters surrounding the City is exacerbated by the water releases from Lake Okeechobee exceeding TMDLs for pollutants.

Cooperation from the United States Army Corps of Engineers, the Florida Department of Environmental Protection, and the South Florida Water Management District is essential to adequately address this greatest of regional challenges for intergovernmental coordination.

Land Conservation: Natural Resources

About one third of the linear mileage of beaches in Lee County accessible by car is in the City of Sanibel. Demand for the beaches is increasing. The supply of beaches is not. The maintenance of a natural beach as a vital natural resource is important to the community's quality of life and the economy of the City. For a variety of environmental, social and economic reasons, it is important that the carrying capacity of the beach for wildlife is not diminished.

The preservation of Sanibel's natural beaches, wetlands and other environmentally sensitive lands makes it important for the City to take a proactive role in informing not only Sanibel residents, but Lee County, State and Federal decision-makers regarding the value of the City of Sanibel's natural resources to the economy and culture of the Region.

The preservation of Sanibel's natural beaches is threatened by the degradation of the quality of the waters surrounding Sanibel. Since October 27, 2005, nutrient-rich waters have resulted in the growth of toxic blue-green algae blooms and red drift algae outbreaks. These blooms have been associated with fish kills, impacts on shellfish, destruction of seagrass beds, mangroves and breeding grounds for many fish species, and impacts on recreational and commercial fishing. This nutrient runoff may have also contributed to a perceived long-term trend of more frequent, more severe and longer duration of destructive red tide events and severe impacts to the J. N. "Ding" Darling National Wildlife Refuge and aquatic preserves.

These impacts could lead to serious, and potentially irreversible, degradation in the quality of the waters surrounding Sanibel. The preservation of Sanibel's natural beaches provides another important reason to improve policies controlling water releases from Lake Okeechobee and pollution runoff from within the Caloosahatchee River Basin.

Roads and Transit

A major challenge arose in implementing the provision (no. 3 in the Plan for Intergovernmental Coordination) to "cooperate with appropriate authorities through appropriate means to secure needed improvements to the Bridge and Causeway facility between the mainland and Sanibel, now owned and operated by Lee County". During that process, the interlocal agreement

with Lee County addressing the Sanibel Causeway was ruled invalid, in part, by the Circuit Court. This action presented a potential threat to one of the more effective means available for intergovernmental coordination, including conflict resolutions, between municipal and county governments. The City continued to look for options and alternative approaches to improve future coordination with Lee County on issues related to the Sanibel Causeway. In this effort, the City entered into a stipulated settlement agreement with Lee County regarding the lawsuit filed against Lee County over the interlocal agreement pertaining to the Sanibel Causeway.

This intergovernmental coordination challenge potentially jeopardized revenues used to implement the *Sanibel Plan*. The *Sanibel Plan* includes a policy (no. 4.3 in the Capital Improvements Element) to "maintain the interlocal agreement with Lee County for the disbursement of Causeway surplus toll revenue".

In improving the City's working relationship with Lee County on our shared interest in the Sanibel Causeway, the City will attempt to foster better communication and better define the rights and obligations of both parties.

It is important to the City that the City's share of the Local Option Gas Tax be preserved.

The City Council adopted a position statement on December 6, 2005, addressing the proposal by Lee County to establish an Independent Transit Authority. That statement presents the criteria that the City of Sanibel will consider for its participation in a County or Regional Transit Authority. The position statement provides the basic guidelines for assessing the potential composition, structure and funding mechanisms of a Transit Authority and the associated system operations and

transit vehicle service and design characteristics for compatibility with Sanibel's environment, character and transportation system.

The City should continue its efforts to ensure that the system operations and transit vehicle service and design characteristics for implementing the Paul S. Sarbanes Transit in Parks Program (formerly Alternative Transportation in Parks and Public Lands) project for the federal wildlife refuge, involving federal and regional agencies, are compatible with Sanibel's environment, character and transportation system.

Parks and Recreation

There remains a need to coordinate with Lee County on the use of a near-Island Regional recreation site as identified in the *Sanibel Plan*. A policy of the *Sanibel Plan* (Section 3.4.1 Intergovernmental Coordination, Policy 1.6) calls for development of "an agreement with Lee County to ensure that use of the Sanibel Causeway and Causeway islands is compatible with the community character of the City of Sanibel".

Hurricane Evacuation and Recovery Efforts (Zoning and Land Use)

There is an interlocal agreement with Lee County addressing reductions in hurricane evacuation times associated with zoning changes and developments of County impact in the Summerlin Road corridor and on Captiva Island. In assessing the impacts of near-Island development activities, the City has encouraged better controls on density, as the means to ensure adequate hurricane evacuation capabilities, rather than improvements to the infrastructure.

Conclusion

The City of Sanibel's foremost concern for intergovernmental coordination is for the safe evacuation and shelter of its residents in the event of a hurricane threat or other natural disaster. A regionally coordinated program to address the identified deficiencies in adequate off-Island evacuation routes and shelters is a critical challenge requiring the cooperation of all local governments in Southwest Florida.

An intergovernmental coordination issue important to the City of Sanibel is the need to address affordable housing needs. It is evident from an analysis of the existing housing stock and the vacant developable land inventory of the City of Sanibel that the private sector is unable, without major City support, to provide housing on Sanibel that is affordable to very low, low and moderate income households. In fact, because of the high cost of housing and land, assistance programs are generally unable to cost-effectively bridge the gap between the money available for housing by very low, low, and moderate income households and the high cost of housing in the City of Sanibel. Since housing is a Regional resource, the City of Sanibel intends to participate with other Local governments through intergovernmental coordination activities to address, on a county-wide and regional basis, affordable housing needs.

The City continues to provide for Sanibel-determined affordable housing needs through its Below Market Rate Housing Program.

Continued effort must be made with Lee County and the Cities of Fort Myers, Fort Myers Beach, Cape Coral and Bonita Springs to ensure technical coordination of comprehensive plans and to instill a spirit of coordination and cooperation in inter-governmental policies.

Provisions of the Plan for Intergovernmental Coordination

1. Continue and improve interlocal cooperation with Lee County to ensure technical coordination of comprehensive plans and attempt to instill a spirit of coordination and cooperation in intergovernmental policies.
2. Continue coordination of Sanibel hurricane evacuation and warning plans with Lee County, its Cities, and the Southwest Florida Regional Planning Council.
3. Cooperate with proper authorities, through appropriate means, to secure the adequate operation and maintenance to the Bridge and Causeway facility between the mainland and Sanibel, now owned and operated by Lee County.
4. Encourage Lee County to develop criteria by which to review the appropriateness of land use decision making, particularly on Captiva and in the Summerlin Road corridor, with respect to its impact on Sanibel.
5. Work with State and Lee County officials to help ensure that costs incurred by Sanibel residents for Lee County taxation are equivalent to the benefits Sanibel residents receive.
6. Work with Lee County and the Town of Fort Myers Beach toward the public acquisition or conservation of vital estuaries and environmentally sensitive lands along the mainland coastline in proximity to Sanibel and Estero Islands.
7. Identify all Regional and State resources and facilities identified in the State Comprehensive Plan and the Southwest Florida Strategic Regional Policy Plan.
8. Development occurring in the City of Sanibel cannot be allowed to significantly negatively impact, within the framework of the *Sanibel Plan*, the following local resources which could be significantly impacted by development located within the City of Sanibel, such as:
 - Sanibel's natural beaches (the Gulf Beach Zone)
 - The J. N. "Ding" Darling National Wildlife Refuge
 - Sanibel Captiva Conservation Foundation, Inc. lands
 - Hurricane evacuation routes and hurricane shelters
 - The near-shore coastline of the Gulf of Mexico, San Carlos Bay and Pine Island Sound
 - The Pine Island Sound Aquatic Preserve
 - Sanibel's shared use paths
9. Development occurring outside the City of Sanibel cannot be allowed to significantly negatively impact, within the framework of the *Sanibel Plan*, the following local resources which could be significantly impacted by development outside the City of Sanibel, such as:
 - Sanibel's natural beaches (the Gulf Beach Zone)

- The J. N. “Ding” Darling National Wildlife Refuge
 - Hurricane evacuation routes
 - The near-shore coastline of the Gulf of Mexico, San Carlos Bay and Pine Island Sound
 - The Pine Island Sound Aquatic Preserve
10. Development occurring outside the City of Sanibel, in the following jurisdictions and areas, cannot be allowed to significantly negatively impact, within the framework of the *Sanibel Plan*, community characteristics and infrastructure, which could be impacted by development within another of the, such as:
- Captiva
 - Punta Rassa
 - Nearby mainland estuaries
 - The Summerlin Road corridor
 - The Sanibel Causeway

For example, it is important to the City, as well as to coastal Lee County, that existing employee housing at South Seas Resort on Captiva Island be retained. The replacement of employee housing units within the density cap for Captiva Island that is administered by Lee County with resort units would have a significant negative impact on the City. Relocation of a segment of the Captiva Island workforce to the mainland could likely result in an increase in the number of daily commuter trips through the City.

11. Determine if development proposals would have significant negative impacts on identified resources,

facilities or community characteristics and attempt to mitigate such impacts.

12. Establish a dispute resolution process for bringing to closure, in a timely manner, the resolution of issues that would have impacts on other Local governments or identified State and Regional resources or facilities. The dispute resolution process shall incorporate the dispute resolution process of the Southwest Florida Regional Planning Council established pursuant to Section 186.509, Florida Statutes.
13. Transmit to the Department of Economic Opportunity a certified copy of every development order and accompanying supporting documentation for developments that meet or exceed the thresholds established by *Section 380.0651, Florida Statutes* and any amended development orders.

Goals, Objectives and Policies

Goal Statement

Maintain and establish coordination among governmental, public and private entities

- to facilitate the delivery of services
- to effectively conserve and use available resources
- to implement the *Sanibel Plan*.

Objective 1

Coordinate implementation of the *Sanibel Plan*, on a matter of mutual interest, with the comprehensive plans of:

- The City of Bonita Springs
- The City of Cape Coral
- The City of Fort Myers
- The Town of Fort Myers Beach
- Lee County
- The Southwest Florida Regional Planning Council
- The State of Florida

Policy 1.1. Maintain the Intergovernmental Cooperative Planning Agreement with Lee County for Captiva Island and the area along the Summerlin Road corridor.

Policy 1.2. If the City is unable to meet Sanibel-determined affordable housing needs on-Island, through its Below Market Rate Housing program, the City will request that Lee County incorporate the unmet need in the County's affordable housing program.

Policy 1.3. Through County, Regional, State and Federal agencies, pursue adequate off-Island hurricane evacuation routes and shelters.

Policy 1.4. Encourage Lee County to operate and maintain their Bridge and Causeway facility that runs between the mainland and Sanibel to satisfy Sanibel's long-term need for an evacuation route to the mainland and a recovery route from the mainland. It is important to keep the bottom of the road bed for the bridges of the Sanibel Causeway elevated above the level of the anticipated storm surge of a Category 3 hurricane and to

keep the bridges of sufficient width to permit motor vehicle traffic to bypass disabled vehicles.

Through continued intergovernmental coordination, the City will work with the County to promote the long-term maintenance of this vital transportation facility. The City will review the County's bridge inspection and maintenance reports. The City will also examine any inspection reports responding to natural or human-caused events that may affect the structural integrity of the facility, in order to identify appropriate actions.

Policy 1.5. In cooperation with Lee County, develop an interlocal agreement to develop and implement a plan to operationally provide two lanes of outbound evacuation traffic across the Sanibel Causeway as a means of reducing evacuation clearance times.

Policy 1.6. Develop an agreement with Lee County that ensures that use of the Sanibel Causeway and Causeway islands is compatible with the community character of the City of Sanibel.

Policy 1.7. Develop an agreement with the Captiva Erosion Prevention District that ensures that there will be no negative impacts to the Sanibel shoreline associated with any Captiva Island beach preservation projects.

Policy 1.8. Seek creation of jobs and job training by contributing to the efforts of other jurisdictions and agencies in the region.

Policy 1.9. Continue to assist in updating of the Southwest Florida Regional Strategic Policy Plan.

Policy 1.10. Incorporate regulations into the Land Development Code that further the attainment of the objectives of the Southwest Florida Regional Strategic Policy Plan and the State of Florida Comprehensive Plan when consistent with the objectives and interests of the City of Sanibel.

Objective 2

Ensure that implementation of the Sanibel Plan is coordinated with the plans and programs of:

- The U.S. Department of the Interior: Fish and Wildlife Service
- The J. N. “Ding” Darling National Wildlife Refuge
- The Sanibel-Captiva Conservation Foundation
- Lee County
- The Lee County School District Board
- The Island Water Association
- The Florida Department of Transportation
- The Florida Department of Children and Families
- The Sanibel Fire and Rescue District
- Other providers of sites, facilities and services (human support systems) not having regulatory authority over the use of land

Policy 2.1. Support implementation of the plans and programs of public and private providers of human support systems in a manner consistent with the objectives of the *Sanibel Plan* by requiring coordination with public and private providers, prior to the City’s authorizing commencement of development activities.

Policy 2.2. Maintain the interlocal cooperative agreement with Lee County for the operation of Bowman’s Beach Park.

Policy 2.3. Maintain the interlocal agreement with the Lee County School District for the shared operation of the recreation complex.

Policy 2.4. Maintain and implement the interlocal agreement for school concurrency with the Lee County School District, including collaboration on population and school enrollment projections for Sanibel; infrastructure needs for The Sanibel School and planning and siting of new schools that may affect the City attaining Level of Service standards for Public School Facilities.

Objective 3

Ensure that implementation of the *Sanibel Plan* is coordinated with the programs and permitting requirements of:

- The United States Army Corps of Engineers
- The Florida Department of Environmental Protection
- The Florida Department of Transportation
- The Florida Department of Economic Opportunity
- The Florida Department of Children and Families
- The Florida Public Service Commission
- The Charlotte Harbor National Estuary Program
- The South Florida Water Management District
- The Southwest Florida Regional Planning Council
- The Lee County Metropolitan Planning Organization
- The Lee County Department of Health
- Other agencies with land use or regulatory authority for the conservation and use of facilities and resources before commencement of development

Policy 3.1. Periodically coordinate with representatives of Federal, State, Regional and Local agencies that have regulatory authority in the City, and periodically review those agencies’ written rules in order to keep up-to-date

and informed on how other agencies' regulatory activities affect implementation of the *Sanibel Plan*.

Policy 3.2. Ensure that development activities that require permits from State, Regional and County regulatory authorities obtain applicable permits and submit copies to the City before commencement of the development.

Objective 4

Maintain coordination mechanisms to ensure that full consideration is given to the impacts of development permitted by the *Sanibel Plan* upon adjacent Municipalities, the County, the Region and the State.

Policy 4.1. Pursuant to Chapter 9J-11 of the Florida Administrative Code, consider comments, objections and recommendations of:

- The Florida Department of Economic Opportunity
- The Southwest Florida Regional Planning Council
- Lee County
- The Florida Department of Environmental Protection
- The Florida Department of Transportation
- The South Florida Water Management District
- The Florida Department of State
- The Florida Game and Freshwater Fish Commission

Policy 4.2. Resolve conflicts with Lee County, the City of Fort Myers, the City of Cape Coral, the City of Bonita Springs and the Town of Fort Myers Beach through the Southwest Florida Regional Planning Council's informal mediation process.

Policy 4.3. For the purpose of improving attainment of the objectives of the *Sanibel Plan*, consider the expansion of the corporate limits of the City of Sanibel on State submerged lands and the Sanibel Causeway. Coordinate this activity with appropriate State, Regional and County agencies.

Objective 5

In establishing level of service standards for public facilities, with a State, Regional, or County entity having operational and maintenance responsibility for such facilities or with the Lee County School District, ensure that the level of service standards in the *Sanibel Plan* are coordinated with the standards of the appropriate governmental entity.

Policy 5.1. Level of service standards for public facilities, are to be coordinated with level of service standards of State, Regional and County governmental entities having operational and maintenance responsibility for the facility. Level of service standards for public school facilities, are to be coordinated with level of service standards defined by the City of Sanibel and the Lee County School District in the interlocal agreement for school concurrency.

Section 3.4.2.

Effect of Plan on Adjacent Areas

Pursuant to Section 163.3177(4)(a), Florida Statutes.

The greatest effect that the *Sanibel Plan* has had on adjacent areas was in reducing the amount and pace of growth that was projected for Sanibel within Lee County's Comprehensive Plan of 1973.

Aside from the *Sanibel Plan's* effect on the amount and rate of growth on the Island, little of the *Sanibel Plan* has negatively affected any other parts of Lee County. However, subsequent issues, policy decisions and studies have had effects upon other areas outside of the jurisdiction of the City of Sanibel.

Hurricane Evacuation

The City of Sanibel's policy, as set forth in the Hurricane Safety Element of this Plan, that the City should limit and manage growth so that the population on the Island when a hurricane warning is issued will not exceed evacuation and off-Island refuge capacity of the area, has minimized the City's impact on evacuating mainland populations. An improved warning system put in place by the County, with technical coordination and assistance from the City of Sanibel, plus provisions for traffic control and restrictions placed on Causeway access during a hurricane evacuation has also reduced potential conflicts and untimely actions that might further jeopardize human safety.

Hurricane evacuation is further discussed in the Hurricane Safety Element, Section 3.1.1, of this Plan.

Public Facilities

The City and the IWA have worked together to develop a plan for the adequate supply of potable water. As a result of the strides made in the Island's potable water supply capabilities, the City of Sanibel has had a positive effect on adjacent areas by eliminating the City's dependence on receiving water from freshwater aquifers on the mainland through the Pine Island Water Association. The potable water supply is further discussed in the Water Supply Element, Section 3.3.2, of this Plan.

Transportation facilities, specifically roadways, link Captiva Island to the City of Sanibel and the City of Sanibel to the rest of Lee County. A significant number of vehicle trips are generated by the land uses along the arterial roads and collector streets and the local roads that access the major roadways in the City of Sanibel and on Captiva Island. However, the major factor affecting traffic congestion in the McGregor Boulevard / Summerlin Road corridor are the day trips to Sanibel and Captiva.

Water reclamation (wastewater treatment) facilities serve virtually all land uses in the City of Sanibel. This public facility provides a beneficial effect on the quality of groundwater and surface waters in the City of Sanibel on the waters surrounding the Island.

Solid Waste Disposal facilities used by the City are provided outside the jurisdiction of the City of Sanibel. The City's contribution to the solid waste disposal needs of Lee County represent about 2 percent of the total need for the County.

Storm Drainage facilities built within the City are provided and maintained to protect water quality as well as to prevent

surface water flooding. Since the City of Sanibel is an island, there is no appreciable effect on the surface water management in any surrounding and nearby jurisdictions.

Recreation facilities are provided for the resident and seasonal population of the City within the City of Sanibel. Except for regional facilities providing unique components, the City provides for all of its recreational needs on the Island.

General Considerations

The City of Sanibel recognizes a responsibility to make provisions for families and individuals wishing to live and work within its Municipal boundaries, providing that satisfaction of this goal does not pose a threat to the health, safety and welfare of the residents. It is also recognized that Lee County as an entity can better accommodate major population growth in areas other than Sanibel at less risk to the public. It has already been pointed out that Sanibel represents both a high risk and high cost area for developments. Therefore, the City's first responsibility is to provide for the health, safety and welfare of the existing population and to accommodate future growth within the constraints of public responsibility.

The people of Captiva share with the people of Sanibel a common freshwater resource and a common problem of hurricane safety. The elements of this Plan in regard to these and other issues have taken into account the City's vital relationship to the health, safety and welfare of the people of Captiva.

Slower, less intensive urbanization on Sanibel is consistent with the goals of the Southwest Florida Regional Planning Council, which is attempting to coordinate growth in the Region. The *Sanibel Plan* has been coordinated with the Southwest Florida

Regional Strategic Policy Plan, the Lee Plan and the Charlotte Harbor Comprehensive Conservation and Management Plan.

Part 3.5.

Capital Improvements

The purpose of this part of the *Sanibel Plan* is to ensure the economic feasibility of the Plan. This part of the *Sanibel Plan* establishes goals, objectives and policies for capital improvements.

Section 3.5.1.

Capital Improvements

Goals, Objectives and Policies

Pursuant to Section 163.3177, Florida Statutes.

Background Discussion

The purpose of the Capital Improvements Element is:

- To evaluate the need for public facilities, for each type of public facility, as identified in the *Sanibel Plan*
- To estimate the cost of improvements for which the City of Sanibel has fiscal responsibility
- To analyze the City of Sanibel's fiscal capability to finance and construct improvements
- To adopt financial policies to guide the funding of improvements
- To schedule the funding and construction of improvements in a manner which ensures that public

facilities are provided, when required, based on needs identified in this Plan

For the purpose of this element, needed capital improvements or capital improvement deficiencies, are defined as those capital improvements required to achieve and maintain adopted level of service standards for public facilities established in Part 3.3 Human Support Systems of the Plan.

The data and analyses of this element of the *Sanibel Plan*, pursuant to *Section 163.3177(3), Florida Statutes*, are provided in the annual review of the Capital Improvements Element of the *Sanibel Plan* and related supporting documents.

The City of Sanibel currently prepares a Five-Year Capital Improvement Program and an annual capital budget. The City's Capital Improvement Program, distinct from this Capital Improvements Element, is to be consistent with the Capital Improvements Element. The Capital Improvement Program is to reflect the goals, objectives and policies of the Capital Improvements Element and its implementation strategy.

Because of the City's successes in avoiding the occurrence of deficiencies in public facilities, implementation of level of service standards has not significantly impacted the City's Capital Improvement Program.

Any projects from the Five-Year Schedule of Capital Improvements (those public facilities needed to maintain or attain adopted level of service standards for public facilities) established in this Plan, are to be incorporated into the City's Capital Improvement Program.

Currently, well over 90 percent of the residential and commercial sectors of the Future Land Use Map are developed

or located in or adjacent to developed and serviced areas. In response to Sanibel's growth into a mature stage of its future land use, local practices for capital improvements have emphasized correcting past deficiencies and improving current service. With the exception of completion of the final phases of the collection system for the Sanibel Sewer System, there is virtually no need to expand the service areas of public facilities (human support systems).

The Florida Legislature mandates that local governments plan for the availability of some public facilities and services to support development concurrent with the impacts of that development. This Capital Improvement Element complies with this mandate.

This section of the *Sanibel Plan* establishes goals, objectives and policies for capital improvements, particularly those capital improvements required to attain and maintain minimum level of service standards for municipally provided public facilities, established in Part 3.3 (Human Support Systems) of the Plan.

The State of Florida requires that level of service standards for some public facilities (potable water wastewater treatment, drainage, and solid waste disposal) be included in comprehensive land use plans. These level of service standards are established to ensure that adequate facility capacity will be maintained and provided for existing and future development.

Level of service standards are established for the following public facilities (including potable water delivery which is provided by the private sector, public schools which are provided by the Lee County School District and solid waste disposal facilities which are provided by Lee County):

- Roadways in the Transportation Element (See Section 3.3.3)
- Recreation facilities in the Recreation and Open Space Element (See Section 3.3.7)
- Drainage facilities in the Storm Drainage Element (See Section 3.3.6)
- Wastewater treatment facilities in the Wastewater Treatment (Water Reclamation) Element (See Section 3.3.4)
- Public schools in the Public Schools Facilities Element (See Section 3.3.8.)
- Potable water treatment facilities in the Water Supply Element (See Section 3.3.2)
- Solid waste facilities in the Solid Waste and Recycling Element (See Section 3.3.5)

Level of service standards indicate the acceptable capacity per unit of demand for each public facility. These level of service standards are to be used in the issuance of development orders and permits.

The City of Sanibel has been successful in providing public facilities in advance of the occurrence of deficiencies in the adopted level of service for these facilities. From 1990 through 2012, analysis for this element concludes that there are no capital improvement projects needed to attain or maintain the adopted level of service standards for public facilities.

Any municipally provided facilities that would be needed to attain compliance with adopted level of service standards would be included in the Five-Year Schedule of Capital Improvements

in Section 3. 5. 2 Implementation, Monitoring and Evaluation of the Plan. There are none.

Any projects that would be needed to attain adopted level of service standards from the Five-Year Schedule of Capital Improvements would also be included in the City's Capital Improvement Program. The City's Capital Improvement Program also includes other capital projects; those not needed to attain minimum level of service standards.

When extensively revised in 1997, the *Sanibel Plan* concluded that the City of Sanibel has been providing public facilities and utilities in advance of the occurrence of deficiencies in the adopted level of service for these facilities. In its annual reviews of the Capital Improvements Element of the *Sanibel Plan*, the Planning Commission's findings continue to validate that conclusion.

An analysis of capital improvement needs and funding is provided in this background discussion, the annual reviews of the Capital Improvements Element of the *Sanibel Plan* and in supporting documents.

It is important to note that the City has essentially reached "build-out". The City is in a redevelopment phase. The provision of human support systems will focus on maintenance and upgrades of existing public facilities.

Public Facilities and Utilities Provided by the City of Sanibel

Although level of service standards for public facilities and utilities have been attained, the City continues to make significant improvements in public facilities and utilities provided by the municipality.

Roadways

Over the past 20 years, the City has made improvements to some roadways to improve drainage and renew the surface of the road and some intersections. New sections have been added to the City's shared use path system: other sections have been reconstructed to separate the path from the paralleling roadway. Capital improvement expenditures for road projects since 2007 total \$3.5 million. An additional \$3.6 million was spent during this time frame to maintain the City's roadways. The City's Five-Year Capital Improvement Program (Fiscal Year 2013 through 2017) identified \$3.6 million for road projects and an additional \$3.5 million for maintenance of the roadways is included in the Public Works maintenance budget.

Road impact fees provide partial funding for capacity enhancements for existing roadways and shared use paths and for building new shared use paths. For the past years, with the City approaching build-out, collections from road impact fees have been decreasing. Impact fees cannot be used for roadway maintenance.

Since 2005, Local Option Gas Tax revenue had been the primary source of funding road improvements and maintenance. It is vitally important to the continued maintenance of existing roadways and shared use paths that the City's share of the Local Option Gas Tax be preserved.

Ad valorem taxes and non-*ad valorem* taxes, such as the re-establishment of net toll proceeds from the Sanibel Causeway, can provide a secondary source of funding roadway maintenance and improvements. It is unacceptable for these inter-governmental revenues, so important for continued road improvements and maintenance, to be lost.

Prior to 2005, the City received 21 percent of surplus toll proceeds from the Sanibel Causeway from Lee County. However, with the settlement of a lawsuit between the City and the County, this revenue source will not be available until approximately 2017. City revenues from Causeway surplus revenues averaged about \$800,000 per year.

The conditions of peak-season, peak-hour flows at the intersection of Periwinkle Way and Causeway Boulevard have changed since completion of the replacement bridges on the Sanibel Causeway. The extent of congestion at this intersection has generally been reduced. At this time, a study of possible improvements to this intersection has not been included in the City's Five-Year Capital Improvement Program. The *Sanibel Plan* prohibits the widening of roadway segments but provides for capacity enhancement/operational improvements to intersections; however, improvements to this intersection are not required to attain the adopted level of service standard for the roadway.

The implementation of a Master Plan for Shared Use Paths will require both land acquisitions and capital improvements. Only the initial phase of implementation is funded.

Water Reclamation (Wastewater Treatment) Facilities

Since 2007, the City has spent \$2 million on the capital improvement of the Sanibel Sewer System. These improvements were financed through assessments.

The treatment capacity of the Donax Water Reclamation Plant is 2.375 million gallons per day. There are no identified needs for expanding the capacity of the treatment plant.

The collection system has been extended into new service areas with only the construction of the final phase remaining. It is projected that \$1.3 million will complete the expansion of Sanibel Sewer System.

The final phase of the collection system expansion adds 100 connections for land uses that are relatively remote from existing service. It may be that all components of this small phase will not be completed if the cost is prohibitive. Completion of the several small components of this final phase may take years to complete.

A reuse transmission line between the Donax Plant and the Wulfert Water Reclamation Plant connects both plants to the Island Water Association's injection well at the Reverse Osmosis Water Treatment Plant site.

Stormwater Drainage Systems

Since 1995, the Surface Water Management Plan for the Freshwater Management Area of the Sanibel River has been implemented. The weirs that influence the elevation of the water table and the culverts that influence the flow of surface water have been reconstructed. The capital improvement expenditures for this project totaled \$1.2 million. The City's Public Works maintenance budget (Fiscal Year 2013 through 2017) includes \$1 million for maintenance of the City's drainage systems. General Fund revenue, both *ad valorem* and non-*ad valorem*, is the primary source of funding for improvements to and maintenance of the City's stormwater management systems.

The City's surface water management system is in place and adequate to serve existing and remaining development.

Recreation Facilities

Since 2005, capital improvements expenditures for recreational facilities total approximately \$15 million. The City's Five-Year Capital Improvement Program includes \$200,000 to match a \$200,000 grant from FRDAP for new recreational facility projects. General Fund revenue, both *ad valorem* and non-*ad valorem*, is the primary source of funding recreational facilities and grants have been an important secondary funding source.

A *Master Parks and Recreation Plan*, adopted in 2002, identifies the recreation facilities needed by the current population and the projected population at "build-out". These recreational facilities needs were used to update the level of service standards for recreational facilities.

The redevelopment of the City of Sanibel Recreation Center, which is located at the site of The Sanibel School, was recognized by the Master Plan as a high priority. Passage of a General Obligation Bond Referendum in 2006, authorized issuance of \$8.35 million of debt for the new Recreation Center. In addition to these funds, the Lee County School District provided another \$1.5962 million and the Lee County Board of County Commissioners funded another \$3.2 million for the Recreation Center.

The core achievements of the Master Parks and Recreation Plan included the replacement and upgrading of the Recreation Center and Aquatic Center. The tennis courts were relocated and rebuilt and the ball diamonds/multi-purpose fields were refurbished at this site. A covered multi-purpose area (two courts) and a skate area were added to the complex.

The Sanibel Island Golf Club, available to the public, is provided by the private sector. Other recreation facilities, such as tennis

courts, satisfy some demand from neighborhoods and multi-family developments.

The City's recreational facilities are adequate to serve existing and the remaining development permitted by the Future Land Use Map.

Other Public Facilities and Utilities Provided within the City

Since the *Sanibel Plan* was extensively revised in 1997, there have also been significant improvements to public facilities and utilities that are provided within the City, but not by the City.

Water Supply

The capacity of the Island Water Association's Reverse Osmosis Water Treatment Plant currently has a permitted capability of 5.99 million gallons per day. Existing treatment and storage capacity are sufficient to meet growth projections for Sanibel and Captiva, if conservation efforts are successful. Any unanticipated deficiency in supply that may occur during peak-season use is to be addressed by an increase in storage capacity. If future water capacity is required, IWA has the design and will consider permitting an underground storage and recovery well (ASR).

This storage facility is part of the City's Ten-Year Water Supply Facilities Plan, adopted as part of the *Sanibel Plan* on September 18, 2007.

A deep injection well was constructed to improve the method of discharging brine and other by-product waste occurring in the water treatment process. This well is also available for

discharging wastewater effluent in wet weather from the Sanibel Sewer System.

From 2007 through 2011, capital improvements expenditures for potable water treatment and delivery by the Island Water Association totaled approximately \$5.4 million.

The application of the level of service standard for the Potable Water Treatment Plant demonstrates that there is capacity to serve existing and the remaining development on both Sanibel and Captiva.

Solid Waste Disposal Facilities

There are no solid waste disposal facilities located in the City of Sanibel. Landfills and solid waste disposal facilities are not appropriate for or permitted within the City. There has been a significant increase in the operational cost of solid waste collection. The City promotes recycling. Lee County provides a household hazardous waste collection facility off-island.

Fire Stations

The Sanibel Fire and Rescue District has replaced Palm Ridge Road Station no. 1 and completed an addition to Sanibel-Captiva Road Station no. 2. A training structure and a helicopter pad are part of the redevelopment of Station no. 1. The District continues to have an interest in having a Fire and Rescue station on the east end of the Island.

Schools

Permanent classrooms for the middle school, a new library, media center and cafeteria were completed at the Sanibel

School in 2004. No additional schools are planned or projected in the City of Sanibel by the Lee County School District.

Libraries

A 10,000 square foot addition at the Sanibel Library provides expanded computer services, multimedia materials and local history sections.

Electric Substations

The Lee County Electric Cooperative replaced its substation with a 138 kilovolt facility, twice the capacity of the old substation. The Cooperative also replaced and upgraded the transmission lines coming to the substation from Pine Island.

Level of Service (LOS) Standards

Adopted level of service standards for concurrency related public facilities have been attained and the City has met the demands of growth on public services and facilities. Specifically, these public facilities are: roadways, wastewater treatment (water reclamation) facilities, stormwater drainage systems, recreation facilities, public school facilities, water supply treatment facilities and solid waste disposal facilities.

LOS Standard for Roadways

Given the other policies of the Plan, it is the intent of the City that LOS "F" is the accepted standard on roadways.

Obviously this level of service standard for roadways has been achieved and can be maintained. Therefore, there are no new

roads or roadway improvements identified on the Adopted Five-Year Schedule of Capital Improvements.

The application of the level of service standard for roads concludes that existing roadways are adequate to serve existing and the remaining development and is consistent with the City's established position that additional roads and additional lanes on existing roads will not be added to the City's roadways.

At this time, a study of possible improvements to the intersection of Periwinkle Way and Causeway Boulevard has not been included in the City's Five-Year Capital Improvement Program. This improvement is not required to retain the level of service standard adopted for these roadways.

The implementation of a Master Plan for Shared Use Paths will require both land acquisitions and capital improvements. There is no level of service standard or concurrency requirement for shared use paths.

LOS Standards for Wastewater Treatment Facilities

Sanibel Sewer System - 240 gallons per day per unit

The application of the level of service standard for the City's Advanced Water Reclamation (wastewater treatment) plants demonstrate that there is adequate capacity to accommodate existing and the remaining development. Newly developed and redeveloped properties will have to address the adequacy of the wastewater collection system, both on-site and off-site.

There are no improvements identified on the Adopted Five-Year Schedule of Capital Improvements for wastewater treatment facilities. There are no water reclamation facilities projects

required to retain the level of service standard adopted for wastewater treatment facilities.

LOS Standards for Storm Drainage Systems

For developments that are not exempt from permitting requirements of the South Florida Water Management District, provide stormwater drainage systems in accordance with the requirements of the District, typically designed for the

- 25-year storm event of three-day duration

For infill developments that are exempt from permitting requirements of the South Florida Water Management District, provide stormwater drainage systems designed for the

- Five-year storm event of one-hour duration

Through implementation of the *Surface Water Management Plan* and the development regulations and procedures of the Land Development Code governing private development, the City has attained this level of service standard. There are no drainage projects required to retain the level of service standard adopted for stormwater drainage facilities.

The City's surface water management system is in place and adequate to serve existing and the remaining development. Newly developed and redeveloped properties will have to address on-site retention and outfall considerations.

LOS Standards for Recreation Facilities

No. Recreation Facility

- 3 Ball Diamonds/Multi-purpose Fields
- 1 Indoor Multi-purpose Area (2 courts)
- 1 Covered Multi-purpose Area (2 courts)
- 4 Outdoor Tennis Courts
- 2 Volleyball Courts (outdoor or indoor)
- 1 Aquatic Center
- 1 Golf Course (18 holes)
- 1 Community Center

No. Recreation Facility

- 1 Boat Ramp (with dual launching capability)
- 1 Skate Area
- 1 Non-motorized Boat Launching Area
- 3 Playgrounds

Only 640 more dwelling units remain to be developed (which is projected to be approximately 7 percent of the housing stock at “build-out”). Approximately 540 of those dwelling units will be infill development on existing lots for single family dwellings. Since the City is close to “build-out”, it is impractical to link the replacement of existing recreational facilities to the concurrency management program for the development of additional dwelling units.

The City’s recreational facilities are adequate to serve the remaining development permitted by the Future Land Use Map. However, the City will continue to provide recreation facilities and programs that are beyond the minimum level of service standards for recreational facilities established in this Plan.

The schedule to replace and upgrade recreational facilities in accordance with the *Master Parks and Recreation Plan* will depend on the City’s ability to fund these improvements. Funded components of the Master Plan will be included in the City’s Five-Year Capital Improvement Plan, but these recreational facilities are not and will not be included in the adopted Five-Year Schedule of Capital Improvements.

LOS Standard for Water Supply Facilities

An average potable water supply production rate of 300 gallons per equivalent residential unit per day

The Island Water Association (IWA), a nonprofit community cooperative with exclusive franchise serving Sanibel and Captiva Islands, owns and operates the public water system on Sanibel. This public facility is not provided by the City of Sanibel. There are no water supply facilities identified on the Adopted Five-Year Schedule of Capital Improvements or in the Ten-Year Water Supply Facilities Work Plan. This improvement is not currently required to retain the level of service standard adopted for water supply facilities.

The application of the level of service standard for the Potable Water Treatment Plant demonstrates that there is capacity to serve the remaining development on both Sanibel and Captiva. Newly developed and redeveloped properties will have to address the adequacy of the water distribution system, both on-site and off-site.

LOS Standards for Public School Facilities

The minimum acceptable level of service standards for public schools within the City of Sanibel shall be:

School Type	Level of Service Standard*
Elementary:	100% of permanent Florida Inventory of School Houses Capacity**
Middle:	100% of permanent Florida Inventory of School Houses Capacity**
High:	100% of permanent Florida Inventory of School Houses Capacity**
Special Purpose:	100% of permanent Florida Inventory of School Houses Capacity**

* As adjusted by the School Board annually to account for measurable programmatic changes. Measurable programmatic change is defined and the use of relocatable classrooms is explained in Policy 2.1 in Section 3.3.8 (the Public School Facilities Element) of this Plan.

** “Permanent capacity” means the combined capacity for all schools of each type that are located in the School District’s Student Assignment Zones.

Public education in the City of Sanibel is administered and financed by the Lee County School District. Sanibel has one

elementary/middle school located on the Island. In 2004, a major addition was completed at the Sanibel School, including permanent classrooms for the middle school. There are no public school facilities identified on the Adopted Five-Year Schedule of Capital Improvements.

The Public Schools Facilities Element was added to the *Sanibel Plan* to meet State requirements that have subsequently been repealed. However, many components of the Public Schools Facilities Element are also required by the Interlocal Agreement between the City and the Lee County School District. Following the 2012 evaluation of the *Sanibel Plan*, the City intends to discuss revisions to the Interlocal Agreement with the Lee County School Board.

LOS Solid Waste Disposal Facilities

Seven (7) pounds per person per day

There are no solid waste facilities located in the City of Sanibel.

Florida Statutes preclude the establishment of a land-fill on a barrier island; that is, within Sanibel City limits. The City uses solid waste disposal facilities provided by Lee County. Since this public facility is not provided by the City of Sanibel, there are no solid waste disposal facilities identified on the adopted Five-Year Schedule of Capital Improvements. The City does not intend to add any solid waste disposal facilities to the adopted Five-Year Schedule of Capital Improvements.

Attainment and Maintenance of LOS Standards

There are no capital improvement projects needed to attain or maintain the adopted level of service standards for concurrency

related public facilities. Therefore, there are no capital improvement needs (required to attain or maintain adopted level of service standards for public facilities) projected for the initial timeframe of this Plan, that is through the year 2017. It has been and continues to be financially feasible to achieve and maintain the adopted level of service standards for public facilities.

The City of Sanibel will continue to fund capital improvement projects before deficiencies in level of service for public facilities arise. The City is capable of funding the capital improvements identified on the Five-Year Schedule of Capital Improvements in Section 3.5.2 implementation, Monitoring and Evaluation of the *Sanibel Plan* and the City's Five-Year Capital Improvement Program.

Other Considerations

The significant loss of revenue from the weigh station and from the Causeway revenue sharing agreement and the potential for reductions from other revenue sources will present a challenge for funding future programs and capital improvements.

In 2012, the City estimates it will receive \$1.4 million in revenue from the Local Option Gas Tax. It is vitally important to the City of Sanibel that the City's share of the Local Option Gas Tax be preserved.

It is also important to restore Causeway surplus toll proceeds revenues as a funding source for road improvements. The City has foregone approximately \$850,000 annually in revenue from Sanibel Causeway surplus toll revenues, since February 2005. These intergovernmental revenues have been an important source of funding available for road maintenance and improvements.

A Master Plan for the Restoration of the Periwinkle Way Corridor from the damage inflicted by Hurricane Charley has been adopted. Implementation is now being completed through both public and private sources of funding.

Goals, Objectives and Policies

The goals, objectives and policies of this section of the *Sanibel Plan* direct the implementation, evaluation and monitoring of the Capital Improvements Element.

Goal Statement

Needed public facilities (human support systems) are to be provided to Sanibel residents and land uses within its jurisdiction, in a manner that protects and maximizes use of existing facilities, maintains adequate levels of service and promotes orderly and environmentally sound development.

Objective 1

Schedule capital improvements for facilities needed to replace obsolete or worn-out facilities and accommodate existing development and desired future growth and redevelopment.

Policy 1.1. Capital improvement projects will be evaluated to determine their impact on attaining the objectives of the *Sanibel Plan*. This evaluation, directly related to the individual elements of the Plan, is also based on the following criteria:

- Contribution to the elimination of public hazards
- Contribution to the elimination of facility capacity deficits or obsolete facilities

- Impact of the improvement on the City's budget
- The financial feasibility of the improvement
- Locational requirements of the facility
- Contribution to serving projected growth patterns as illustrated on the Future Land Use Map
- Compatibility with the plans of State, Regional, County and Local agencies and with the Lee County School District, in accordance with the Intergovernmental coordination policies of the *Sanibel Plan*

Objective 2

Limit public expenditures in the coastal area subject to storm surge (the velocity zone identified on the Federal Flood Insurance Rate Map) and scour.

Policy 2.1. Public expenditures in coastal areas subject to storm surge (the velocity zone identified on the Federal Flood Insurance Rate Map) and scour will be limited to maintenance, public safety needs, recreation and open space uses, restoration or enhancement of natural resources or land acquisitions.

Objective 3

Development orders and amendments to the *Sanibel Plan* are to be coordinated with the availability of human support systems (public facilities) needed to maintain adopted level of service standards.

Policy 3.1. No permits will be issued for future development that would result in an increase in demand for facilities that do not comply with the minimum level of service standards established in this Plan.

Policy 3.2. Prior to the issuance of certificates of occupancy, public facilities (human support systems) needed to serve the development will be available.

Policy 3.3. Pursuant to Part 3.3 of the *Sanibel Plan*, Human Support System, the Land Development Code will ensure that development orders and permits include conditions ensuring that adequate facility capacity is available or will be available when needed to serve the development.

Objective 4

Ensure that fiscal resources are available to provide needed human support systems, in accordance with the Five-Year Schedule of Capital Improvements, in order to maintain adopted level of service standards and meet current and future facility needs.

Policy 4.1. The City of Sanibel will continue to maintain a Capital Improvement Program and an annual capital budget as part of its budgeting process.

Policy 4.2. The City's Capital Improvement Program and annual capital budget will include the projects identified in the Five-Year Schedule of Capital Improvements provided in Part 3.5 Capital Improvements of the *Sanibel Plan*.

Policy 4.3. Maintain the interlocal agreement with Lee County for the disbursement of Causeway surplus toll revenue.

Objective 5

Manage land development in the City of Sanibel so that public facility needs created by future development do not exceed the City's ability to fund and provide needed capital improvements.

Objective 6

Future development will bear a proportionate cost of facility improvements necessitated by the development in order to adequately maintain adopted level of service standards.

Policy 6.1. Extensions of the collection system for the water reclamation (wastewater treatment) facilities and distribution systems for water supply facilities to serve new development shall be provided, and paid for, by the developer. Storm drainage facilities to serve new development shall be provided and paid for by the developer.

Policy 6.2. The City may employ assessments for new development of a pro rata share of the costs necessary to finance public facility improvements necessitated by the development in order to adequately maintain adopted level of service standards. New developments can satisfy transportation concurrency requirements, pursuant to the requirements and criteria of *Section 163.3180(5)(h), Florida Statutes*.

Objective 7

The Five-Year Schedule of Capital Improvements in Section 3.5.2 Implementation, Monitoring and Evaluation will include those Lee County School District school facilities projects within the City that are needed to address future needs.

Policy 7.1. The City incorporates into this Capital Improvements Element the Lee County School District 2012-2013 Work Plan: as adopted by the Lee County School Board on September 25, 2012, including the Summary of Capital Improvements Program and Summary of Estimated Revenue.

The City shall incorporate, by reference, the Lee County School Board's annual update of the Capital Facilities Work Plan into the Capital Improvements Element of the *Sanibel Plan*. The Capital Facilities Work Plan shall identify school facility projects which are necessary to address existing deficiencies and meet future needs. The Plan shall demonstrate the financial feasibility of the School District to achieve and maintain the adopted LOS standard for the five year planning period, supported by data and analysis.

Policy 7.2. If adequate capacity in public school facilities to address student impacts will not be in place or under actual construction within three years in the concurrency service area where the development is located, the Lee County School District will look to a contiguous concurrency service area for capacity. If sufficient capacity to address student impacts will not be in place or under actual construction within three years in the contiguous concurrency service area, the developer must address mitigation of the deficiency in

school capacity. Proportionate share mitigation must create a sufficient number of additional student stations to maintain the established level of service with the addition of the demand generated by the development.

Mitigation options include, but are not limited to, the options identified in the City's interlocal agreement with the School District.

If mitigation can be agreed upon, the City and the School District will enter into an enforceable binding agreement with the developer. If capacity is not available and mitigation cannot be agreed upon, the City cannot approve the application until such time as capacity becomes available.

Objective 8

To annually review this Capital Improvements Element.

Policy 8.1. The City of Sanibel will annually review this Capital Improvements Element by adding a fifth year to the Five-Year Schedule of Capital Improvements (Section 3.5.2 Implementation, Monitoring and Evaluation) and revising the Five-Year Schedule of Capital Improvements, as necessary, to ensure that the level of service standards for Human Support Systems (public facilities) including Public School Facilities, continue to be attained and financially feasible.

Policy 8.2. The City will annually review this Capital Improvements Element to be consistent with and coordinated with the Lee County School District's financially feasible Work Plan, amended, as necessary,

to revise the Public School Concurrency Service Area Map.

Policy 8.3. The City staff will coordinate the annual review of this Capital Improvements Element with the staff of the Lee County School District and the staffs of Lee County and applicable Municipalities within the County.

Section 3.5.2. Implementation, Monitoring and Evaluation

Pursuant to Section 163.3177, Florida Statutes.

Background Discussion

Implementation, monitoring and evaluation are vital to the effectiveness of the *Sanibel Plan*. Because the City's revenues and expenditures are subject to fluctuations in the economy, the Capital Improvements Element will be reviewed on an annual basis to ensure that required fiscal resources are available to provide public facilities (human support systems) needed to maintain adopted level of service standards. A Five-Year Schedule of Capital Improvements provides a mechanism for implementing the Capital Improvements Element of the Plan.

Five-Year Schedule of Capital Improvements

A Five-Year Schedule of Capital Improvements, derived from the Elements of the *Sanibel Plan*, is provided in the following Table. Revenue projections by funding source are provided in the Background Discussion in the Capital Improvements Element, including referenced and supporting materials, such as the Lee County School District 2012 Work Plan.

Adopted Five-Year Schedule of Capital Improvements

There are no Capital Improvements necessary to attain or maintain the required levels of service set forth in this Plan.

NO PROJECTS IDENTIFIED

Human Support System Facilities	2013	2014	2015	2016	2017
Roadways	-0-	-0-	-0-	-0-	-0-
- Intersection Periwinkle Way & Causeway Blvd.	-See note 1-				
- Shared Use path improvements	-See note 2-				
Water Reclamation (wastewater treatment)	-0-	-0-	-0-	-0-	-0-
- Collection system	-See note 3-				
Stormwater Drainage	-0-	-0-	-0-	-0-	-0-
- Maintenance and wetlands enhancement	-See note 4-				
Public Schools	-0-	-0-	-0-	-0-	-0-
- Elementary Schools	-See note 5-				
- Middle Schools	-See note 5-				
- High Schools	-See note 5-				
- Special Education	-See note 5-				
Recreation	-0-	-0-	-0-	-0-	-0-
- Recreation Center	-See note 6-				
Water Supply	-0-	-0-	-0-	-0-	-0-
- 1.2 MGD underground storage & recovery well	-See note 7-				
Solid Waste	-0-	-0-	-0-	-0-	-0-

Notes for the adopted Five-Year Schedule of Capital Improvements

- (1) The City's 5-year Capital Improvements Plan (Fiscal Year 2013 through 2017) identified \$3,600,000 for road projects and an additional \$3,500,000 for maintenance of the roadways.
- (2) The implementation of a *Master Plan for Shared Use Paths* will require both land acquisition and capital improvements. These improvements are not required to retain the level of service standard adopted for shared use paths. Only the initial phase of implementation is funded.
- (3) It is projected that \$1,300,000 will complete the expansion of Sanibel Sewer System. The final phase of the collection system expansion adds less than 100 connections (equivalent residential connections) for land uses that are relatively remote from existing service. It may be that all components of this small phase will not be completed, if the cost is prohibitive. Completion of the several small components of this final phase may take years to complete. Final phase improvements are not required to retain the level of service standard adopted for wastewater treatment facilities.
- (4) The City projects that \$1,000,000 will be expended for Fiscal Year 2013 through 2017) for maintenance of the City's drainage systems. Improvements are not required to retain the level of service standard adopted for stormwater drainage systems.
- (5) The Lee County School District Facilities Work Plan demonstrates that the District achieves and maintains the adopted level of service standards for the District-wide (County-wide) school concurrency system. Through an interlocal agreement with the Lee County School Board, the City is implementing a school concurrency review for all new development defined in that agreement. Based on the Lee County School District 2012-2013 Work Plan, adopted by the Lee County School District on September 25, 2012, there are no deficiencies in public school facilities for both the short range and long range planning periods of the *Sanibel Plan*. It is not anticipated that any revenues from the City's General Fund will be allocated for new public school facilities. It is not anticipated that any new public facilities will be located in the City of Sanibel.
- (6) Since 2005, capital improvements expenditures for recreational facilities total about \$15,000,000. The City's 5-Year Capital Improvement Program Plan (Fiscal Year 2013 through 2017) includes \$200,000 to match a \$200,000 grant from FRDAP for new recreational facility projects. These improvements are required to retain the level of service standard adopted for recreation facilities.
- (7) Existing treatment capacity is sufficient to meet growth projections for Sanibel and Captiva, if conservation efforts are successful. The Ten year plan for building water supply facilities to serve existing and projected development relies on the efficient use of existing facilities, but also the expansion of the program to reuse treated wastewater for irrigation purposes. The Island Water Association (IWA) and the City of Sanibel need to coordinate on this effort. The reuse program will be expanded as cost effective ways are identified. Storage capacity, to augment flow and pressure for peak demand and fire flow needs, is adequate for current and future needs. As part of the City's 10-Year Water Supply Facilities Plan developed in conjunction with IWA, IWA has the design for, and will consider permitting an underground storage and recovery well (ASR), if necessary. The estimated cost of this improvement is \$1,500,000.00. Capital improvements for the water supply treatment facilities are provided by the Island Water Association. This improvement is not required to retain the level of service standard adopted for water supply facilities.

Source: The City Manager's Office, Finance, Public Works, Utilities, Recreation and Planning Departments, the Lee County School District, and the Island Water Association (IWA).

Part 3.6. Land Use

This part of the *Sanibel Plan* is a product derived from the other elements of the Plan, including the preceding parts of this article.

This part of the *Sanibel Plan* contains the Housing Element and the Future Land Use Element. This part of the *Sanibel Plan* establishes goals, objectives and policies for housing and future land use.

Section 3.6.1. Housing Goals, Objectives and Policies

Pursuant to Section 163.3177, Florida Statutes.

Background Discussion

The purpose of the Housing Element is to develop appropriate plans and policies which demonstrate the commitment of the City of Sanibel in meeting existing and projected deficits that are identified in the supply of housing. These plans and policies address government activities as well as provide direction and assistance to the efforts of the private sector.

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(6)(f), Florida Statutes* is provided in this subsection.

Private sector activities are currently effective in conserving and maintaining the existing housing stock. The City is located in the one of the regions of the country that has been most significantly affected by the economic downturn in the housing

market. Housing values peaked in 2006 and have subsequently declined. Even during the economic downturn, most existing housing on Sanibel has been well maintained. However, during the 42 month period between September 2008 and June 2012, over 100 properties were auctioned or became bank-owned foreclosures. During the same time period, two substandard units have been condemned and demolished.

In accordance with the Development Intensity Map, a limited number of additional dwelling units, approximately 640, are projected.

Historically, limited land resources available to satisfy all housing demands presented a significant constraint to the provision of housing for very low, low and moderate income people. Partially in response to this situation, the City has implemented a Below Market Rate Housing Program.

The City of Sanibel is a small, distinct component of the Regional housing market. The City supports the provision of housing to meet a diversity of housing needs. Yet, some housing needs are best satisfied by the housing stock outside the City in the larger Regional housing market.

The housing inventory is comprised of data from the 2010 Census of Population and Housing, other Commerce Department data and Local sources. The information from these distinct sources is consistent but not readily compatible. Census data excludes motels and units for short-term occupancy from the housing stock and does not reflect the seasonal population component of the functional population. Local data includes the housing stock for both the resident and seasonal population. The Sanibel housing stock totaled approximately 8,285 dwelling units in 2011, compared with the 2010 Census estimate of 3,359 owner and rented occupied primary residence households. This wide

disparity dramatizes the seasonal nature of occupancy and accompanying high out-of-season vacancy rates.

Characteristics of the Housing Stock

In the Regional housing market, the City of Sanibel represents a small yet distinct component. The number of dwelling units in the City of Sanibel comprises a small percentage (less than two percent) of the total number of dwelling units in Lee County. This percentage is projected to decline, as indicated by the projected growth rates for Lee County and for the City of Sanibel.

Approximately 51 percent of the housing stock in the City of Sanibel is in multi-family structures, chiefly condominiums. Approximately 48 percent of the housing stock is in single family houses. Mobile homes are one percent of the housing stock. There are 246 campsites for recreational vehicles located in the trailer park. Over 53 percent of the housing stock in the City of Sanibel has been constructed since 1975.

Most existing housing is well maintained. Sanibel has no pockets of housing deterioration or abandonment.

Affordable Housing

The *Sanibel Plan* continues to provide opportunities for a diverse housing stock with a wide range of housing types permitted. Single family and multi-family structures are specifically permitted. However, mobile homes are discouraged, because such housing would be very dangerous in heavy weather.

Development of all housing units is affected by the Land Development Code, building codes and other land use regulations. These regulations are designed to accommodate the

Island's housing needs while respecting the environmental fragility of its natural systems and its vulnerability to tropical storms. Because of high land costs and the need for construction techniques that provide storm protection, housing costs on Sanibel tend to be well above the average for residential building.

There are approximately 8,285 dwelling units currently in the City of Sanibel. Nearly 60 percent of these units are occupied by tourists and the nonresident seasonal population. The participation of nonresidents and businesses in the Sanibel housing market has significantly contributed to the high cost of housing in Sanibel.

Relative to the surrounding region the cost of housing is high in the City of Sanibel. The 2010 Census and the 2006-2010 Commerce Department American Community Survey (ACS) data identified 124 dwelling units (two units or less per structure) in the City valued under \$100,000. The ACS reported an average value for single family and duplex units of \$392,594 slightly up from \$392,400 in 2000. The Commerce Department American Community Survey reported median rent at \$1,128, up \$128 from 2000. There were 124 units with contract rents under \$750 in the City of Sanibel reported in the 2006-2010 American Community Survey.

In spite of the large percentage of high valued dwellings in the existing housing stock, there are units in the City of Sanibel that are available to moderate income households. There are approximately 25 modest apartments located in association with commercial developments, and one 13-bedroom employee housing complex with shared kitchen facilities. There are 80 manufactured homes in Periwinkle Park. There are also approximately 70 moderate-value non-waterfront condominium units.

The high cost of housing is impacted by the limited supply of vacant developable land. Less than 640 dwelling units are projected to be added to Sanibel's housing stock at "build-out". About 540 of the additional units are anticipated as infill development on existing vacant residential lots. The other approximately 100 units are anticipated on undeveloped (unsubdivided) lands.

From the inventory of existing vacant residential lots, four lots were sold for \$100,000 or less since 2006. In the inventory of raw undeveloped residential land, estimated to allow a total of 100 units, land values under \$100,000 a unit would be hard to find and the cost of improvements would increase the total per unit cost.

The situation of high land values is an important factor in assessing opportunities for providing affordable housing. The high cost of vacant land has contributed to the lack of moderate cost housing provided by the private sector.

It is evident from an analysis of the existing housing stock and the vacant developable land inventory, that the private sector is unable, without major City support and philanthropic effort, to provide housing on Sanibel that is affordable to very low, low and moderate income households. In fact, assistance programs are generally unable to cost-effectively bridge the gap between the money available for housing by very low, low, and moderate income households and the high cost of (to purchase or rent) housing in the City of Sanibel.

Subsidized Housing

In the City of Sanibel, there are no privately owned renter-occupied housing units currently using Federal Section 8 rental subsidies. There are 88 units currently in the City's Below

Market Rate Housing Program (BMRH). Currently, there are 14 limited equity ownership units and 74 renter-occupied units.

Fifty-four of these units are in the single family and duplex category and 34 are in the multi-family category.

City of Sanibel's Below Market Rate Housing Program

Provision for moderate-income housing has had to rely on assistance from the City in cooperation with the private sector. In response to the need, and in compliance with the provisions of this Plan and the State's Local Government Comprehensive Planning Act of 1975, the City of Sanibel enacted a Below Market Rate Housing (BMRH) program, which was the first such program in the State. This program, established more than 15 years before the Vision Statement was added to the *Sanibel Plan*, is consistent with that expression of the community's aspiration for its future. The Below Market Rate Housing program, reflective of the values of the community, provides affordable housing opportunities for residents of moderate incomes or less.

Sanibel is nationally known for its dedication to remaining a "sanctuary" Island for humans and wildlife. Less well-known, but just as important, is the City's commitment to maintaining a strong, diversified sense of community.

As specified in its Vision Statement, Sanibel "cherishes its ... economic diversity," and "will endeavor to maintain it." Though the City might hypothetically satisfy State standards by providing low-income housing opportunities in nearby jurisdictions, it would in so doing fail to meet its own higher standard. Through the adoption of a Vision Statement in 1996, the citizens of Sanibel have reiterated their desire to maintain an economically diverse community.

To require that lower-income members of the community move to other jurisdictions to benefit from the City's Below Market Rate Housing program would contradict the City's Vision Statement and defeat the very purpose of the BMRH program. The effect of having an off-Island housing program would be to establish a two-tier system. Providing for affordable housing off-Island would mean that some of the lower income members of this community may be denied the opportunity to participate as full voting citizens. Additionally, the children of lower income members of the community may be denied the opportunity to attend the "Blue Ribbon" Sanibel School. Senior members of our community with limited assets and lower incomes may be denied the opportunity to remain among lifelong friends and associates.

Sanibel's BMRH program deliberately breaks with many of the patterns established by public housing programs elsewhere. To underscore the fundamental equality of all citizens, BMRH units are constructed and landscaped to be virtually indistinguishable from the rest of the community. That eliminates the stigma that is usually attached to being in public housing, ensures that such housing conforms to the aesthetic standards of the community, and thereby fosters a well-earned sense of civic pride. It is the City's goal to maintain that emphasis, as expressed in the Goal Statement for Housing and Policy 3.1 in this section.

The BMRH program has evolved to the present 88 program units. Thirteen of these program units have been sold and 1 additional unit is available for sale through the limited equity ownership program. These limited equity ownership units must be re-sold to CHR to ensure that they remain in the Below Market Rate Housing Program.

Community support of the City's relationship with Community Housing and Resources, Inc. in the administration of the Below Market Rate Housing Program was affirmed in a 1996 referendum.

CHR Program's Rental Units

Development	Type of Unit	Number of Units	Bedrooms
Airport Way	6 Duplexes	12 Units	Mix of 2 and 3 Bedrooms
Mahogany Way	7 Duplexes	14 Units	Mix of 2 and 3 Bedrooms
Woodhaven	Multi Family	12 Units	2 Bedrooms
Casa Mariposa	Multi Family	12 Units	2 Bedrooms
Lake Palm	2 Duplexes	4 Units	1 Bedroom
Riverview	Multi Family	10 Units	4 Studios, 6 one Bedroom
Beach Road	Single Family	1 Unit	2 Bedroom
Sanibel Highlands	Single Family	1 Unit	3 Bedroom
Centre Place	3 Duplexes	6 Units	Mix of 2 and 3 Bedrooms
Algiers (City owned)	Single Family	1 Unit	1 Bedroom
Rabbit Road (Privately owned)	Duplex	1 Unit	1 Bedroom
Total Rentals		74 Units	

CHR Program's Limited Equity Ownership Units

Development	Type of Unit	Number of Units	Bedrooms
Beach Road	2 Duplexes	4 Units	Mix of 1 and 2 Bedrooms
Sanibel Highlands	1 Duplex	2 Units	2 Bedrooms
Centre Place	4 Duplexes	8 Units	Mix of 2 and 3 Bedrooms
Total LEO's		14 Units	

Historically, the City has provided funds (recently \$275,000 or more annually) for the administrative costs and rent free office space for CHR. Key elements of the BMRH ordinance permit relaxation of density in specified ecological zones and allow residential use in connection with commercial development (mixed use), all on a case-by-case basis. City contributions toward infrastructure (e.g. roads, sewer, and water) would be additionally supportive of moderate income housing.

The present 88 units, are committed to the City's BMRH program in perpetuity, currently provides affordable housing for approximately 101 adults and 37 children.

Thirty-eight BMRH units have been added to the program since 2001, representing 11 percent of the dwelling units built in that time frame. In 2012, one BMRH unit was sold from the program at market value and is no longer committed to CHR's affordable housing inventory.

Other Housing

In the City of Sanibel there are currently no group homes or foster homes licensed by the State of Florida. Group homes and foster homes are permitted in residential districts. Due to

concerns for hurricane evacuation safety, only small scale group homes or foster homes are appropriate on the Island. Large and medium size congregate living facilities are inappropriate on a barrier island, with evacuation constraints such as those present on Sanibel.

There is one mobile home park in the City of Sanibel. This lawfully existing use contains 80 mobile homes and 246 park sites for recreational vehicles. Unless constructed in strict compliance with the Sanibel Building Code, new mobile homes are inappropriate for a barrier island such as Sanibel.

In the City of Sanibel there are no historic districts. An inventory of historically significant housing is provided in the Historic Preservation Element of the Plan.

Housing Needs

To achieve consistency with other elements of this Plan, particularly the Safety, Coastal Zone Protection and Conservation Elements, the supply of additional housing must be controlled. In 2012, approximately 93 percent of the housing stock anticipated in the City of Sanibel at "build-out" has already been constructed.

In general, there is a demand for Sanibel housing that has produced high property values and resulted in scarcity of very low, low and moderate income housing on the Island. Because of the high value of the existing housing stock and exceptionally high land and construction costs, government assistance will continue to be necessary to address the need, by young and old alike, for this type of housing on Sanibel.

Community Housing and Resources plans to further evaluate the current and long-term need for housing by conducting a needs

assessment and feasibility analysis. This needs assessment and feasibility analysis will broadly consider the components of affordable housing (e.g. BMRH, Senior, Essential Workers, etc.).

Land Requirements for Housing Needs

The Future Land Use Element, reflecting all the elements of this Plan, has incorporated the concept of build-out that has always been a foundation of the *Sanibel Plan*.

The concept of build-out was established in recognition of constraints imposed by the need for hurricane safety, adequate delivery of services and natural resource protection. These constraints clearly demonstrate that unlimited future growth would be hazardous to the health, safety and welfare of the public. This discussion of density and intensity of use, used to establish the objectives of the *Sanibel Plan*, helps demonstrate the limited land resources available in the City of Sanibel. Housing needs can be satisfied only within the constraints imposed by limited land resources. This limit on future growth, always part of the *Sanibel Plan*, is reflected in the Development Intensity Map and the build-back and redevelopment regulations in the Land Development Code.

The supply of additional housing, permitted in accordance with the Development Intensity Map, is expected:

- To be predominately single family residences and a small amount of relatively small scale multi-family structures
- Predominately high value (cost and rent) units for middle and upper income households.

The provision of moderate cost housing will continue to require the cooperation of the public and private sectors. The provision

of housing for households with very low, low and moderate incomes will continue to require the cooperation of other local governments where land is more available and affordable.

Adequate Sites for Very Low, Low and Moderate Income Housing

As clearly established by the *Sanibel Plan*, there are many valid reasons for limiting the intensity of land use in the fragile ecosystem of the City of Sanibel. Valid reasons that have not only received extensive community support, but reasons that have been accepted, and to some extent endorsed by, the Southwest Florida Regional Planning Council and the Florida Department of Economic Opportunity. The 2011 "*Community Planning Act*" provides further support for the City's position to address Sanibel determined affordable housing needs.

Consequently, as the City of Sanibel reaches 93 percent of its projected "build-out" for residential and non-residential land uses, there are few opportunities to provide affordable housing in a community where land use patterns are so established and land values are so high.

There are many factors that must be considered, incorporated and reflected in a realistic affordable housing needs assessment for the City of Sanibel. These factors include valid limitations on the intensity of land use throughout the Island, valid growth management regulations for the protection of natural resources and valid concerns for safe hurricane evacuation, all resulting in a valid threshold for community "build-out". Other factors, such as the high cost of existing housing, the predominant occupancy of existing housing by nonresidents and the limited availability and high cost of vacant land must also be reflected.

It is critical to note that in, and consistent with, the *Sanibel Plan*, are projections for about 640 additional dwelling units.

The City's commitment to the Below Market Rate Housing Program is a re-affirmation of the Vision Statement, which includes the following:

"Community"

"Sanibel is and shall remain a small town community whose members choose to live in harmony with one another and with nature, creating a human settlement distinguished by its diversity, beauty, uniqueness, character and stewardship."

Diversity: The City of Sanibel cherishes its cultural, social, ecological and economic diversity and will endeavor to maintain it."

Currently there are 88 BMRH units, representing about 2.6 percent of Sanibel resident households. The 2004 / 2005 Evaluation and Appraisal Report suggests a program target for BMRH units of 3 percent of Sanibel's residential households. Based on changing conditions in the housing market and constraints cited throughout this plan, CHR will perform a needs assessment and feasibility study including a reevaluation of the program suggested target. In addition CHR will provide recommendation to the City for any update in support of establishing a new program target that is both attainable and sustainable.

Economic conditions play a significant role in the demand for Below Market Rate Housing. Since the last Evaluation and Appraisal Report of the Sanibel Plan, CHR has increased its BMRH stock by 24 additional units, from 64 to 88. Consequently,

this significant increase in housing stock requires a clearer focus on the maintenance of these existing units.

This change in focus towards maintenance does not preclude the future development of additional BMRH units.

To assist in providing sites for moderate-income housing, the City allows density increases in accordance with specified conditions for dwelling units in the City's BMRH Program. To provide sites for very low, low and moderate income housing, the City has purchased land for below market rate housing constructed by the Housing Foundation, including acquiring a site for affordable housing for seniors, who do not require assisted living arrangements, in keeping with the goals and provisions of the *Sanibel Plan*.

There are no regulatory barriers created by the City that are intended to prevent the provisions of affordable housing in the City of Sanibel. There are no local public sector impediments pertaining to fair housing.

Since housing is a Regional resource, the City of Sanibel will cooperate with other Local governments to address housing needs identified on a Countywide and Regional basis. However, the City's primary focus will continue to be on its on-Island BMRH program, in accord with Sanibel's adopted Vision Statement supporting a community which *"cherishes its... economic diversity"* and *"will endeavor to maintain it"*.

The City of Sanibel will continue to evaluate its BMRH Program to seek opportunities for its continuation in a manner that is both cost-effective in its use of available local subsidies and consistent with the objectives and policies of the *Sanibel Plan*.

Plan for Housing

No community housing goal is complete without concern for equity which few communities can claim to have achieved. Sanibel is not alone in having grown without specific attention to housing for people with varying means. The City of Sanibel's Plan for Housing is to include the following provisions:

Provisions of the Plan

1. Actively pursue ways to ensure equal access to an open housing market for all persons regardless of age, race, religion, gender, color, national origin, marital status, disability or place of birth.
2. Avoid establishing regulatory barriers to the provision of affordable housing.
3. Discourage additional resort housing from occurring outside of currently established resort housing areas.
4. Restrict development intensity in the Resort Housing District that is in excess of the density permitted by the Development Intensity Map of the *Sanibel Plan*; however, allow the build-back or redevelopment of existing units, up to the number of dwelling units existing on May 4, 2004, provided the units that are built back or redeveloped are in conformance with the *Sanibel Plan* and the Land Development Code.
5. Allow for provision of adequate sites for foster family homes, adult congregate living homes, residential childcare, and similar specialized housing facilities, while assuring that these facilities are

small-scale and appropriately coordinated in the City's Hurricane Evacuation Plan.

6. Consider introducing a mechanism for providing assistance in assembling the necessary rights-of-way and easements for certain infrastructure, such as road and drainage improvements, that may be required for BMRH projects.

Goals, Objectives and Policies

Goal Statement

Provide safe and decent housing in adequately serviced neighborhoods to meet the needs of the present and future residents of the City of Sanibel.

Objective 1

Maintain in the adopted Land Development Code, consistent with the *Sanibel Plan*, incentives for the private sector to provide adequate and affordable housing to meet the needs of the present and future residents of the City of Sanibel.

Policy 1.1. While providing for the health, safety and welfare of the residents of Sanibel, improve coordination with private, including nonprofit, sector efforts to provide housing which meets the needs of present and future residents, particularly those with special housing needs, by reviewing the regulations contained in the Land Development Code.

Policy 1.2. The Planning Commission will annually review the permitting process for private sector housing

to determine if improvements in the permit process are warranted.

Policy 1.3. Prior to issuing a development permit for new housing, the developer will demonstrate to the City that the infrastructure and public facilities needed to support that housing are in place or will be in place prior to occupancy of the housing.

Objective 2

Conserve and maintain the City's sound and aesthetic housing stock by requiring permits for work done on existing structures and inspections for compliance with the Land Development Code and the Building Code.

Policy 2.1. Maintain standards in the Sanibel Land Development Code that ensure quality housing that is safe and structurally sound and promotes stable neighborhoods.

Objective 3

Increase the total number of housing (dwelling) units that are available to persons of very low, low, and moderate income in addition to providing essential services workforce housing based on needs.

Policy 3.1. Provide for Sanibel-determined affordable housing needs through continuation of the City's on-Island BMRH Program.

Policy 3.2. Annually review the effectiveness of the City's BMRH (affordable housing) program and implement warranted revisions.

Policy 3.3. Support and assist the efforts of the Housing Foundation to maintain the program's existing housing stock and evaluate the need to increase the number of BMRH (affordable housing) units.

Policy 3.4. Maintain the provision of the Land Development Code allowing conditional use increased density (additional bonus units) for BMRH units.

Policy 3.5. Distribute BMRH units on Sanibel to provide a variety of residential settings and avoid undue concentration for very low, low and moderate income housing.

Policy 3.6. Apply for assistance under Federal and State housing programs when it appears the City may qualify for assistance.

Policy 3.7. Ensure that BMRH units continue to be developed and maintained in a manner that is compatible with the character of the community.

Policy 3.8. Evaluate opportunities for mixed commercial and residential developments in the commercial sector to provide housing opportunities for the Island workforce.

Policy 3.9. Due to unusually high property values in the City, the City's location entirely within the coastal high-hazard area and the City's nearness to "build-out", there are a very limited number of sites available for any additional housing, including private sector-provided affordable housing. Consequently, if the City is unable to meet Sanibel-determined affordable housing needs on-Island through its BMRH program, the

City will request that Lee County incorporate the unmet need in the County's affordable housing program.

Policy 3.10. Encourage that the employee housing provided at the South Seas Resort on Captiva Island be retained within the density cap for Captiva Island that is administered by Lee County and not replaced with resort units.

Objective 4

Maintain provisions for small-scale group homes and foster care facilities licensed or funded by the Florida Department of Children and Families permitted in accordance with the standards and requirements of the Land Development Code.

Policy 4.1. Allow for provision of adequate sites for group homes and foster care homes that are small-scale and appropriately coordinated in the City's Hurricane Evacuation Plan. Due to concerns for hurricane evacuation safety, large and medium size congregate living facilities and facilities that provide custodial care are inappropriate for location within the City of Sanibel.

Policy 4.2. Ensure that, by continued implementation of the development regulations of the Land Development Code, group homes and foster care facilities are not excluded from or over concentrated in any residential district or area.

Objective 5

Consistent with State Statutes and the Lee County Comprehensive Plan, new mobile home parks, mobile home condominiums, mobile home cooperatives and mobile home

subdivisions, are not permitted on barrier islands, including the City of Sanibel.

Policy 5.1. New mobile home construction or installation will comply with the regulations and standards of the Sanibel Land Development Code and the Florida Building Codes.

Objective 6

Historically significant housing will be protected and preserved for residential use, by incorporating incentives for the private sector in the Land Development Code.

Policy 6.1. Incorporate in the Land Development Code regulations that will permit the preservation, improvement and continued residential use of historically significant housing.

Policy 6.2. Maintain historically significant housing as identified on the Local Register of Historic Sites and Structures.

Objective 7

Require substandard housing conditions to be eliminated when work is done on a house under a City permit.

Policy 7.1. For any substandard dwelling unit (i.e., structurally unsound and an immediate threat to health, safety and welfare) in the City of Sanibel, the owner will be cited for the violations and ordered to comply with the appropriate requirements of the Sanibel Building Code.

Policy 7.2. Continue code enforcement activities.

Objective 8

Although no household (dwelling unit) displacement is projected in this Plan, if people are ever displaced by City programs, ensure that equitable treatment is provided to displaced people consistent with Section 421.55, Florida Statutes.

Policy 8.1. Should displacement by City programs occur, a program will be developed to ensure that standard housing is available to people displaced by City programs, prior to their displacement.

Section 3.6.2. Future Land Use Element

Pursuant to Section 163.3177, Florida Statutes.

Background Discussion

The data and analyses for this element of the *Sanibel Plan*, pursuant to *Section 163.3177(6)(a) and (7)(f), Florida Statutes* are summarized in this subsection.

Sanibel, located on a barrier Island, is approximately 18.1 square miles in area (11,600 acres). The principal use of over 60 percent of the area in the City of Sanibel is conservation use. More than eight square miles of the City are owned and managed by the federal government as the J. N. “Ding” Darling National Wildlife Refuge. The Sanibel-Captiva Conservation Foundation owns more than a square mile of additional land that is managed for conservation purposes.

The City of Sanibel is located entirely within the coastal floodplain. The City has participated in the Federal flood program since 1979. Flood and stormproofing regulations, which implement this program, are part of the Sanibel Land Development Code.

A Ports, Aviation, and Related Facilities Element is not required for the *Sanibel Plan*. There are no ports, harbors or aviation facilities in the City of Sanibel and there are no plans for any of these facilities. Air access for emergency vehicles is maintained.

There are no areas of designated critical State concern, pursuant to *Section 380.05, Florida Statutes*, within or adjacent

to the City of Sanibel. The Sanibel tidal wetlands are part of the Pine Island Sound Aquatic Preserve.

Land Uses Adjacent to Sanibel

State submerged lands are the adjacent land use to the City of Sanibel. The quality of these surrounding waters has been deteriorating, in spite of the City’s extensive efforts and investments in eliminating virtually all septic tanks within the City. Rapid development in the Caloosahatchee River watershed, much of which is continuing to rely on septic systems for wastewater disposal, contributes to this degradation of water quality. This situation is only exacerbated by the water releases from Lake Okeechobee. The City is genuinely concerned about the condition of this “adjacent land use”.

The southern end of Captiva, adjacent to the Blind Pass Bridge, is public beach and low density single family residential use. Punta Rassa, adjacent to the Sanibel Causeway, is high density hotels and condominiums, a tennis stadium, a marina and dry dock boat storage and Conservation Lands - Wetlands. Lands along the McGregor Boulevard / Summerlin Road corridor, Sanibel’s hurricane evacuation route, are continuing to develop residential communities and commercial land use.

Annexation/Expansion of Corporate Boundaries

In 1990, the City expanded its corporate limits to ½ mile offshore; into the coastal waters on State-owned submerged land. The City is considering further expansions of its corporate limits to include submerged land and the Sanibel Causeway.

Population Estimates and Projections

The constraints imposed by the need for hurricane safety, adequate delivery of services and natural resource protection clearly demonstrate that unlimited future population growth would be hazardous to health, safety and welfare of the public. To minimize these hazards it is essential to limit the total number of dwelling units, including hotel and motel units, trailer spaces, condominiums, timeshare units, duplexes and single family houses to approximately 9,000 units.

It is important that the City of Sanibel manage future growth by maintaining current development controls, particularly intensity of use requirements, as build-out is approached, in order to prevent overcrowding of land and avoid undue concentration of population; to facilitate the adequate and efficient provision of transportation, water, sewage treatment, schools, recreational facilities, housing and other requirements and services; to ensure adequate hurricane evacuation capabilities; and to conserve, develop, use and protect natural resources.

Sanibel, incorporated in 1974, has reached a mature stage in its development. In 2012, over 92 percent of the dwelling units permitted on Sanibel, in accordance with the Development Intensity Map and implementing provisions of the Land Development Code, have already been constructed.

The population estimates and projections for the Sanibel Plan are provided in the following table.

Population Estimates and Projections			
For Resident Population			
Year	2011	2017	2022
Low Range	6,470*	6,550	6,700
Medium Range	6,470*	6,650	6,800
High Range	6,470*	6,750	6,900
For Seasonal Population			
Year	2011	2017	2022
Low Range	10,074	10,900	10,500
Medium Range	11,730	11,850	12,120
High Range	14,210	14,250	14,600
For Functional Population			
Year	2011	2017	2022
Low Range	16,544	16,800	17,200
Medium Range	18,200	18,500	18,920
High Range	20,680	21,000	21,500
Sources: *University of Florida, Warrington College of Business Administration, Bureau of Economics and Business Research - April 2011 Sanibel Planning Department			

These population projections use the same methodology as used in the 1989, 1997 and 2007 Plan updates. In summary, the functional population is estimated by assuming occupancy of:

2.0 people per dwelling unit for the low range projection;

2.2 people per dwelling unit for the medium range projection; and

2.5 people per dwelling unit for the high range projection.

During peak season, the seasonal population of the City of Sanibel is approximately twice as large as the resident population. For this reason, the functional population (comprised of the resident population and the seasonal population) is the important population to consider for the analyses and evaluation of service delivery systems and impacts of development.

In addition to the functional population, the City of Sanibel is impacted by the daily influx of day visitors. This population, which does not use overnight accommodations within the jurisdiction of Sanibel, is mentioned here because of its potential impact on service delivery and maintenance of adequate level of service standards.

On an average day in peak season, the City of Sanibel estimates that approximately 13,000 day visitors enter the jurisdiction. It would be difficult to project the number of day visitors for future years, but it is reasonable to expect that the number will increase over time.

For the planning purpose of analyzing and evaluating service delivery systems, the medium range functional population estimates and projections are utilized in this Plan. However, to retain consistency with development of the *Sanibel Plan*, the number of dwelling units may be utilized for the preparation of level of service standards.

Land Use Projections

At build-out, an additional 640 dwelling units are projected to be constructed in the City of Sanibel. Approximately 540 of these units are expected to be located on existing lots within existing developments. The remaining 100 units are projected

to be located on the vacant and undeveloped land shown on the Existing Land Use Map.

Approximately 35,000 square feet of additional commercial floor area can be developed in the City of Sanibel, in accordance with the Commercial District Map and regulations of the Land Development Code.

Approximate Acreage of Land Uses
- 2012 and Buildout -

Land Use Category	Acreage %		Acreage %	
Conservation Uses	7350	63.4	7475	64.4
Residential Uses	2610	22.5	2700	23.3
Vacant/Undeveloped Land	245	2.1	0	0
Recreation Uses	590	5.1	600	5.2
Roadways	500	4.3	500	4.3
Commercial Uses	125	1.1	130	1.1
Public Facilities	65	0.6	65	0.6
Other Uses	115	1.0	130	1.9
Industrial Uses	-	0.0	-	0.0
Agricultural Uses	-	0.0	-	0.0
TOTAL	11,600	100	11,600	100

Note: Existing (2012) vacant lots subdivided for single family dwelling units are included in the Residential Land Use Category. There are approximately 475 acres of multifamily development included in the Residential Land Use Category. The Other Uses category includes churches, marinas, theaters and the like.

Source: Sanibel Planning Department

The estimations of acreage were obtained from the 2012 Existing Land Use map. The method of calculation was improved and the resultant differences from the 2006 Existing

Land Use Table can be attributed to that. There has been very little change in the 2006 Existing Land Use Map. Acquisitions by the Sanibel-Captiva Conservation Foundation of the Bailey Homestead site and the Bob Wigley Preserve (55 acres) have increased the amount of Conservation Uses. There was no increase in acreages in any other land use category. Although preliminary plats have been approved for three residential subdivisions (47 lots), this acreage is categorized as vacant since none of these subdivisions has obtained construction plan approval. The increases or decreases in estimated acreages of the land use categories is the result of improved (corrected) calculations of these areas.

In 2012, the City has practically reached “build-out”. Well over 90% of the development permitted in the City by the Future Land Use Map has occurred. The City of Sanibel has matured to a redevelopment phase.

Since the 2005 Evaluation and Appraisal of the *Sanibel Plan*, the City has embarked on an extensive Redevelopment Planning Work Program.

As part of the City’s Redevelopment Planning Work Program, the following activities have been accomplished.

In 2006, the City adopted comprehensive land development regulations that allow building-back of the existing number of dwelling units from the damage caused by a natural disaster.

In 2007 and 2008, regulations to address formula retail uses, the size of commercial buildings and units and outdoor dining at restaurants were added to the Land Development Code. A Commercial District Market Analysis and Redevelopment Planning Policies were

prepared for the Periwinkle Way West Commercial District. Architectural and Site Planning Design Guidelines were also prepared for the Periwinkle Way West Commercial District.

In 2010, the City analyzed residential land use and zoning regulations to ensure that neighborhood and community compatibility is retained when new, expanded and redeveloped single family dwellings are built.

In 2011, the City adopted comprehensive land development regulations that allow redevelopment of the existing number of units in the Resort Housing District, provided that the resort use of the property is retained.

The following items remain in the City’s Redevelopment Planning Work Program:

Redevelopment of nonconforming resort housing uses located outside the Resort Housing District.

Redevelopment of commercial uses in Commercial Districts.

Redevelopment of residential uses in Residential Districts. This analysis will include an evaluation of a small number of single family dwellings that are located on lots that are “unbuildable” if vacant.

The continued recovery and maintenance of the local economy, is needed to restore and maintain property values in both the residential and commercial sectors, including resort housing.

The community's interest in the development of a Town Center/Town Square, considered in the Plan for Community Design, has evolved. The Master Parks and Recreation Plan recognizes the community benefit in providing a place to serve as a focal point for community activity, special events and informal assembly.

The natural Gulf Beach, including its waters, is recognized for its significant contribution to the character of the community. Offshore areas, such as Captiva, the Causeway islands and other near-Island lands, and the waters of San Carlos Bay, Pine Island Sound and the Caloosahatchee River also impact the character of the community. The maintenance of the character of the community is an important component of the *Sanibel Plan*.

A City Council goal is to undertake a study of the carrying capacity of Sanibel's beaches to evaluate current policies, plans, regulations and management strategies and advance recommendations to maintain and improve the Island's natural beach for its value to wildlife and contribution to the community's character.

Permitted Uses

The use of land and buildings in the City of Sanibel should be determined by the capacity of natural and human-made environments to accommodate such uses without hazard to health, safety and welfare of the citizens and visitors to the City. The determination of permitted uses also should take into account existing patterns of development, the need to maintain compatibility with existing uses and the desire to retain the character of the community.

The *Sanibel Plan* provides that the type and intensity of future land uses permitted will be determined by the capacity of the

City to accommodate further development in an orderly manner. In addition to these overall considerations, environmental factors intrinsic to each ecological zone, compatibility with existing land uses, availability of adequate human support systems and compatibility with all elements of the Plan influenced the choice of permitted uses and development intensity.

The following chart provides a guide for permitted uses established in the Land Development Code.

Permitted Use by Ecological Zone	
Gulf Beach: Conservation Passive Recreation Beach Accessways	Lowland Wetlands: Conservation Passive Recreation Public Facilities Agriculture
Bay Beach: Conservation Passive Recreation	Low Intensity Residential: Single family detached
Mangroves: Conservation Passive Recreation Very Low Intensity Residential: Single Family detached	Upland Wetlands: Conservation Passive Recreation Public Facilities Agriculture
Upland Wetlands: (Cont'd.) Low Intensity Residential: Single family detached, Duplex and limited Multi-Family in designated areas	Blind Pass: Conservation Passive Recreation Public Facilities Low Intensity Residential: Single Family detached, Duplex and limited Multi-family
Mid-Island Ridge: Conservation Active & Passive Recreation Agriculture Public Facilities Low and Moderate Intensity Residential: Single family detached Duplex, and Multi-family	Commercial Uses*: In designated areas of Altered Land, Mid-Island Ridge, Blind Pass, and Upland Wetland Zones
	Environmentally Sensitive Lands*: Residential Uses are Prohibited

Permitted Use by Ecological Zone (Cont'd.)	
Resort Housing Uses*: In designated areas of Gulf Beach Ridge and Altered Land Zones	Wetlands Conservation Lands*: In designated areas of the Fresh-water Management Area
Gulf Beach Ridge: Conservation Active & Passive Recreation Public Facilities Residential: Single family detached, Duplex and Multi-family	Altered Land: Conservation Active & Passive Recreation Agriculture Public Facilities Low and Moderate Intensity Residential: Single family detached Duplex and Multi-family
*Permitted Uses for these overlay Zoning Districts (see Article 4. Official Maps) are established in the Land Development Code.	
Source: 1976 Sanibel Comprehensive Land Plan, as amended.	

Plan for Permitted Uses

This section of the Plan discusses the general principles from which future permitted uses are derived. It is the intent of the Plan to allow the continuation of existing uses in the manner set out in the Land Development Code. The regulations controlling permitted uses are set forth in the Land Development Code. The Land Development Code may permit certain conditional uses in various ecological zones, which uses are not specified herein, provided such uses are of a type and intensity consistent with the intent and purpose of the Plan, and provided such uses are limited and controlled by performance standards sufficient to accomplish the objectives of the Plan.

Provisions of the Plan

1. Residential uses are prohibited in Preservation Districts (The Gulf Beach and Bay Beach Ecological

Zones) and in the Environmentally Sensitive Lands Conservation District. In addition to conservation use, passive recreation is permitted in these Districts. In clarification of activities that constitute or that are compatible with passive recreation uses, the City prohibits horseback riding on the beach.

Lawfully existing residential uses located in the Gulf Beach and Bay Beach Zones are permitted to continue that use and to build-back that structure and reestablish the residential use if the structure is substantially damaged by a natural disaster.

Lawfully existing accessory swimming pools and accessory structures are permitted to be redeveloped in the Gulf Beach and Bay Beach Zones, subject to the criteria in the Land Development Code.

2. Continue to restrict permitted uses in certain residential areas to single family residential structures.
3. Prohibit accessory uses that will significantly increase the intensity of the permitted use.
4. Restrict accessory uses that will have a deleterious effect on the carrying capacity of the beach.
5. Prohibit timeshare dwelling units, including fractional ownership, outside the Resort Housing District.

Development Intensity

The constraints imposed by the need for natural resources protection, hurricane safety and adequate delivery of services, clearly demonstrate that unlimited future population growth and unregulated use of land would be hazardous to health, safety and welfare of the public. To minimize these hazards and to maintain the character of the community, it is essential to limit the total number of dwelling units, including hotel and motel units, trailer spaces, condominiums, time share units, duplexes and single family houses to a total of 9,000 units. The plan for residential development intensity adopted in 1976 contemplated approximately 7,800 dwelling units if the City built out in conformance with all the regulations in effect with adoption of the 1976 Comprehensive Land Use Plan.

If dwelling units are kept within a range of approximately 9,000 units, the water consumption and sewage generation can be handled in a manner consistent with the public health, safety and welfare, based on present knowledge.

Moreover by keeping the number of persons using the Island to these levels, it should be possible with careful planning to safeguard the lives of the people on Sanibel and Captiva in case of all but the most extreme hurricanes.

The formula used to allocate densities throughout the City in the 1976 Comprehensive Land Use Plan is described in the appendix to the March 1976 draft of the Plan. That formula took into account the municipal economy, physical land capability and the adequacy of human support systems including the proximity of land to them. Policies were developed that directed future growth to areas where services are available. Environmentally valuable or hazardous areas were proportionately allocated less growth in development intensity.

The formula also took into account capital investments already made to prepare land for development and the degree to which a project or subdivision was improved and built-out. The result of this process allocated 2,000 dwellings across the island in densities ranging from one dwelling unit per 33 acres to five dwelling units per acre, depending upon the location, ecological zone and the extent of improvement to the land. Once the units were allocated under the formula, the Planning Commission made adjustments taking into account consideration of existing development patterns and the extent to which existing subdivisions and projects are consistent with the goals, objectives, and policies of the Comprehensive Plan. In some cases adjustments were made to ensure that the density allocation would not permit higher densities than would be consistent with the character of existing residential areas.

No development is permitted in the Gulf Beach and Bay Beach Preservation zones but these areas were allocated a residential density, all of which must be built landward of these Preservation Zones.

Because of increases granted in residential development intensity between 1976 and 1988, which increased the potential number of dwelling units from approximately 7,800 to approximately 9,000, further Island-wide increases in density are not readily supportable. However, some modest adjustments in density, either increases or decreases, may need to be considered on a case-by-case basis to achieve other objectives of the comprehensive land use plan. The following factors indicate why Island-wide increases in density are not generally supportable in the upcoming planning period:

- Changes have already been made by City Council, where warranted, to residential densities during 1976-1988. Examples include relief granted to

owners of pairs of contiguous lots meeting certain standards, increased residential densities along Periwinkle Way to provide alternatives to commercial development, and adjustments made as a result of re-mapping the City's ecological zones in 1979, and where unique circumstances relating to a parcel were found to exist that had not been fully considered at the time the land use plan was adopted

- During peak season, Periwinkle Way, the Island's main artery, is used by more vehicles than many residents and property owners find acceptable
- The capability of the City to achieve the objectives outlined in the Safety Element of the Plan, particularly to provide the opportunity for everyone to evacuate safely
- The goals of the Comprehensive Plan are aimed at the conservation of natural resources. An inventory of vacant land in 2005 indicated that almost two-thirds of the vacant land on the Island is located in either the Mangrove, Lowland-Wetland or Upland-Wetland Ecological Zones, which are not readily developable unless the environmental precepts of the Plan are set aside
- Hurricanes pose a significant threat to lives and property on the Island most vulnerable to storm damage from sustained high winds, scouring due to wave action, battering from floating debris and flooding due to storm surge
- The electors have amended the City Charter to require that a majority of the electors voting in the

election is necessary to approve increases in residential density

There are circumstances, however, under which residential density could be increased for a specific site if mitigating considerations are found to exist that would outweigh potential drawbacks and work toward achieving other objectives of the *Sanibel Plan*. These are:

- Where opportunities are provided for below market rate housing
- To implement the Plan for Commercial Development by providing alternatives to commercial development through increased residential densities
- To promote further conservation of environmentally sensitive lands by creating incentives to set aside sensitive land from development, such as the transfer of development rights
- Where unique circumstances are found to exist on a parcel, which had not been fully considered at the time of the initial adoption of the Development Intensity Map in 1976
- Where there is a resultant, overall Citywide decrease in the number of permitted dwelling units, provided that the density decrease does not originate on lands in the Environmentally Sensitive Lands Conservation District

Intensity of non-residential uses are measured in a number of ways, including number of vehicular trips generated, number and type of uses located on a parcel, floor area, size and number of structures, hours of operation, water consumption, wastewater generation, and the like. Regulating intensity of

use in commercial districts and for all non-residential land uses is important:

- To assure that adverse impacts on adjacent lands and developments are minimized
- To assure that sufficient land area is available to accommodate the parking, drainage, wastewater disposal and service needs of the commercial development
- To assure that enough native vegetation for the development is preserved or planted to have a pleasing appearance to both passersby and customers
- To assure that the level of activity is in keeping with the maintenance of the character of the community

Plan for Development Intensity

The distribution of residential development intensity shall be in accordance with the density allocation on the Development Intensity Map of this Plan. The implementation of the Development Intensity Map is incorporated in the Land Development Code. Modern Platted Subdivisions were identified in the initial *Sanibel Plan* and that designation is applied in the method of calculating permitted density. A listing of Modern Platted Subdivisions established in the initial *Sanibel Plan* is provided in the following chart.

MODERN PLATTED SUBDIVISIONS

(Residential Subdivisions Developed Prior to July 8, 1976)

1. Sanibel Estates	25. Sanibel Bayous
2. Anchors Aweigh	26. Dinkins Bayou
3. Shell Harbor	27. Del Sega
4. Shell Basket	28. Castaways Estates
5. Sanibel Shores	29. Caloosa Shores
6. Beachview Country Club	30. Leisure Acres
7. Sanibel Center	31. Belle Meade
8. Lagoon Estates	32. Windrow
9. Sanibel Lake Estates	33. Sanibel River Estates
10. Southwinds	34. Sanibel Pines
11. Periwinkle Properties	35. Sanibel Isles
12. Kearns	36. Water Shadows
13. Palm Lake	37. Gumbo Limbo
14a. Lake Murex	38. Sanibel Harbours
14b. Little Lake Murex	39. O. L. Richardson
15. Bright Water	40a. Dunes - Phase 1
16. Ranchos Way	40b. Dunes - Phase 2
17. Seaside	41. Briant Michigan
18. Sea Oats	42. Sedgemoor
19a. East Rocks	43. Sanibel Woodlands
19b. West Rocks	44. Cardinal Ridge
20. Terrill Ridge	45. Poinciana Circle
21. Gulf Pines	46. Sawyers
22. Gulf Shores (f/k/a Tahiti Shores)	47. Los Conchas
23. Chateau Sur Mer	48. S. B. Woodring's
24. Tradewinds	49. Betts

Source: 1976 Plan, as amended.

Provisions of the Plan

1. Residential density computations are based on the assumption that dwelling units will have an average occupancy of 2.2 persons per unit. To the extent that dwelling units are of a type or size that will increase the average occupancy rate, the permissible number of units may vary from the number shown on the Development Intensity Map in a manner to be determined by implementing development regulations in the Land Development Code.

2. By such implementing development regulations, the City Council may also permit residential densities in excess of those shown on the Development Intensity Map as incentives to the provision of below market rate housing.
3. Through implementing ordinances, to be incorporated into the Land Development Code, the City Council may also permit development of lands in excess of the residential densities shown on the Development Intensity Map in order to recognize vested rights and constitutional limitations with respect to lands individually owned prior to adoption of the initial Sanibel Comprehensive Land Use Plan.
4. To maintain the stock of short-term occupancy units in the City, existing hotels, motels and resort condominiums that are rehabilitated or redeveloped in accordance with the *Sanibel Plan* and Land Development Code are allowed to maintain up to their existing density, provided that redeveloped resort accommodations continue the short-term occupancy use of that prior development.
5. Existing dwelling units that are substantially damaged by a natural disaster are allowed to build-back.
6. During this planning period, the City will continue to pursue its Redevelopment Planning Work Program. The Redevelopment Work Program has addressed, on an Island-wide basis, build-back following substantial damage by a natural disaster. The Redevelopment Work Program has also addressed redevelopment in the Resort Housing District. The

Redevelopment Work Program includes review of nonconforming resort housing uses located outside the Resort Housing District, review of redevelopment in Commercial Districts and the review of redevelopment in Residential Districts. The Redevelopment Work Program will continue to evaluate how redevelopment or modernization of existing nonconforming properties can balance property rights with environmental, public safety and community welfare considerations within the framework of the *Sanibel Plan*.

7. The plan for controlling the intensity of commercial uses has several components. The first is to measure intensity of use as a floor area ratio, defined as the ratio of floor area to parcel size. In order to provide incentives in the development regulations for achieving planning objectives, the floor area ratios (FAR) reflect the need to:
 - Differentiate development intensity between Periwinkle Way and the Town Center District and Palm Ridge Road area so as to reduce the impact of commercial development on turning movements and traffic flow on Periwinkle Way and to preserve the ambience of Periwinkle Way
 - Limit creation of additional commercially zoned lands which can lead to commercial overbuilding
 - Limit the intensity of conditional uses to the extent that these uses generate traffic impact to a significantly greater extent than permitted uses

- Limit the intensity of non-residential uses, permitted to be located in residential areas, to the extent that these uses are not disruptive of the residential character of the surrounding community
- Use of the residential densities permitted on lands used for alternative, non-residential conditional uses, shall be reduced proportionately to the intensity of use of the non-residential use on that parcel

Commercial Development

For more than 35 years, the *Sanibel Plan* and its Land Development Code have been directed to ensure that the commercial sector of the community serves and blends in with the residential sector and natural resources of the community. Neither the commercial sector nor any of its components should be out of character with the Vision Statement of this Plan.

Commercial Districts

Unlike most communities, Sanibel is located on a relatively isolated barrier island and therefore attracts almost no casual travelers passing through on their way elsewhere. Thus, Sanibel needs fewer of the typical roadside types of commercial use than most communities its size.

Sanibel attracts a variety of tourists with special interests, such as shell collectors, beachgoers, birdwatchers, fishermen, tennis players, etc. Because few other communities attract a similar mix of tourists, it is difficult to provide a pattern on which commercial land uses can be based.

Because of the potential for retail overbuilding and its related adverse impacts, the potential supply of retail space has been reduced, consistent with reasonable demand considerations. Because of limited retail demand relative to the existing retail supply and the intent to preserve the character of the community, conditional use standards have been established for formula retail uses.

Incentives and disincentives have been incorporated into the Future Land Use Map and land use regulations to guide commercial development into clusters, rather than in a continuous commercial strip. Several commercial areas (nodes) along Periwinkle Way that are consistent with the City's existing land use pattern were placed in one of the City's three Commercial Zoning Districts, including outlying locations at the east and west ends of the Island.

The City's commercially-zoned lands, depicted on the Commercial Zoning Map of the Future Land Use Map series, consists of three Commercial Zoning Districts -

The GC - General Commercial District

The TCG - Town Center General Commercial District

The TCL - Town Center Limited Commercial District

The purpose of the General Commercial District is to provide for clusters of commercial development along Periwinkle Way, rather than a continuous strip. This district provides opportunities for a wide range of commercial activities that primarily serve islander needs. The General Commercial District is designed to permit low intensity commercial development with a wide variety and mixture of retail, office and service

uses, with integrated residential uses offered as an alternative to commercial use.

The purpose of the Town Center General Commercial District is to provide for commercial and mixed use development in the geographical center of the City. Because of this areas relatively good access from Periwinkle Way, Palm Ridge Road and Tarpon Bay Road and proximity to civic, cultural and governmental uses, the Town Center General Commercial District is a preferred location for retail and mixed use development and therefore higher floor area ratios are permitted. The Town Center General Commercial District is designed to provide a wide variety and mixture of retail, office and service uses, along with integrated residential uses of low and moderate intensity.

The purpose of the Town Center Limited Commercial District, like the Town Center General Commercial District, is also to provide for commercial and mixed-use development in the geographical center of the City. Because of this areas relatively good access from Periwinkle Way, Palm Ridge Road and Tarpon Bay Road and proximity to civic, cultural and governmental uses, the Town Center General Commercial District is a preferred location for retail and mixed use development and therefore higher floor area ratios are permitted. The Town Center Limited Commercial District is designed to provide an opportunity for a variety and mixture of retail, office and service uses which support the establishment and retention of island and resident serving commercial uses and discourage commercial uses that cater principally to the day visitor to the City.

Specific permitted and conditional uses as well as required conditions (such as, maximum floor area ratio, building height, setbacks and limitations on coverage with impermeable

surfaces) for each of the three Commercial Zoning Districts are contained in the Land Development Code.

Alternative land uses to commercial development on Periwinkle Way, between the commercial nodes, have been encouraged. These land use alternatives are needed in order to discourage the expansion of commercial development outside designated commercial districts.

Additional retail development is discouraged on Periwinkle Way and encouraged in the Town Center District (the Palm Ridge Road area) because of the latter area's relatively good access from Periwinkle Way, Palm Ridge Road and Tarpon Bay Road and because it is the geographical center of the Island. Redevelopment planning policies have been prepared for the Periwinkle Way West Commercial District.

On land located outside designated Commercial Districts, opportunities have been provided for development of special uses that are generally not either retail or office in nature, in instances where their development will not negatively impact adjoining land uses. The purpose of this district is to enable such special uses opportunities to locate on Sanibel in order to provide convenience services to Island residents and businesses.

The Special Use Districts that have been established as part of the Ecological Zones Map are:

The Island Water Association plant and administrative facilities

The Sanibel Marina

The San-Cap Medical Clinic

The Beachview Golf Course

Opportunities have been provided for the provision of limited amounts of residential development in commercial zones, under controlled conditions, to provide opportunities for affordable housing and offer additional alternatives to commercial development.

The City desires to maintain a balance between the residential and resort (tourist) segments of the community so that Sanibel remains an attractive and desirable residential community. It is apparent that the commercial developer views Sanibel as primarily a non-resident commercial market. And, left unregulated, this trend can be expected to continue to the point that Sanibel could become a destination shopping area, contrary to public desires.

The suitability of the Periwinkle Way corridor for residential development has been recognized, but the pressure for additional commercial zoning and development can be expected to continue. Undertaken as part of the City's Redevelopment Planning Work Program, an updated analysis of Sanibel's environmentally based market and economy supports the implementation of the Plan for Commercial Development.

The benefits that accrue to the community's public health, safety and welfare, through implementation of the Plan for Commercial Development, are:

- The development of an attractive residential environment that maintains the ambience and aesthetic charm of Sanibel
- The reduction of the likelihood of retail overbuilding
- The improvement of traffic flow by reducing the potential for curb cuts and turning movements on

Periwinkle Way likely to result from unchecked commercial development

The City has addressed the compatibility of commercial and non-residential structures with the character of the community.

Resort Housing

Another type of income producing use in the City of Sanibel is resort housing. Prior to the construction of the Causeway, such housing took the form of small motels and cottages and beach resorts. The construction of the Causeway brought more and bigger beach resorts.

The late 1960s saw a State-wide boom in the construction of condominiums extending into the early 1970s. Lee County permitted the construction of numerous condominium complexes some of which were constructed at locations dangerously close to the water and built at densities that detracted from the character of the Island as a desirable residential environment. Meanwhile, other condominium projects moved more and more into the resort hotel business with widely advertised short-term rentals.

These dramatic and rapid changes in the nature of the tourism business on Sanibel have had numerous impacts on the environment. The entire character of the community as a low-density settlement compatible with the natural environment was threatened. The unique environmental character of the Island that provided the primary attraction for both tourists and permanent residents was then in danger.

The protection of the character and long-range base of the tourism industry demanded a significant reduction in the potential density of resort housing accommodations. The City

had no desire and little capacity to cater to tourists who preferred to vacation in a high-density, urbanized type of environment. Many other areas in this State willingly provide for and eagerly solicit the trade of such visitors. Sanibel offers unique charms, for which some people will pay a premium while they exist. However, if these unique charms are destroyed by overuse, the City will have little to offer.

Many of the finer beach resorts in Florida and throughout the world have been developed at low densities of five or six units per acre. Such densities permit the provision of amenities and services that will attract more selective tourists willing to pay a premium for Sanibel's special character. Higher densities typically contribute to reductions in the carrying capacity of the beach for use by wildlife.

With few exceptions, resort housing uses are permitted only in the Resort Housing District.

In order to maintain the residential character of the resort housing area and to preserve to the maximum extent possible the natural features of this area, commercial development should be permitted only to the extent that it complements and primarily serves the needs of the residents of resort housing on-site without disrupting the preservation of the scenic beauty of the natural beach.

Resort housing developments, particularly the larger ones, depend in large part on non-guests to help support their accessory commercial uses, especially restaurants. Had resort housing developments been permitted to continue supporting their commercial developments by providing service to non-guests, a further expansion of Sanibel's commercial districts could have resulted. The City has modified its regulations for future commercial development in the Resort Housing District to

assure that the type and size of commercial uses permitted are supportable by the resort's guests.

Existing and new commercial developments located in the Resort Housing District need to be compatible with the *Sanibel Plan's* objectives for scenic preservation and maintenance of the character of the community.

Only 12 resort units have been built since the mid-1980s. The City has had success in limiting resort housing to the Resort Housing District and thereby protecting non-resort residential areas. With the attainment of an appropriate balance between resort housing uses and non-resort housing uses, the City has provided means to retain and redevelop existing resort housing uses.

Although additional resort development is not anticipated, the City analyzed existing conditions and trends associated with the maintenance, improvement and redevelopment of resort properties and took steps to retain existing dwelling units in motels, hotels and inns so that when build-back or redevelopment occurs on these properties, the properties are redeveloped as motels, hotels and inns. It is in the interest of both residents and the business community to maintain a block of accommodations available for short-term occupancy. Visitors using these accommodations provide customers or businesses and potential buyers for realtors and home sellers. A motel, hotel or resort complex can build-back the existing number of units if the buildings are substantially damaged by a natural disaster. A motel, hotel or resort complex is allowed, with appropriate restrictions, to redevelop up to the existing number of units, if the number of units exceeds the number allowed by the Development Intensity Map.

Provisions of the Plan for Commercial Development

1. Encourage, through the Plan for Commercial development, implementation of the Economic Assumptions of the Plan.
2. Require commercial uses to locate in the areas designated as Commercial Districts on the Commercial Zoning Map and to develop in conformance with development regulations set forth in the Land Development Code and the guidelines established in the Plan for Commercial Development.
3. Discourage existing commercial uses that do not conform to the Commercial Zoning Map and the Land Development Code from further expansion. These non-conforming uses should revert to a use permitted in the district in which they are located.
4. Left unregulated, the proliferation of retail businesses that do not serve residents can frustrate the City's desire to retain a unique and diverse service and retail base in the local economy and to provide opportunities for small, local businesses. The Plan for Commercial Development shall ensure that the City's regulations encourage the continuation of existing businesses and the establishment of new businesses that serve the residential segment of the community. City Council has established and reaffirmed a goal of preserving local businesses and retaining a proper balance between the resident-serving and resort (tourist) segments of the commercial sector of the community.
5. In an effort to maintain a proper balance between the resident-serving and resort (tourist) segments of the commercial sector of the community, the City has amended its commercial land use regulations. These regulations establish and implement the following:
 - A maximum percentage of commercial floor area (balance and mix of businesses) occupied by formula retail stores
 - A limit on the size of specific commercial retail units
 - A limit on the size of commercial buildings
 - A requirement that developments of new commercial centers and redevelopments of existing commercial centers, that contain more than 12,000 square feet of retail floor area, must demonstrate that no adverse economic or other consequence would result to this unique Island community from the development or redevelopment of the center
6. All commercial uses, including formula retail uses, shall retain the historical and visual character of the commercial sector and the unique and diverse service and retail base in the local economy.
7. Continue to seek alternatives to commercial development on Periwinkle Way by monitoring the feasibility of the incentives contained within the development regulations.

8. Reduce the potential for future commercial development by providing developers with an incentive to develop commercial parcels as residential, providing that the residential development is consistent with the purpose and objectives of the *Sanibel Plan* and is consistent and compatible with surrounding land uses and furthers the objectives of the *Sanibel Plan*.
9. The limited outlying locations in the Commercial District, at the east and west ends of the Island, should be reserved for commercial uses that serve the surrounding residential areas. Residential uses should be permitted and encouraged in the form of mixed-use development. Residential uses that replace existing commercial uses should be permitted only when the neighborhood will not be significantly negatively impacted by the loss of the commercial uses.
10. Attempt to maintain a balance between various types of commercial activities by discouraging commercial development that exceeds the amount that can be supported on Sanibel based on retail market analysis, the capabilities of human support systems, hazard mitigation objectives, and other planning considerations. As part of the City's Redevelopment Planning Work Program, an update of the City's environmentally based market and economic analysis was completed in order to guide commercial development.
11. Designate land for commercial development sufficient to serve the needs of residents and guests of the resort housing segment of the community, and adopt development standards to assure opportunities are available for a wide range of commercial activities to serve the needs of the resident and seasonal population.
12. Retain development standards that take into account the full range of factors which contribute to intensity of use.
13. Restrict future commercial uses in the Resort Housing District, including the size of these uses, to only those that are designed to be entirely supportable by the resort's guests and that do not disturb the scenic beauty of the natural beach or cause degradation of the natural environment. Commercial uses in the Resort Housing District shall not diminish the carrying capacity of the beach for use by wildlife.
14. Retain development standards that assure commercial developments contribute to maintenance of the character of the community by maintaining substantial vegetation buffers and by presenting architectural features that are compatible with the community as a whole.
15. The City desires to retain and improve the historical and visual character of the Commercial Sector, to wit:
 - Implement development standards which assure commercial structures do not employ what is often referred to as "cookie-cutter" architecture and do employ architecture that contributes to the maintenance of historic, visual, scenic and architectural

character of the commercial sector of the community

- Large commercial buildings shall be designed to appear as a group of buildings that vary in scale and size
- Commercial buildings shall not appear monolithic
- Commercial buildings shall have architectural features and patterns that provide: visual interest from the perspective of the pedestrian, bicyclist and motorist appear to reduce building mass and recognize and respect local character and site conditions
- Large facades, both horizontal and vertical, shall be broken up to present a more human scale, particularly to the public right-of-way view and the view of nearby residential uses

16. Apply development standards to existing conforming and non-conforming, as well as new, commercial development, to assure that the standards will have a desirable long-term effect on commercial development in terms of the community's goals.
17. As part of the City's Redevelopment Planning Work Program for Commercial Districts, include the enhancement of the scenic appearance of these areas.

Preservation and Community Design

The Community Design subsection establishes the physical design policies of the City that will complement the other elements of the Plan, pursuant to *Section 163.3177 (7)(f), Florida Statutes*.

The Vision Statement of the *Sanibel Plan* states:

"Sanibel is and shall remain a small town community whose members choose to live in harmony with one another and with nature; creating a human settlement distinguished by its diversity, beauty, uniqueness, character and stewardship."

...

Character: The City of Sanibel chooses to preserve its rural character in its setting within an urbanizing county. 'Auto-urban' development influences will be avoided. The commercialization of natural resources will be limited and strictly controlled."

The Vision Statement further states that:

". . . the dominant principle is Sanibel's sanctuary quality. Sanibel shall be developed as a community only to the extent to which it retains and embraces this quality of sanctuary. Sanibel will serve as attraction only to the extent to which it retains its desired qualities as sanctuary and community."

Prohibitions on formula restaurants and on drive-ins and drive-throughs at eating places are examples of land development regulations intended to maintain the character of the City of

Sanibel. Other land development regulations, intended to achieve other objectives, also contribute to maintenance of the character of the community. Yet every development/redevelopment in the City impacts the character of the community. It is also important to continue to monitor the incremental, as well as the cumulative, impacts of developments on the character of the community.

The character of the community is also impacted by near-Island development and activities and by more distant development and activities that affect the quality and quantity of surrounding waters.

A substantial effort was devoted to the study of neighborhood and community compatibility for single family dwellings. As part of the City's Redevelopment Planning Work Program, City Council evaluated and amended regulations intended to maintain the character of the community by better ensuring neighborhood and community compatibility for new, expanded and replacement single family dwellings. New, expanded and replacement single family dwellings shall not be constructed or altered, so that their size, bulk, mass, height, location or orientation unreasonably infringe upon adjoining properties or interrupt the rhythm, harmony and character of the established neighborhood.

As part of the City's Redevelopment Planning Work Program, City Council updated the City's land development regulations to help retain and accommodate existing and new businesses that serve the City's residents. To maintain and enhance the attractiveness of the streetscape and the existing character of the community, buildings should have architectural features and patterns that provide visual interest from the perspective of the pedestrian, bicyclist and motorist, appear to reduce building

mass and recognize and respect local character and site conditions.

The Master Parks and Recreation Plan recognizes the community benefit in providing a place to serve as a focal point for community activity, special events and informal assembly. The Sanibel Community Park is intended to fulfill a portion of this function.

The Redevelopment Planning Work Program for the City of Sanibel is a major part of the City's ongoing planning process. This study has been and continues to be a comprehensive effort to ascertain community needs in addressing redevelopment activities. The 2005 Evaluation and Appraisal Report was a starting point for the Redevelopment Study. It is anticipated that the Redevelopment Study will address: redevelopment in residential neighborhoods, redevelopment of nonconforming resort housing uses located outside the Resort Housing District and redevelopment in the Commercial District. The maintenance of the character of the community has been and will continue to be a primary objective of the Redevelopment Study.

Provisions of the Plan for Preservation and Community Design

1. Continue to analyze, and appropriately revise, the regulations of the Land Development Code to better address local concerns for the adequate protection of the character of the community.
2. Consider development of a specific plan that will include strategies to improve and integrate City Hall and the surrounding civic, cultural and recreational

uses to serve as a focal point for community activity, special events and informal assembly.

Historic Preservation

Structures

- Historic structures should be preserved and maintained in a condition that represents their historic and architectural features

Roadways

- The Sanibel road system has historically served an area that is rural in character. Improvements to this road network should be consistent with the maintenance of the historic rural nature of this roadway system and the surrounding land uses
- People experience Sanibel by driving its streets and roads. The appearance of these streets and roads does as much to set the tone for the community as does any element of community design. Traffic calming and other techniques should be incorporated into the design and maintenance of Sanibel's streets and roads to reinforce the community's desired sanctuary quality and to alert motorists that the roadway is shared with non-motorists

Beaches

- Uses of the natural beaches of the City, and uses of surrounding lands, should be consistent with the maintenance of the historic character of this natural resource

Shared Use Path System

- Shared use paths should be constructed for bicycles, pedestrians, wheelchairs, and other non-motorized users, setback from the edge of the traveled-way for motor vehicles where possible, meandering in the right-of-way without sharp curves or obstructions to vision
- Major arterial and collector roads should all have bike paths connecting residential areas to other residential and commercial and non-residential sections of the Island. Wherever possible, the City should acquire sufficient right-of-way to permit a buffer between the edge of the road and the shared use path. Neighborhood roads can be used for bicycle and pedestrian travel and auto-mobile speeds on roads should be regulated in all neighborhood areas to maintain safety for the health and welfare of all citizens. Traffic calming techniques should be employed to let the motor vehicle operator know that non-motorists share the streets and roads

Beach Access Walkovers

- Beach walkovers should be constructed to protect the beach dune system and beach vegetation essential for continued preservation of shorelines

Signs

- The visual appearance and physical construction of sign systems are not only determined by the graphic elements of type and style, but also by the environment in which the signs appear and the

function the signs are expected to play. The most important factors are legibility and the overall uniformity and consistency in application. Information should be communicated in a straight forward and aesthetically pleasing manner. Three basic systems for public signs for the Island are:

- Circulation Components - directional in nature, to aid in control and guidance of vehicular, bicycle and pedestrian traffic
 - Identification Components - to reveal the functions of buildings, open space, etc
 - Information Components - to make the traveler aware of services, amenities and the environment around him
- All public signs should conform to designs and information characters of the international traffic signs whenever practicable
 - Private signs should be restricted in size and designed to be in character with the Island. In order to avoid obstruction of evacuation routes, freestanding private signs should be set back from the road right-of-way. Such signs should be limited in size to withstand local wind forces and be constructed in such a manner as to preclude dislodgment during a storm and encroachment on the right-of-way evacuation routes if toppled over by wind

Utilities

- The design of utility systems should consider ecological implications and minimize detrimental effects. All utility lines should be installed consistent with the provisions of the Plan for Electric Utility in Section 3.3.9

Vegetation Buffers

- Vegetation buffers should be installed and maintained on both sides of all arterial and collector roads, in conformance with traffic safety considerations
- Vegetation buffers should be installed and maintained on all sides of commercial development
- Vegetation along streets and roads should be an integral component of traffic calming techniques

Adaptive Design

- In a landscape as dynamic and varied as Sanibel's, building form should be adapted to the opportunities and constraints of the Island's climate, soils, vegetation and hydrology. Islandwide and ecological zone performance standards should ensure that the human-made environment will preserve the valuable functions of the Island's ecosystem and that the safety and welfare of residences will be protected, to a certain degree, from storms, by adequate setbacks from the coast and the elevation of the habitable areas of buildings above the base flood elevation. However, the buildings can be oriented to maximize natural

ventilation through the design of porches and breezeways. Shade can be increased by the size of overhangs and natural drainage enhanced by avoiding gutters. These design strategies can increase human comfort and decrease maintenance cost

- The City is receptive to new technologies that conserve resources and promote efficiencies; however, even “green buildings” have to be designed in a manner that is compatible with the character of the community

Community Character

- All residential and non-residential structures should be designed and constructed in a manner that is compatible with the character of the community. For both residential and non-residential buildings, “cookie-cutter” architecture should be avoided

Regulatory Elements

- The elements of this Plan are designed to direct and control use of the Island’s natural resources as a human habitat in a fashion commensurate with the goals and objectives of the Charter of the City of Sanibel. In addition to the requirements of this Plan, therefore, the health, safety and welfare of the citizens of the City of Sanibel require that the City have a land development code and implement the State building code, plumbing code, electrical code and life safety code. These codes are necessary to ensure that the best engineering and construction practices are employed on the Island

Goals, Objectives and Policies

Goal Statement A

The three-part statement of the community’s vision of its future is a hierarchy; one in which the dominant principle is Sanibel’s sanctuary quality. Sanibel shall be developed as a community only to the extent to which it retains and embraces this quality of sanctuary. Sanibel will serve as attraction only to the extent to which it retains its desired qualities as sanctuary and community.

Objective A1

Sanibel is and shall remain a small town.

Policy A1.1. The City of Sanibel will foster quality, harmony and beauty in all forms of human alteration of the environment. The community aesthetic is defined as a casual style; one which is adapted to a relaxed island quality of life and respectful of local history, weather, culture and natural systems.

Policy A1.2. The City of Sanibel chooses to remain unique through a development pattern that reflects the predominance of natural conditions and characteristics over human intrusions. All forms of development and redevelopment will preserve the community’s unique small town identity.

Policy A1.3. The City of Sanibel chooses to preserve its rural character. “Auto-urban” development influences will be avoided. The commercialization of natural resources will be limited and strictly controlled.

Goal Statement B

The character and location of Future Land Uses in the City of Sanibel will:

- Promote safety and maintain evacuation capabilities
- Promote the protection of natural, environmental, economic and scenic resources
- Promote maintenance of enhancement of water quality, both in the Island's Freshwater Management Area and in the Island's off-shore coastal waters
- Promote adequate provision of human support systems
- Promote intergovernmental coordination
- Reflect the City's Capital Improvements Program

to ensure implementation of the objectives and policies of the *Sanibel Plan*.

Objective B1

Ensure that development intensities are maintained in a manner consistent with the City's Hurricane Evacuation Plan to permit evacuation to take place within times specified in the Southwest Florida Regional Hurricane Evacuation Study.

Policy B1.1. Maintain the residential densities on the Development Intensity Map that are consistent with adequate evacuation capabilities.

Objective B2

As development and redevelopment anticipated in the Future Land Use Element occurs, protect natural resources, including soils, by limiting development as a percentage of total land area.

Policy B2.1. Protect natural resources by application of best management practices and continued implementation of the development regulations and performance standards of the Land Development Code.

Objective B3

Ensure that public facilities and services (human support systems) that are necessary to meet adopted level of service standards are available concurrent with the impacts of future development.

Policy B3.1. No permits (development orders) will be issued for future development that would result in an increase in demand for facilities that do not comply with the minimum level of service standards for public facilities of the Plan.

Objective B4

Ensure the availability of suitable land for public facilities (human support systems) necessary to support development consistent with the Future Land Use Map, which is consistent with the densities and permitted uses regulated by the Development Intensity Map, Ecological Zones Map, Commercial District Map, Wetlands Conservation Lands Map and Resort Housing District Map.

Policy B4.1. Through implementation of the Land Development Code, support the provision and expansion of needed public facilities.

Policy B4.2. Public schools are permitted in the Altered Lands and Mid-Island Ridge zones designated on the Ecological Zones Maps of the Future Land Use Maps series of the *Sanibel Plan*.

Policy B4.3. Implement the interlocal agreement with the Lee County School District to coordinate on appropriate population projections, on infrastructure and planning and on the siting of new schools.

Objective B5

Ensure the protection of historic resources.

Policy B5.1. Incentives for the preservation of identified historic resources will continue to be incorporated in the adopted Land Development Code.

Objective B6

Development, consistent with the Future Land Use Map, that is consistent with densities and permitted uses regulated by the Development Intensity Map, the Ecological Zones Map, the Commercial District Map, Wetlands Conservation Lands Map and the Resort Housing District Map, will be managed by implementation and enforcement of the Land Development Code.

Policy B6.1. To implement the *Sanibel Plan*, including Future Land Use objectives, continue to maintain

regulations and standards in the Land Development Code which:

- Regulate the use of land and water
- Regulate the subdivision of land
- Ensure compatibility of adjacent land uses
- Provide for open space
- Ensure safe on-site traffic flow
- Provide for on-site parking

Objective B7

To discourage sprawl, ensure that future development is consistent with the Future Land Use Map, that is consistent with the densities and permitted uses regulated by the Development Intensity Map, the Ecological Zones Map, Commercial District Map, Wetlands Conservation Lands Map, and Resort Housing District Map.

Policy B7.1. The Plan for Permitted Uses, the Plan for Residential Development Intensity, the Plan for Commercial Development and the Plan for Community Design will continue to be implemented by the development regulations and performance standards of the Land Development Code.

Objective B8

Existing land uses that are nonconforming with the Future Land Use Map, that is, nonconforming with permitted uses regulated by the Ecological Zones Map, Commercial District Map, Wetlands

Conservation Lands Map and the Resort Housing District Map will not be expanded.

Policy B8.1. Permits will not be issued for the expansion of nonconforming land uses.

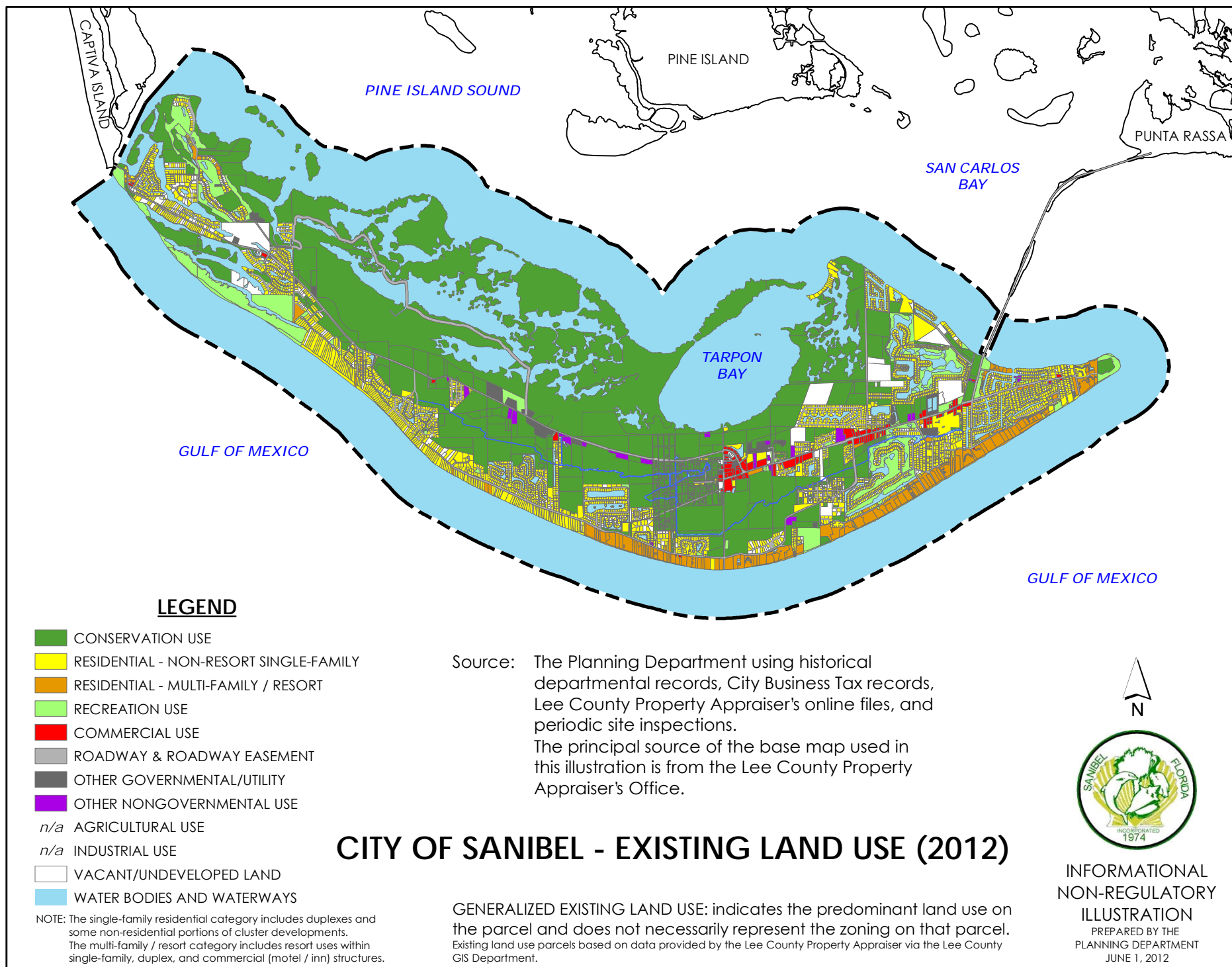
Objective B9

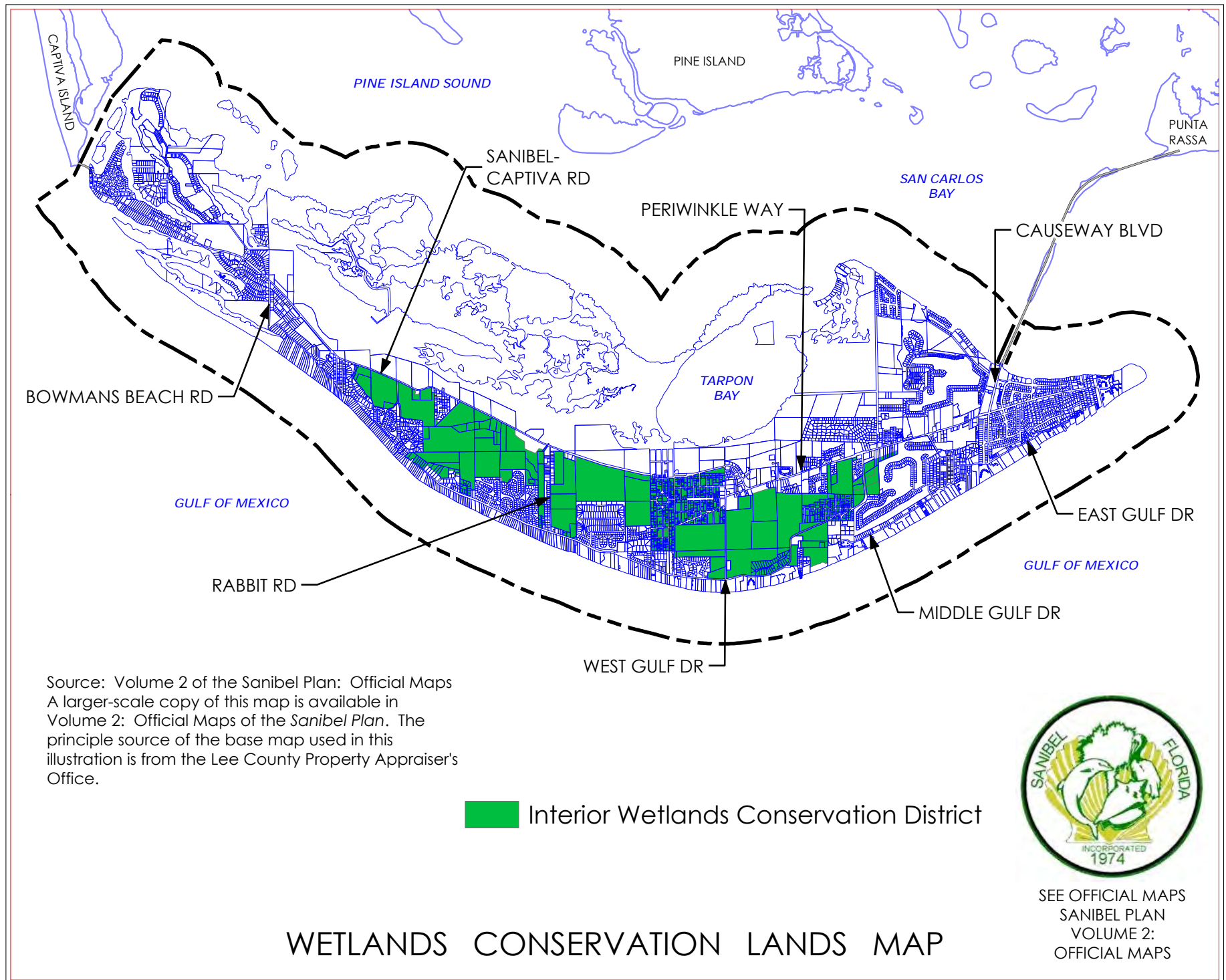
Continue the implementation of innovative land development regulations to achieve the objectives of the Plan.

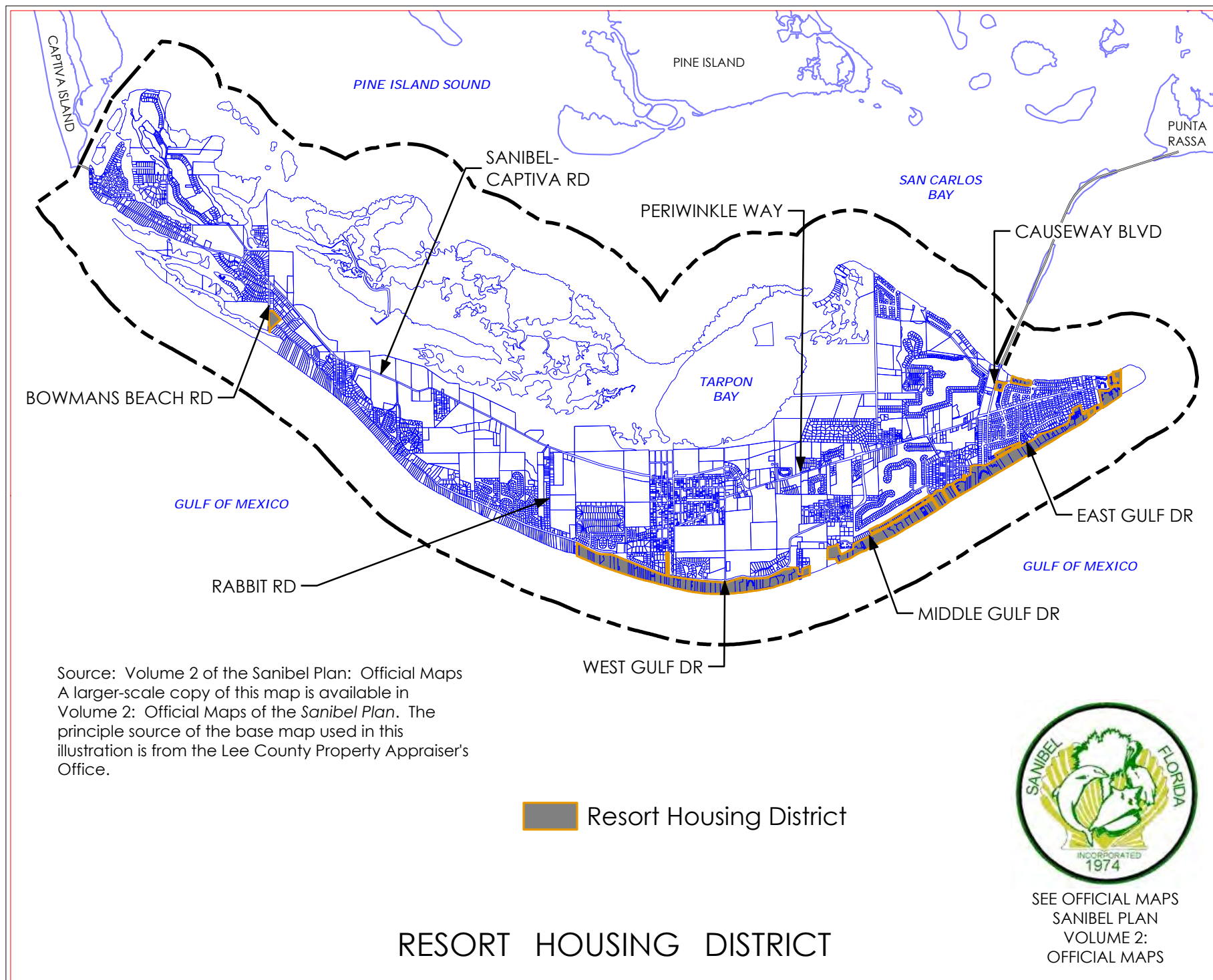
Policy B9.1. Annually review the Land Development Code to consider innovative techniques that can improve achievement of Plan objectives.

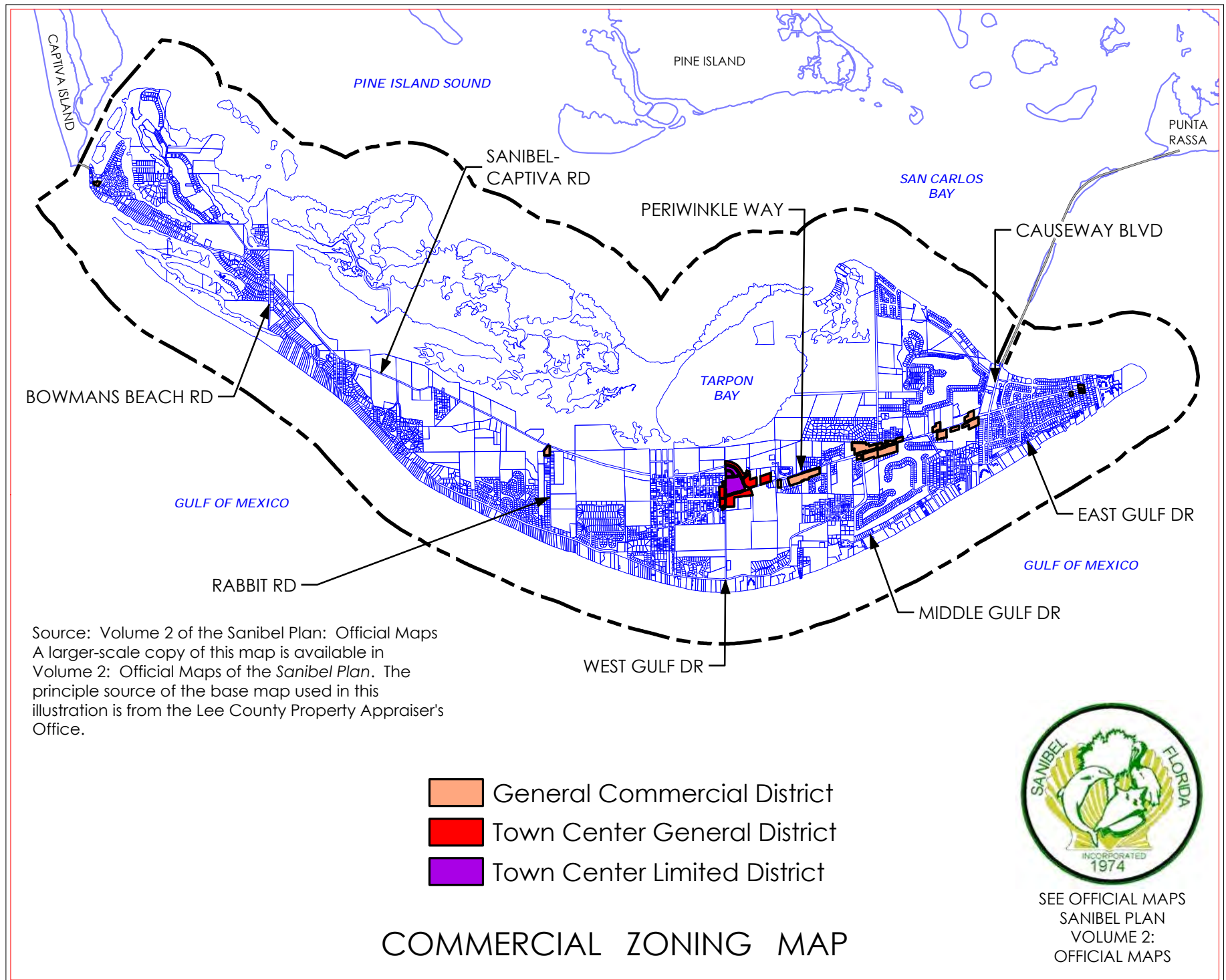
Objective B10

Coordinate with any appropriate resource planning and management plan prepared pursuant to Chapter 380, Florida Statutes and approved by the Governor and Cabinet.









Article 4. Official Maps

Part 4.1. Map Status

Background Discussion

The Future Land Use Map series and the Existing (2012) and Future (2022) Traffic Circulation Map are the adopted maps of the *Sanibel Plan*. These Official Maps are a re-adoption of the Official Maps adopted on August 5, 1997, by Ordinance no. 97-16 and on September 18, 2007, by Ordinance no. 05-007.

Some of the maps readopted by the 2012 EAR-based Plan Amendment have been converted to a digitized format. The conversion of the Ecological Zone Map and the Development Intensity Map is not included in the 2012 EAR-based Plan Amendment. The conversion of these two maps to a digitized format will be included in a subsequent amendment to the Official Maps of the *Sanibel Plan*.

The Official Map is the paper copy contained in the printed Official Maps of the *Sanibel Plan*, a copy of which is attached to the Ordinance that adopted the 2012 EAR-based Plan Amendment.

Unless noted otherwise, these maps have been prepared by the Sanibel Planning Department.

Unless noted otherwise, the timeframe for these maps is through the year 2022.

Future Land Use Map

The regulatory maps of the Future Land Use Map series consist of the following maps

- Ecological Zones Map
- Commercial Zoning Map
- Resort Housing District Map
- Wetland Conservation Lands Map
- Environmentally Sensitive Lands Conservation District Map
- Development Intensity Map

These maps, which are incorporated into the Sanibel Land Development Code as a means of implementing the *Sanibel Plan*, regulate permitted use and development intensity in the City of Sanibel.

Pursuant to *Florida Statutes, Section 163.3178*, most of the City of Sanibel is within the Coastal High-Hazard Area. An illustration showing the Coastal High-Hazard Area is provided in Section 3.2.1. For practical considerations, the *Sanibel Plan* considers all lands within the City as being located in the Coastal Area and the Coastal High-Hazard Area.

Section 4.1.1.

Future Traffic Circulation Map

The Future Traffic Circulation Map is provided on a single map entitled:

- Existing (2012) and Future (2022) Traffic Circulation Map

Section 4.1.1. Future Land Use Map Series

Pursuant to Section 163.3177(7)(h), Florida Statutes.

The City of Sanibel's Future Land Use Map is an aggregation of the maps provided with the *Sanibel Plan*.

The distribution, extent and location of the following land uses, regulated by the Future Land Use Map, are:

- Residential use
- Commercial use
- Agricultural use
- Recreation use
- Conservation use
- Educational use
- Public buildings and grounds
- Other public facilities

The Official Maps, identified in the following list, constitute the Future Land Use Map of the *Sanibel Plan*.

- I. Ecological Zones Map
- II. Commercial Zoning Map
- III. Resort Housing District Map
- IV. Wetlands Conservation Lands Map
- V. Environmentally Sensitive Lands Conservation District Map
- VI. Development Intensity Map

I. Ecological Zones Map

This map, which indicates the ecological zones of the City, is hereby designated and entitled the Ecological Zones Map. In the Land Development Code, the Ecological Zones Map, which controls the permitted use of land, is also designated as the Zoning Map of the City of Sanibel.

The following overlay districts further control permitted uses of land and are also incorporated in the Land Development Code.

- Commercial Zoning Map
- Resort Housing District Map
- Wetlands Conservation Lands Map
- Environmentally Sensitive Lands Conservation District Map

Notes: Surface waters, whether natural water bodies or human-made, that are not categorized by the designations of the Official Maps, are restricted in use to those accessory uses which are normal and incidental to the principal permitted uses of the adjacent ecological zone.

The Gulf Beach, Bay Beach and Mangrove Forest Zones, which extend on submerged lands to the corporate limits, are restricted in use to those uses permitted in these respective zones.

II. Commercial Zoning Map

The map, which indicates commercial district boundaries, is hereby designated and entitled the Commercial Zoning Map.

The Commercial Zoning Map designates properties that are included within the various commercial districts in the City of Sanibel. The Commercial Zoning Map distinguishes among the different Commercial districts.

III. Resort Housing District Map

The map, which indicates areas where resort housing (short-term occupancy) uses are permitted, is hereby designated and entitled the Resort Housing District Map. The Resort Housing District Map is incorporated in the Land Development Code.

IV. Wetlands Conservation Lands Map

This map, which indicates the boundaries of the Interior Wetlands Conservation District, is hereby designated and entitled the Wetlands Conservation Lands Maps.

The Wetlands Conservation Lands Map controls the permitted use of land within the District. This map is incorporated in the Land Development Code.

V. Environmentally Sensitive Lands Conservation District Map

The map, which indicates the boundaries of the Environmentally Sensitive Lands Conservation District, is hereby designated and entitled the Environmentally Sensitive Lands Conservation District Map. The Environmentally Sensitive Lands Conservation District Map is incorporated in the Land Development Code.

VI. Development Intensity Map

This map, which indicates the maximum number of dwelling units permitted for each parcel of land throughout the City of Sanibel, is hereby designated and entitled the Development Intensity Map. This map is incorporated in the Land Development Code.

Section 4.1.2. Existing (2012) and Future (2022) Traffic Circulation Map

Pursuant to Section 163.3177, Florida Statutes.

The City of Sanibel's Existing (2012) and Future (2022) Traffic Circulation Map identifies the general location of arterial roads and collector roads. The existing and proposed number of lanes for each roadway are also identified.

This Official Map is not intended to restrict capacity enhancement / operational improvements that facilitate operations and improve safety for the existing transportation system.

The Official Map, identified as the Existing (2012) and Future (2022) Traffic Circulation Map constitutes the Future Traffic Circulation Map of the *Sanibel Plan*.

Notes: There are no limited access facilities, ports, airports, rail lines, high-speed rail lines and related facilities in the City of Sanibel.

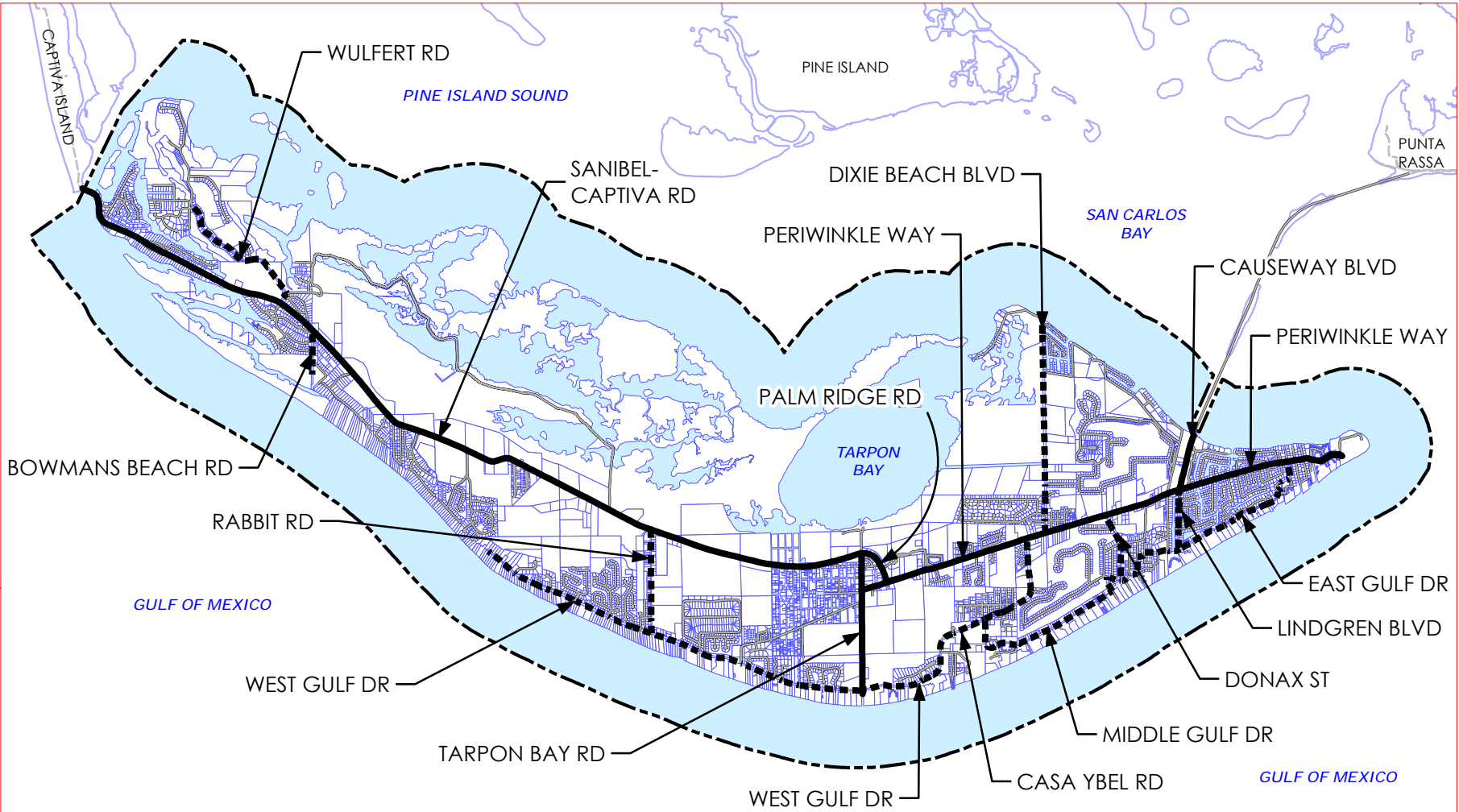
This map identifies the general location of arterial and collector roads and the number of lanes for each roadway through the year 2022. There are no new arterial roads or collector roads or additional lanes for existing arterial roads or collector roads proposed through the year 2022.

City of Sanibel, Florida

Existing (2012) and Future (2022) Traffic Circulation Map

The following map constitutes the Future Traffic Circulation Map of the *Sanibel Plan*

Existing (2012) and Future (2022) Traffic Circulation Map



EXISTING (2012) AND FUTURE (2022) TRAFFIC CIRCULATION MAP

NOTE:

There are no port facilities, airports, or rail lines in the City of Sanibel or proposed in the City through 2022.

No new collector or arterial roads are proposed through 2022.

No additional lanes for existing collector or arterial roads are proposed through 2022.

Legend

- Two-Lane (Rural) Collector Roads
- Two-Lane (Rural) Arterial Roads



EXISTING (2012) AND FUTURE (2022) TRAFFIC CIRCULATION MAP

Article 5. Administrative Regulations

Part 5.1. Introduction

The Local Government Comprehensive Planning and Land Development Regulation Act of 1985, as amended, *Section 163.3161, et seq., Florida Statutes*, requires that all local governments prepare and adopt comprehensive plans and subsequently make land use decisions on the basis of those plans. The act also gives local governments some important powers. For example, State and County agencies are bound by Local plans and must obtain a permit from Local government before any development is undertaken. “Development” as used in this Plan, and in *Section 163.3161, et seq., Florida Statutes*, has the same broad meanings as set forth in *Section 380.04, Florida Statutes*.

An evaluation and appraisal of the *Sanibel Plan* in 2012 concludes that the Plan is compliant with State requirements contained in the 2011 “Community Planning Act”.

Prior to the Local Government Comprehensive Planning Act (of 1975), local comprehensive plans were purely advisory in nature and although many local governments had adopted comprehensive plans, they ignored them in developing and administering land use regulations. Under that Act and the Local Government Comprehensive Planning and Land Development Regulation Act of 1985, however, the comprehensive plan has a definite legal status. Land use regulations and development activities must be consistent with the requirements of the plan

and designed to help achieve the goals and objectives of the plan.

Land use regulations have traditionally appeared in the form of separate and independent codes, such as zoning and subdivision codes. It is the intent of the Local Government Comprehensive Planning and Land Development Regulation Act of 1985 that local authorities implement the comprehensive plan at least in part through the adoption and enforcement of a “Land Development Code”. This Plan will continue to be so implemented and enforced. The Land Development Code is not, however, intended to eliminate the need for detailed building, plumbing, fire, housing and other similar codes that supplement the Plan.

The basic principles and standards governing development are set out in Articles 1, 2, 3 and 4 of this Plan. All provisions of the implementing Land Development Code will be consistent with the principles and standards of the Plan. Any ambiguity in provisions of the Land Development Code will be interpreted and enforced in a manner consistent with the principles and standards of this Plan.

The Land Development Code may establish the actual permitted uses within various ecological zones, within various Commercial Districts, within Wetlands Conservation Lands, within the Environmentally Sensitive Lands Conservation District and within the Resort Housing District. However, the ecological zone designation of any parcel or the wetlands conservation lands designation may not be changed through the Land Development Code without a corresponding amendment to this Plan and Ecological Zones Map adopted herewith or the Wetlands Conservation Lands Map adopted herewith. Land not designated for commercial use on the Commercial Zoning Map adopted herewith may not be zoned, through the Land Development

Code, for commercial use without a corresponding amendment to this Plan and the official Commercial Zoning Map, except for rezoning to a Special Use District.

Sanibel Charter amendments adopted in 1989 require super-majority votes of Council for density increases and for removing land from the Environmentally Sensitive Lands Conservation District, the Wetland Ecological Zones, the Mangrove Forest Zone and the Interior Wetlands Conservation District.

Further, the City Charter was amended on March 1, 2005 by the majority of the electors participating in the referendum. As amended, those Charter Amendments read:

Section 3.10.2 - Ordinances increasing residential development density

Actions to increase the residential development density as established in the Sanibel Plan, as constituted on May 4, 2004, except for rounding upward of fractional allocations of fifty percent (50%) or more to the next whole number, may be taken by the City only by ordinance approved by a majority of the qualified electors voting at the next general election or a special election called for such purpose, provided, however, that nothing contained in this Section 3.10.2 shall preclude the City Council from permitting residential densities in excess of those established in the Sanibel Plan, where the purpose is (1) to provide incentives for the Below Market Rate Housing Program, or (2) to permit redevelopment of existing parcels up to the number of existing dwelling units on May 4, 2004, provided the redevelopment is otherwise in conformance with the Sanibel Plan and the Land Development Code.

Section 3.10.4. - Ordinances increasing permitted height of building(s)

Actions to increase the permitted height of a building or buildings as established in the Sanibel Plan, as constituted on May 4, 2004, may be taken by the City only by ordinance approved by a majority of qualified City electors at the next general election or a special election called for such purpose; provided, however, that where a condominium building, which is a nonconforming structure, is destroyed or substantially damaged in a natural disaster, reconstruction of which is in all other respects permitted by the Land Development Code, such reconstructed building may exceed the height of the building immediately prior to the disaster by up to one story (1) if, and to the extent, the building must be elevated above the ground level to comply with applicable flood abatement laws or regulations and (2) reconstruction without allowing for such additional height would result in the loss of a dwelling unit by its owner.

Section 3.10.5. Ordinances increasing permitted impermeable coverage, vegetation removal or developed area

Ordinances to increase the permitted maximum land area to be (1) covered with impermeable surfaces, (2) cleared of vegetation and/or (3) used as developed area, as established in the Land Development Code as constituted on May 4, 2004, shall become effective only upon approval by a majority of qualified City electors at the next general election or a special election called for such purpose.

Section 3.17. City-Authorized Major Changes to Highway 867 (Causeway Boulevard, Periwinkle Way, Palm Ridge Road and Sanibel-Captiva Road)

Sanctuary Island Artery. Lee County Highway 867 (Causeway Boulevard, Periwinkle Way, Palm Ridge Road and Sanibel-Captiva Road) exercises a critical influence on development intensity, and thus on the environmental quality of this "Sanctuary island" and its J.N. "Ding" Darling National Wildlife Refuge. The City of Sanibel was founded with the primary aim of limiting development to levels that would allow preservation in perpetuity of a unique and environmentally sensitive barrier island. A portion of the Sanibel Plan and its Vision Statement states "Auto-urban development influences will be avoided". Citizens of the City of Sanibel have a special stake as stewards of the City's commitment to remain a "Sanctuary Island". To this end, certain decisions affecting Highway 867 should be made only with the explicit consent of a majority of the electors of the City of Sanibel.

Referendum. Whenever the City Council wishes to direct or authorize certain major changes to Highway 867, including revisions to any interlocal agreement governing Highway 867 that would enable Lee County to make those changes, the City Council shall submit each proposal to a yes or no vote in a mail ballot referendum.

No such proposal may be adopted without approval by the majority of the qualified City electors. Elector approval shall be required for proposals that would or could lead to (i) new vehicular travel lanes; (ii)

addition of street lights; or (iii) addition of traffic signals. New turning lanes are exempt from the referendum requirement, provided they are 100 yards in length or less, and are not subsequently linked to form a continuous lane longer than 100 yards.

Except as permitted in this Plan, no land may be developed under the Land Development Code at a residential development intensity greater than that designated on the official Development Intensity Map adopted herewith. Nor may the permitted residential development intensity of any land be increased through the Land Development Code without a corresponding amendment to this Plan and the Development Intensity Map.

Lands not designated for resort housing use on the Resort Housing District Map adopted herewith may not be zoned, through the Land Development Code, for resort housing use without a corresponding amendment to this Plan and the official Resort Housing District Map.

Part 5.2. Legal Authority

Pursuant to Section 163, Florida Statutes.

This Plan and implementing Land Development Code are enacted pursuant to the authority of the City of Sanibel as granted to home rule municipalities pursuant to the Constitution of the State of Florida, *Section 166, Florida Statutes*, as set forth in the Charter of the City of Sanibel, and as delineated in the Local Government Comprehensive Planning and Land Development Regulation Act of 1985, as amended, including the

Community Planning Act, *Section 163.3161, et seq., Florida Statutes.*

Part 5.3. Local Planning Agency

Pursuant to Sections 163.3161, 163.3174 and 163.3191 Florida Statutes.

Section 5.3.1. Designation

The designation of the Sanibel Planning Commission as the local planning agency pursuant to *Section 163.3174 Florida Statutes*, is hereby affirmed and notice of such affirmation and designation is hereby given pursuant to *Section 163.3161, et seq., Florida Statutes.*

The City Council reserves the power granted under *Section 163.3174, Florida Statutes*, to designate itself or another entity to serve as the local planning agency, through an appropriate ordinance.

Section 5.3.2. Authority of Local Planning Agency

The local planning agency shall have all of the authority and responsibility granted to local planning agencies in *Section 163, Florida Statutes.* It shall:

- Review, hold a public hearing on, and make recommendations to the City Council regarding

amendments to the *Sanibel Plan* and the Land Development Code

- Prepare periodic reports on the *Sanibel Plan* for transmittal to the City Council, pursuant to *Section 163.3191, Florida Statutes*

In addition, it shall have such other duties and responsibilities as granted to it by the Sanibel City Charter or delegated to it by the City Council.

Part 5.4. Amendments to the Plan

Pursuant to Sections 163.3184 and 163.3187, Florida Statutes.

Section 5.4.1. Procedure Generally

The procedure for reviewing, considering and adopting proposed amendments to this Plan, including notice and hearing requirements, shall be in accordance with *Part II, Section 163* and *Section 166, Florida Statutes* and sections controlling case law and provisions of the Sanibel Charter, where applicable.

Section 5.4.2. Persons Entitled to Propose or Request Amendments

The following may propose amendments to this Plan:

- The City Council or any Member

- An owner of real property which would be substantially affected by an amendment, as to that interest
- Any other person specifically authorized to do so, under *Section 163, Florida Statutes*

The local planning agency (the Planning Commission), the City Manager or the City Attorney may request an amendment to this Plan.

Section 5.4.3. Application for Plan Amendment

- An amendment proposed by Council or a Member shall be filed with the City Manager
- An amendment proposed by a property owner or other person entitled to propose an amendment shall be on a form supplied by the City, accompanied by the filing fee established by City Council and filed with the City Manager
- A request for an amendment shall be referred to City Council for a determination as to whether to proceed. If the Council determines to proceed, the request shall be filed with the City Manager
- Upon receiving a proposal for amendment under this part, the City Manager shall conduct a timely review and prepare and submit a report to the local planning agency
- The local planning agency shall conduct one or more hearings on the amendment in accordance with the requirements of the *Sanibel Plan*, the Land

Development Code, and *Section 163, Florida Statutes*

- The City Council shall conduct one or more hearings after due public notice on the proposed amendment in accordance with the requirements of the Sanibel Charter, the *Sanibel Plan*, the Sanibel Land Development Code, and *Part II, Section 163, Florida Statutes*
- After the transmittal hearing, if a proposed amendment to the *Sanibel Plan* is rejected by City Council, or a determination is made that the Council will not transmit or otherwise adopt the proposed amendment, no application for the same proposed amendment shall be accepted or processed for consideration for one year after the rejection

Section 5.4.4. Standards

The criteria to be considered, where appropriate, and whether and to what extent the proposed amendment:

- Is consistent with the City Charter
- Will preserve and enhance present advantages
- Will encourage the most appropriate use of land, water and resources consistent with the public interest
- Will overcome present handicaps
- Will deal effectively with future problems that may result from the use and development of land within the City

- Will preserve, promote, protect and improve the public health, safety, comfort, good order, appearance, convenience, law enforcement and fire prevention, and general welfare
- Will prevent the overcrowding of land and avoid undue concentration of population
- Will facilitate the adequate and efficient provision of transportation, water, sewerage treatment, schools, parks, recreational facilities, housing and other requirements and services
- Will conserve, develop, utilize and protect natural resources within the City
- Will protect human, environmental, social and economic resources
- Will maintain through orderly growth and development the character and stability of present and future land use and development
- Is consistent with the Vision Statement of this Plan

Additional criteria for amendments proposing residential density increases and whether mitigating circumstances are found to exist which would outweigh potential drawbacks and work toward achieving other purposes of this plan, include the following:

- Where opportunities are provided for below market rate housing
- To implement the plan for commercial development by providing alternatives to commercial development through increased residential densities
- To promote further conservation of environmentally sensitive lands by creating incentives to set aside

sensitive land from development, such as transfer of development rights

- Where unique circumstances are found to exist upon a parcel, which had not been fully considered at the time of the adoption of the Development Intensity Map in 1976
- Where there is a resultant, overall Citywide density decrease in the number of permitted dwelling units, provided that the density decrease does not originate on lands in the Environmentally Sensitive Lands Conservation District

Section 5.4.5. Public Participation

It is the intent of the City that the public participate in the comprehensive planning process to the fullest extent possible. Toward this end, the local planning agency and City Council will provide for effective public participation and will provide real property owners with notice of all official actions which will regulate the use of their property. This will be done through the notice requirements set forth in *Section 163 Florida Statutes*, where applicable, or through notice requirements set forth in the Sanibel Charter or *Section 166, Florida Statutes*, where applicable. In addition, the Sanibel Land Development Code shall continue to provide for mail notification of property owners contiguous to and in the vicinity of a parcel proposed for development sufficiently in advance of a public hearing before the local planning agency, on long form development permits.

Relevant public comment, both written and oral, shall be received and considered by the local planning agency and City Council, to the extent required or allowed under statutory or

case law. The staff may be directed to respond, either orally, or in writing, to legitimate public comment.

Copies of proposed Plan amendments, or summaries thereof, staff reviews or similar documents, shall be kept on file with the City, and shall be subject to review by any member of the public during working hours. Additionally, members of the public shall be promptly provided copies of the Plan, proposed Plan amendments, summaries of the same, staff review and similar documents, at the fee established by City Council pursuant to State law.

At least annually, the local planning agency shall prepare or cause to be prepared a report of planning activities for the previous year. Such report shall be discussed publicly in at least one local planning agency meeting, shall be disseminated to the local news media, and shall be available for public review and comment.

Section 5.4.6. Effect on Land Development Code

This Plan, as extensively revised and restated, does not repeal or otherwise affect any provision of the Land Development Code. However, the Land Development Code shall be amended to conform to this Plan within the period of time required by *Section 163.3202, Florida Statutes*.

Part 5.5. Composition of the Plan

Section 5.5.1. The Ordinance and Plan Document

The Ordinance (no. 12-010) incorporating the Plan document, together with the plan document, constitutes the *Sanibel Plan*.

Section 5.5.2. Maps

Those maps enumerated in Article 4, Official Maps, are specifically incorporated as part of the *Sanibel Plan*. However, only those maps or portions thereof, which are specifically listed in Article 4 as being adopted maps or portions, shall be considered the adopted maps or portions thereof. Treatment of maps shall be in accordance with the explanations set forth in said Article 4.

Section 5.5.3. Other Extraneous Documents

Although many other resources have been used over the years to formulate this Plan, or to provide data in its amendments, no such resource, study, map or other document shall become or be construed as a part of this Plan by its reference. The mention of the name of a study, report, document, map or other resource will not, make such study, report, document, map or other resource a part of this Plan, nor will the fact that it is kept on file in City Hall or that it is quoted at length in this Plan.

Appendix

Key for the Ecological Zones Map

Generally, mapping was limited to areas of 2.0 acres, or greater. Land areas less than two acres were incorporated into the adjacent ecozone. Elevations refer to those shown on the Bosworth Topographic Maps, June 1976. The key is in two parts. First, the key for the east, east central and west central sectors is given. Next, the key for the west sector is shown.

East, East Central, and West Central Sectors

- I. Elevation greater than or equal to 4.0 feet
 - A. Located on the first ridge adjacent to the Gulf
 1. South of Gulf Drive or an extension of it
 - a. Landward of the 1974 Coastal Construction Setback Line

Ecological Zone: GULF BEACH RIDGE
 - b. Seaward of the 1974 Coastal Construction Setback Line

Ecological Zone: GULF BEACH
 2. North of Gulf Drive or an extension of it
 - a. Dredged, cleared, filled and/or predominantly (50%) built upon. Vegetation will be either landscaped or invading exotics

Ecological Zone: ALTERED

- b. Vegetation predominantly cabbage palm (*Sabal palmetto*), sea grape (*Coccoloba unifera*), wax myrtle (*Myrica cerifera*), wild olive (*Forestiera segregata*), yucca (*Yucca aloifolia*), and with Australian Pines (*Casuarina sp.*)

Ecological Zone: GULF BEACH RIDGE

Special Cases - There are three cases where the Gulf Beach Ridge and the Mid-Island Ridge merge. These are: 1) in Section 35, Township 46 South, Range 22 East, 2) Section 21, Township 46 South, Range 23 East, 3) Section 30, Township 46 South, Range 23 East. In the first case, Tarpon Bay Road is used to separate the Gulf Beach Ridge from the Mid-Island Ridge; in Section 21, Ferry Road separates the two ecological zones. For the final case, Tulipa Way and Loggerhead Cay separate the zones from each other.

- B. Within 50 feet of the San Carlos Bay or Pine Island Sound

Ecological Zone: BAY BEACH

C. All other land

1. Dredged, cleared, filled and/or predominantly (50%) built upon. Vegetation will be either landscaped or invading exotics

Ecological Zone: ALTERED

2. Vegetation predominantly cabbage palm (*Sabal palmetto*), gumbo limbo (*Bursera simeruba*), strangler fig (*Ficus aure*), sea grape (*Coccoloba unifera*), myrsine (*Rapanea quianensis*), stoppers (*Eugenia Sp.*), buckthorn (*Bumelia angustifolia*), wild coffee (*Psychotria undata*), Joewood (*Jacquinia Keyensis*), saltbush (*Baccharis halimifolia*), wax myrtle (*Myrica cerifera*), buttonwood (*Conocarpus erecta*), with Brazilian pepper (*Schinus terebin-*

thifolius), Australia Pine (*Casuarina sp.*), Melaleuca (*Melaleuca quinquenervia*)

- a. Less than 5 acres in size and not connected to altered land or other land 4 feet or greater in elevation. The immediately surrounding land predominantly less than 3 feet in elevation

Ecological Zone: UPLAND-WETLANDS

- b. All other land

Ecological Zone: MID-ISLAND RIDGE

II. Elevation 3 feet or greater but less than 4 feet

- A. Seaward of the 1974 Coastal Construction Setback Line

Ecological Zone: GULF BEACH

- B. Within 50 feet of San Carlos Bay or Pine Island Sound

Ecological Zone: BAY BEACH

- C. All other land

1. Dredged, cleared and filled. Vegetation will be either landscaped or exotic invader species

- a. Predominantly built upon (50% or over)

Ecological Zone: ALTERED

- b. Not predominantly built upon (less than 50%)

Ecological Zone: UPLAND-WETLANDS

2. Red Mangrove (*Rhizophora mangle*) or Spartina (*Spartina bakerii* and/or *spartina*) judged to be significantly present

Ecological Zone: LOWLAND-WETLANDS

3. All other vegetation

Ecological Zone: UPLAND-WETLANDS

III. Elevation less than 3 feet

- A. Seaward of the 1974 Coastal Construction Setback Line

Ecological Zone: GULF BEACH

- B. Within 50 feet of San Carlos Bay or Pine Island Sound

1. Tidal mangroves, often red (*Rhizophora mangle*), black (*Avicenni nitida*), and white (*Languncularia racemosa*), with buttonwood (*Conocarpus erecta*) at slightly higher elevations

Ecological Zone: MANGROVES

2. Without tidal mangroves

Ecological Zone: BAY BEACH

- C. All other land

1. Dredged, cleared and filled and/or predominantly (50%) built upon. Vegetation will be either landscaped or exotic invader species

Ecological Zone: LOWLAND-WETLAND

2. Tidal mangroves, often red (*Rhizophora mangle*), black (*Avicenni nitida*), and white (*Languncularia racemosa*), with buttonwood (*Conocarpus erecta*) usually at slightly higher elevations

Ecological Zone: MANGROVES

3. Not tidal mangroves; any other vegetation. Often found will be spartina (*Spartini bakerii* and *spartini*), sea purslane (*Sesuvium portulacastrum*), with salt bush (*Baccharis halimifolia*), leather fern (*Acrosticum donaeifolium*), buttonwood (*Conocarpus erecta*), wax myrtle (*Myrica cerifera*) and invaded by Brazilian pepper (*Schinus terebinthifolius*) and Melaleuca (*Melaleuca quinquenervia*)

Ecological Zone: LOWLAND-WETLANDS

West Sector

- I. Located on an island or small peninsula not present on the 1833 map by Edward Armstrong

- A. Elevation greater than or equal to 3.0 feet

1. Seaward of the 1974 Coastal Construction Setback Line

Ecological Zone: GULF BEACH

2. Landward of the 1974 Coastal Construction Setback Line

Ecological Zone: BLIND PASS

- B. Elevation less than or equal to 3.0 feet

1. Seaward of the 1974 Coastal Construction Setback Line

Ecological Zone: GULF BEACH

2. Landward of the 1974 Coastal Construction Setback Line

Refer to and apply The Key for East, East Central and West Central Sectors of the Island

- II. Located on the Sanibel-Captiva highway peninsula west of a meander line herein described: from intersection of west line of Government Lot II and northeasterly right-of-way line of Sanibel-Captiva Road, running north 26°48'55" east 360.90 feet to point of beginning, then south 64°20'58" east 492.36 feet, then south 19°08'40" west 66.93 more or less to the northwest corner of parcel 12-46-21-J0-00007.0010, then southeasterly along north line of said parcel to the northeast corner of said parcel, then southerly along east line of said parcel to the waters of Clam Bayou

- A. Seaward of the 1974 Coastal Construction Setback Line and a northward prolongation of said line

Ecological Zone: GULF BEACH

- B. Located east of the 1974 Coastal Construction Setback Line and a northward prolongation of said line and located west of the centerline of Coconut Drive and a southward and northward prolongation of said centerline

Ecological Zone: BLIND PASS

- C. Located elsewhere on the Sanibel-Captiva highway peninsula

Refer to and apply The Key for the East, East Central and West Central Sectors of the Island

- III. Located on Wulfert Peninsula

Refer to and apply The Key for the East, East Central and West Central Sectors of the Island

- IV. Located in Section 13, Township 46 South, Range 21 East or Section 18, Township 46 South, Range 22 East, or west of Jamaica Drive, Section 19, Township 46 South, Range 22 East

- A. Greater than or equal to 3 feet and less than or equal to 5 feet in elevation, landward of the 1974 Coastal

Construction Setback Line, judged to be predominantly Australian pines

Ecological Zone: BLIND PASS

B. Any other land

Refer to and apply The Key for East, East Central and West Central Sectors of the Island

The Ecological Zones Map

The Ecological Zones Map, a series of maps by section, township, range, was developed from the “key” described in this appendix.

1. Format

- (a) Official Maps, by section, depicting ecological zones, water boundaries, roads, unimproved roads, trails, survey areas, local drainage areas
- (b) Unofficial Reference maps
- (c) A “key” by which land is classified into each ecological zone

2. Special mapping considerations

- (a) Survey areas - where the existing vegetation indicates an elevation different than the topographic map. A survey area may be reclassified once additional topographic information is available
- (b) Local drainage areas - these occur in ridges and are denoted by depression contours on the topographic maps