

LEE COUNTY ORDINANCE NO. 84-28

AN ORDINANCE TO BE ENTITLED: LEE COUNTY COMPREHENSIVE PLAN, AN ORDINANCE OF THE COUNTY OF LEE, FLORIDA, RELATING TO COMPREHENSIVE PLANNING AND THE REGULATION OF LAND USE; PROVIDING FINDINGS; PROVIDING FOR THE ADOPTION OF AMENDMENTS TO THE LEE COUNTY COMPREHENSIVE PLAN PURSUANT TO THE REQUIREMENTS OF THE LOCAL GOVERNMENT COMPREHENSIVE PLANNING ACT OF 1975, SAID PLAN CONSISTING OF AN INTRODUCTION, A CHAPTER ON POPULATION AND ECONOMICS, A LAND USE ELEMENT, A LAND USE MAP, A TRAFFIC CIRCULATION ELEMENT, A MASS TRANSIT ELEMENT, A PORTS, AVIATION, AND RELATED FACILITIES ELEMENT, A COMMUNITY FACILITIES AND SERVICES ELEMENT, A PARKS, RECREATION, AND OPEN SPACE ELEMENT, A CONSERVATION AND COASTAL ZONE ELEMENT, A HOUSING ELEMENT, A HISTORIC PRESERVATION ELEMENT, AN INTER-GOVERNMENTAL COORDINATION ELEMENT, A CHAPTER ON IMPLEMENTATION, A CHAPTER ON ADMINISTRATIVE AND PROCEDURAL PROVISIONS; PROVIDING FOR THE LEGAL EFFECT OF THE COMPREHENSIVE PLAN; PROVIDING FOR GEOGRAPHICAL APPLICABILITY; PROVIDING FOR THE EFFECT OF THIS COMPREHENSIVE PLAN ON OTHER COMPREHENSIVE PLANS OF LEE COUNTY; PROVIDING A SEVERABILITY CLAUSE; PROVIDING AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF LEE COUNTY, FLORIDA:

SECTION ONE LEGISLATIVE FINDINGS.

The Board of County Commissioners hereby makes the following legislative findings:

1. Pursuant to Chapter 125, Florida Statutes, and Sections 163.3161-.3211, Florida Statutes, entitled the Local Government Comprehensive Planning Act of 1975, Lee County is authorized and required to adopt a Comprehensive Plan, and, when necessary, amend such plan to encourage the most appropriate use of land, water, and resources, consistent with the public interest; overcome present handicaps; and deal effectively with future problems that may result from the use and development of land within its jurisdiction. The Legislature of the State of Florida has further mandated, in the Local Government Comprehensive Planning Act, that the planning process be a continuous and ongoing process in which the success or failure of an existing plan be periodically evaluated.

2. The existing Comprehensive Plan which Lee County adopted in 1979, with subsequent amendments, is inadequate, often fails to provide clear standards or guidelines, lacks a map of land use categories in the County, and generally fails to provide guidance and

predictability or consistency in land use regulation or actions. The Florida Department of Community Affairs has indicated on more than one occasion that the situation in Lee County is of such a nature that if Lee County does not act, the State may initiate steps, under Chapter 380, Florida Statutes, to undertake designation of Lee County as an area of critical State concern.

3. In addition to the inadequacy of the existing plan, the current framework of Lee County land use regulations, including zoning, development standards and other land use related regulations is a patchwork of incomplete, inadequate, and often conflicting requirements which unnecessarily encumber the citizens of Lee County, is often ineffective in protecting public or private interests, and in some cases is in direct conflict with State enabling legislation. Because all land use regulations must be consistent with comprehensive plan standards, none of these critical problems can be resolved without first establishing policies and standards through the amendment of the existing comprehensive plan. An urgent, critical need therefore exists for amendment of the existing Comprehensive Plan if subordinate land use regulations are to be thereafter enacted.

4. Lee County's population is expected to more than double in the next twenty years. This population increase will bring sharply increased demand for additional public services, which in some cases are already overtaxed, including additional demands for sanitary sewer, potable water, and roads. Absent an effective Comprehensive Plan, and the subsequent revision of existing inadequate subordinate land use regulations, Lee County will be unable to effectively plan for or reasonably direct development and population growth as mandated by the Local Government Comprehensive Planning Act. There exists an urgent and critical, if not emergency, need for Amendment to the existing Comprehensive Plan.

5. Adoption of an amended Comprehensive Plan is further necessary to protect the health, safety and welfare of the citizens of Lee County, protect the human, environmental, social, and economic

resources of Lee County, maintain the character and stability of present and future land use in Lee County, and to preserve, promote, protect, and improve the public health, safety, comfort, good order, appearance, convenience, law enforcement and fire prevention, and general welfare; 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 Lee County.

6. On December 14, 1983, Lee County Ordinance No. 83-36 was adopted to establish a Comprehensive Plan Amendment Public Participation Procedure to provide effective public participation procedures for broad dissemination of proposals and alternatives, opportunity for written comments, public hearings, provisions for open discussion, communications programs, information services, and consideration of and response to public comments. To date the Board of County Commissioners has held more than twenty (20) workshops or hearings on the plan amendment process, the Local Planning Agency held more than seventeen (17) separate workshops or hearing days consisting of more than eighty (80) hours of hearing time, and staff has conducted extensive public input sessions in all sections of the County.

7. As part of its efforts to move forward with solving its critical land use and planning problems, the Board of County Commissioners on December 14, 1983, adopted an Ordinance to replace what had been a one-man Local Planning Agency consisting of the Director of the Division of Community Development with a seven member agency, including appointed citizens. Lee County Ordinance No. 83-37 designated and established the Lee County Local Planning Agency to prepare and recommend an amendment to the Lee County Comprehensive Plan. Thereafter pursuant to Section 163.3174, Florida Statutes, the Lee County Board of County Commissioners, in cooperation with the Lee County Local Planning Agency, designated the Lee County Division of

Community Development as the entity to actually draft and prepare the amendments to the Lee County Comprehensive Plan, and affirmed the responsibility of the Local Planning Agency to provide final recommendations on the adoption of said amendment.

8. The Lee County Local Planning Agency held, after due public notice, more than seventeen (17) public workshops, and six (6) public hearings to solicit public comment on the proposed plan, and make its report and recommendations to the Board of County Commissioners as to the proposed plan.

9. The Lee County Local Planning Agency and the Board of County Commissioners received reports from two technical advisory committees, created by Lee County Ordinance No. 83-36, pursuant to Section 163.3207, Florida Statutes, to coordinate technical elements and provide advice thereon.

10. Following its public hearings, the Lee County Local Planning Agency prepared a two-volume Final Report and Recommendations on the adoption of amendments to the Lee County Comprehensive Plan, which report and recommendations were transmitted to the Lee County Board of County Commissioners on June 7 and 20, 1984.

11. On June 13 and 27, 1984, the Board of County Commissioners held two public hearings, after due public notice, and incorporated the recommendations of the Local Planning Agency into the draft amendments dated April 29, 1984, and instructed staff to transmit the plan as recommended by the LPA, the Recommended Plan, to the Florida Department of Community Affairs, the Southwest Florida Regional Planning Council, and the Florida Department of Environmental Regulation, for review.

12. The LPA Recommended Plan, entitled the "Lee Plan", was transmitted to the Florida Department of Community Affairs on July 9, 1984. The Florida Department of Community Affairs transmitted, within sixty (60) days of receipt of the proposed amendment, three objections and comments to the proposed Lee Plan, noted that the plan was a substantial improvement over Lee County's 1979 plan, and stated

that the Lee Plan compares favorably with some of the better plans that the Department has reviewed. Pursuant to Section 163.3184, Florida Statutes, Lee County, by letter dated September 11, 1984, replied to the objections of the Department of Community Affairs.

13. Also pursuant to the June 13 and 27, 1984, hearings, and the Board directive, the Lee Plan was transmitted to the South-west Florida Regional Planning Council on July 6, 1984, which Council did not transmit any objections to the Lee Plan within sixty (60) days, as required by statute.

14. Throughout the comprehensive planning process, studies and surveys have been prepared, numerous data have been collected, and such studies, surveys, and data have been evaluated and reviewed, to serve as appropriate data for the proposed Lee County Comprehensive Plan. As a result of these documents and other testimony, the Board of County Commissioners finds:

- a) the several elements of the Lee Plan are coordinated and consistent; and
- b) the Lee Plan is economically feasible.

15. The Lee County Board of County Commissioners has held more than twenty-one (21) days of workshops and special meetings, and eleven (11) days of public hearings on the Comprehensive Plan amendment process, after due public notice, considered all comments of the public, State and regional planning agencies, other agencies and local governments, revised the proposed Lee Plan in response to said comments, and complied with all other requirements of the Local Government Comprehensive Planning Act of 1975 for the adoption of the Comprehensive Plan.

SECTION TWO ADOPTION OF AMENDMENTS TO THE LEE COUNTY COMPRE-
HENSIVE PLAN.

The Board of County Commissioners hereby amends the existing plan and adopts the "Lee Plan", in its entirety, said Lee Plan consisting of a one-volume document, and including an Introduction, a chapter on Population and Economics, a Land Use Element, a Land Use Map, a Traffic Circulation Element, a Mass Transit Element, a Ports, Aviation, and Related Facilities Element, a Community Facilities and Services Element,

a Parks, Recreation, and Open Space Element, a Conservation and Coastal Zone Element, a Housing Element, an Historic Preservation Element, an Intergovernmental Coordination Element, a chapter on Implementation, and a chapter on Administrative and Procedural Provisions, as the Lee County Comprehensive Plan pursuant to, and in compliance with, the provisions of the Local Government Comprehensive Planning Act of 1975, as amended. Said document, the "Lee Plan", is attached hereto, and is a part hereof for all purposes.

SECTION THREE LEGAL EFFECT OF THE "LEE PLAN".

No public or private development shall be permitted except in conformity with the "Lee Plan" and all land development regulations and land development orders shall be consistent with the "Lee Plan".

SECTION FOUR GEOGRAPHIC APPLICABILITY.

The "Lee Plan" shall be applicable throughout the unincorporated area under the jurisdiction of Lee County, Florida, or in such unincorporated areas as are not included in any joint agreement with municipalities.

SECTION FIVE EFFECT ON PREVIOUS COMPREHENSIVE PLANS OF LEE COUNTY.

The "Lee Plan" shall replace all previous Lee County Comprehensive Plans, or amendments thereto.

SECTION SIX SEVERABILITY.

If any provision of this Ordinance, including, but not limited to, any goal, objective, policy or standard, is for any reason finally held invalid or unconstitutional or unenforceable by any court of competent jurisdiction, such provision shall be deemed a separate, distinct and independent provision and such holding shall not affect the validity of the remaining provisions which shall remain in full force and effect.

SECTION SEVEN EFFECTIVE DATE.

This Ordinance shall be filed with the Department of State and, after receipt of official acknowledgement of such filing, this Ordinance shall take effect on December 21, 1984.

DULY PASSED AND ADOPTED by the Board of County Commissioners
of Lee County, Florida, this 16th day of November, 1984.

ATTEST:

BOARD OF COUNTY COMMISSIONERS

LOIS F. KURTZ, AD INTERIM CLERK

OF LEE COUNTY, FLORIDA

By: Mary Bement
Deputy Clerk

By: R. H. Eastwood
Chairman



Approved As To Form

James Montgomery
Office of Lee County Attorney

LEE COUNTY COMPREHENSIVE PLAN

"THE LEE PLAN"

Adopted by the
Lee County Board of County Commissioners
on
November 16, 1984

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I. INTRODUCTION
LEE COUNTY COMPREHENSIVE PLAN

LEE COUNTY - THE SECOND CENTURY

In 1987, Lee County will celebrate its centennial as a county. Much has changed since 1887 when a small band of fishermen and farmers assumed the reins of governing an isolated community in the low-lying marsh country of Southwest Florida. There was little to encourage growth in 1887 in the hamlets which clung to the banks of the Caloosahatchee and to the beaches of the islands and mainland. There were no railroads or highways and no available markets for manufactured goods. The climate, though undeniably pleasant in the winter, was oppressive in the summer. One of Lee County's most famous residents, the inventor Thomas Edison, put electricity to work in the rest of the country, but in Fort Myers there was no electricity. Edison, along with Henry Ford and Harvey Firestone, had to wait a month for the packet which brought mail, freight, and passengers from the outside world.

Rail service commenced in the early years of the Twentieth Century, followed by the building of the storied Tamiami Trail and the introduction of passenger air service which culminated in the opening of the Southwest Florida Regional Airport in 1983.

Lee County's delicate environment offers many pleasures for both visitors and full-time residents. The marshes, beaches, coastal zone, and interior wetlands feature some of the nation's most delightful flora, including sea oats and sea grape, gumbo limbo, gardenia, hibiscus, sabal and royal palms. The waters off Lee County teem with a diversity of finfish and shellfish and are

the habitat of manatees and bottle-nosed dolphins. The fresh and brackish waters of the county are the home of Florida's most famous animal symbol - the alligator. Lee County is the home of many other species - some common, other very rare - including the bald eagle, the brown pelican, the roseate spoonbill, the pile-ated woodpecker, the bobcat, and the Florida Panther. Few would willingly sacrifice this abundant natural heritage, but all are threatened by thoughtless, unplanned growth.

This Plan addresses the problems of Lee County as it faces unparalleled growth as we move into our second century.

LEE COUNTY: OPTIONS FOR THE FUTURE

Expected Population Growth:

Over the next twenty (20) years Lee County can look forward to more of the phenomenal growth which has placed this community among the nation's top growth areas. Lee County will grow to a population of between one-half and three-quarters of a million people.

Economic Growth and Diversification:

The economy of Lee County will expand and diversify beyond the traditional bases of retirement, construction, land development, and tourism. High-tech industry and light manufacturing will provide higher wages and increased employment for young wage-earners and professionals. The Regional Airport and most I-75 interchanges will serve as a focus for this diversified growth, allowing Lee County to maintain its status as the hub of the southwest Florida regional economy.

Housing:

Providing adequate, affordable housing will be a major County goal over the next twenty (20) years. A cooperative intergovernmental effort will be undertaken to eliminate sub-standard housing through adoption of a housing code, demolition, rehabilitation, and comprehensive replacement strategies. Low and moderate income housing needs will also be met through bonus densities for developers and the transfer of development rights from environmentally sensitive areas to urban service areas.

Future Land Use:

To accommodate the County's rapid growth, future land use will be guided by the urban services areas concept, which will direct the extension of services such as roads, sewerage, water, and mass transit to corridors of high density residential, commercial, and industrial usage. This concept, if properly implemented, will avoid pervasive urban sprawl and allow future flexibility in deciding which areas of the County will or will not attain an urban character. Regulation of water and sewer utilities will also assist in guiding growth. Higher densities will be evidenced in the central urban service areas and the growth nodes (e.g. Bonita Springs, North Fort Myers, San Carlos Park, etc.) will expand in size. Planned developments with mixed uses will become the general rule, with a trend toward increased multi-family configurations.

Resource Protection:

The urban services concept will also direct growth away from fragile natural resource areas and allow the conservation of

coastal and fresh water wetlands and other valuable resource areas essential to the County's economy and its attractiveness as a work place and center for tourists and visitors.

Capital Improvements:

Existing deficiencies in urban services cannot be entirely overcome, but new growth will be required to pay its fair share for roads and other necessary capital improvements. Impact and user fees, special districts and other financing mechanisms will be utilized in an effort to provide the requisite roads, water and sewer facilities, fire and emergency services, police protection, schools, and other urban services. Of necessity, the County will be forced to undertake a workable capital improvement program, bonding programs and other mechanisms to assure implementation of its urban services strategy.

Tremendous growth will occur in Lee County over the next twenty (20) years. The question is whether it will be uncontrolled and haphazard or part of an overall plan to protect the character, economy, resources and people of Lee County.

THE LEE PLAN: A COMPREHENSIVE PROCESS

This plan is comprehensive because it considers the needs of the entire unincorporated portion of Lee County. It includes services to the municipalities, as well, when the County is the service provider (e.g. libraries, emergency medical services). This plan is comprehensive in a functional, as well as a geographical, sense because it addresses a wide range of community needs and services. It is comprehensive also because it interrelates physical, social, and economic considerations in an interdisciplinary approach to Lee County's future.

Comprehensive plans are statements of policy which guide public capital investments, public expenditures, and fiscal policies. Plans establish the community's priorities, aiding future decisions about the allocation of human, financial, and natural resources.

The planning process is continuous, cumulative, and cyclical. Comprehensive plans, as guides for future decision-making, must not be seen as static documents imposing rigid long-term restrictions upon the actions of governments and citizens. The policies contained in this plan can be amended using the same process, throughout the effective life of this plan, since Florida law requires that comprehensive plans be evaluated and updated every five years.

The planning process begins with the establishment of parameters, the restrictions imposed by state law, public policy, and economic constraints upon the gathering of data and the formulation of policy. Planning staff members gather information and data to determine problems and remedies which the plan must confront. (See illustration 1). Information gathering is certainly the most time consuming part of the process. Data gathering is continuous throughout the life of the plan because information is needed to monitor and analyze the efficacy of policies and the overall success of the plan.

Issues are analyzed in light of State and County policy as directed by the County Commissioners and other officials responsible for the implementation of the prospective plan. The County's intentions are then expressed in goals, which are stated in broad

language. Objectives are statements ancillary to goals which express the County's intentions on specific subjects in language less general than the terms used in the goals. Policies state the County's commitment to implement goals and objectives.

This process cannot be conducted in a vacuum. The County has solicited and received advice from the citizens of Lee County and has depended upon private consultants and public officials.

INTERGOVERNMENTAL COORDINATION AND PUBLIC
PARTICIPATION WITHIN THE PLANNING PROCESS

Adoption of the Lee Plan was the culmination of more than a year of public meetings, workshops, and hearings. Over that time period County Staff, the Local Planning Agency and the Board of County Commissioners, held more than ninety days of public meetings and hearings.

To facilitate the dissemination of information and insure full public input, the Board of County Commissioners in December of 1983, adopted a Comprehensive Plan Amendment Public Participation Procedures Ordinance. That ordinance required, among other things, the establishment of a Comprehensive Plan Public Information Center to receive public comment and input, and to provide copies of draft text, maps, studies, data and schedules related to the Comprehensive Plan. This information center has been operating for approximately one year prior to the adoption of the Lee Plan, and it is anticipated to remain in operation for a reasonable transition period.

The ordinance further required that meetings be held by Staff in twelve different sectors of Lee County to inform the public and receive input on proposed plan amendments, and that a full range of meetings, workshops, and hearings, duly noticed, be held by Staff, the Lee County Local Planning Agency, and the Board of County Commissioners.

In response to the Public Participation Procedures Ordinance, two Technical Advisory Committees (TAC) were formed and met to review and comment on proposed amendments to the Comprehensive Plan. The initial TAC which represented intergovernmental interests was composed of representatives of the Southwest Florida Regional Planning Council, the Lee County School Board, the South Florida Water Management District, and the cities of Cape Coral, Sanibel and Fort Myers. The second TAC represented intragovernmental interests and was composed of representatives of government entities which exercise taxing authority within Lee County. Comments from each TAC were reviewed by the Local Planning Agency and the Board of County Commissioners.

To make the Local Planning Agency (LPA) more responsive to the public, and to increase its efficiency and effectiveness, the Board of County Commissioners in December of 1983, adopted an ordinance to replace what had been a one-man Local Planning Agency with a seven-member Agency, which includes appointed citizens. The Lee County Local Planning Agency held, after due public notice, more than eighty hours of hearings on plan revisions and conducted more than seventeen public workshops and six public hearings to solicit public comment on the plan, and

formulate its report and recommendations on plan amendments to the Board of County Commissioners. Following its public hearings, the Local Planning Agency prepared and transmitted to the Board of County Commissioners its Final Report and Recommendations on the adoption of amendments to the Comprehensive Plan.

In June of 1984, the Board of County Commissioners held two public hearings, after due public notice, and incorporated the Recommendations of the LPA into a draft plan amendment. This "LPA Recommended Plan" was then transmitted to the Florida Department of Community Affairs and the Southwest Florida Regional Planning Council for review and comment. During the review by the State and regional agencies, the Board of County Commissioners held a series of eight public informational workshops, at which the Board reviewed the LPA Recommended Plan on a page by page basis and received substantial public input.

After receiving comments and objections from the Department of Community Affairs, and comments from the Regional Planning Council, the Board of County Commissioners then held more than three additional days of workshops and special meetings and ten days of public hearings on the Comprehensive Plan amendment process, after due public notice, and considered all comments of the public, State and Regional Planning Agencies, and other agencies and local governments.

In addition, the Board of County Commissioners in October of 1984, transmitted an individual notice to each property owner in Lee County, in order to notify each owner of the hearings on the adoption of the amendments to the Plan. In response to all

comments received, the Board of County Commissioners on October 19, 1984, revised the LPA Approved Plan and prepared a Board Revised Draft incorporating all of the Board directed changes to that date. Thereafter, the Board held additional hearings to make further revisions. The Lee Plan was adopted by the Board of County Commissioners on November 16, 1984.

ELEMENTS OF THIS COMPREHENSIVE PLAN

The Local Government Comprehensive Planning Act of 1975 requires that the following elements be contained in this document:

- A FUTURE LAND USE PLAN ELEMENT
- A TRAFFIC CIRCULATION ELEMENT
- A GENERAL SANITARY SEWER, SOLID WASTE, DRAINAGE, AND POTABLE WATER ELEMENT
- A CONSERVATION AND COASTAL ZONE ELEMENT
- A RECREATION AND OPEN SPACE ELEMENT
- A HOUSING ELEMENT
- A UTILITY ELEMENT
- AN INTERGOVERNMENTAL COORDINATION ELEMENT
- A MASS TRANSIT ELEMENT
- A PORTS, AVIATION, AND RELATED FACILITIES ELEMENT

This Act also permits county governments to include an element for historic preservation. This element appears in this plan. Counties may also include a safety element. In this comprehensive plan, law enforcement, fire protection, and health care appear in the support services portion of the community facilities element.

The Land Use Element is the cornerstone of this plan. The elements which follow often cite the strategic importance of the Urban Services Area concept in channeling the expansion of urban services, including roads, mass transit, water, and sewerage, to meet the needs of a growing community in an orderly, efficient, environmentally responsible manner. The phenomenal growth patterns of Lee County during the past three decades demand that population projections be used which are also acceptable to state and regional authorities. All population projections used in this plan, unless otherwise indicated, are from the Florida Bureau of Economic and Business Research.

PURPOSES OF COMPREHENSIVE PLANNING

This comprehensive plan will contribute to the achievement of the following purposes:

1. To protect, preserve, promote and improve the public health, safety, comfort, convenience and general welfare.
2. To achieve the most appropriate use of land, water, and other natural resources consistent with the public interest.
3. To protect and conserve the County's natural resources.
4. To prevent inefficient, unsafe, inconvenient or unattractive land development patterns such as urban sprawl.
5. To assure the efficient, adequate and timely provision of public facilities and services.
6. To prevent overcrowding of land and undue concentration of population.
7. To establish a land use system that provides the opportunity for suitable housing, shopping, employment, investment, recreational, charitable, cultural, spiritual, and other private human needs and opportunities consistent with the public interest.
8. To establish a land use system that assures the efficient use of energy, public finances and other limited resources.

9. To establish a growth management system and mechanisms that can react to changing conditions and needs, consistent with the plan's intents and the public interest.

CONCEPTS UNDERLYING THIS COMPREHENSIVE PLAN

These eight concepts have been formulated as a general foundation for the Plan. Most of the policies within the Plan can be closely related to one or more of the concepts. A synopsis of each follows:

Population Assumptions

The Lee County population will continue to grow. As with any future event, the exact magnitude and timing of growth is unknown. Lee County has the responsibility to plan and provide for the population growth which can be reasonably expected. The current projected level of population for the Year 2005 is 429,000. This projection is subject to frequent revision and cannot be accepted as an immutable number. Considering the inaccuracies of population projection and a substantial seasonal population, planning for a population should include an additional 25% above the fixed figure, for a total projection of 536,250.

Natural Resource Role In Economic Stability

The protection of the natural resources of Lee County is essential for the economic well-being of the community. The natural environment, which attracts people to Lee County and results in growth, is the natural resource base of the Lee County economy. If it is plundered, the Lee County economy will fail.

Economic Diversification

In order to provide opportunities to Lee County residents to enjoy higher earnings it will be necessary to diversify the

economic base of the County. The basis for diversification presently exists in the transportation-related facilities, a growing labor force and a growing market. Diversification of the economy should be undertaken in such a manner that it is consistent with and complementary to the existing retail/tourist economic base of the community. Light industry, compatible with the environment and associated with higher wages, must be provided and encouraged in order to expand the economic base and attract and retain an educated working force.

Conformance with State, Regional and Local Policies

Coordination and cooperation between government entities is essential in order to avoid duplication of services and promote optimal government efficiency. The Comprehensive Plan must be consistent with the policies of State, regional and other local governments. Policies promoting or creating inconsistencies must be justifiable.

The Role of I-75 in the Comprehensive Plan

The recent completion of I-75 places Lee County in a unique position. Interchange areas which connect with County arterials increase access and create excellent opportunities for promoting planned growth designed to assist in the diversification of the County economy. Conversely, care must be taken to insure that shortsighted development does not preclude uses which will be more beneficial to Lee County in the more distant future. It is important to make maximum beneficial use of these critical access points and at the same time avoid irreconcilable conflicts between demands such as through traffic and local traffic, con-

ervation and development, commercial development and industrial development, and tourist commercial facilities and general shopping facilities. Land uses surrounding each of the eight interchanges must be analyzed in regards to these points. Land uses should reflect demonstrated highest and best use for the future welfare of Lee County. Flexibility to promote these uses through market forces should not be prohibited.

Transferrable Development Rights (TDR's) and Low and Moderate Income Housing Bonuses

Provision of adequate low and moderate income housing and protection of environmentally sensitive areas are two primary objectives to be accomplished by the Plan. These objectives are best achieved through the creation and implementation of incentive systems. TDR's and bonus densities can (within reasonable limits) be acceptable tools for seeking to accomplish the above objectives, and are incorporated into the Land Use Element.

Urban Services Concept

To maximize efficiency and minimize cost, public expenditures should be concentrated in areas which are specified for Urban Services. Development should therefore be focused on areas where government and private utilities can best provide adequate infrastructure and services. Increased densities and land use intensities are reflected within these Urban Services areas to reflect the present or future availability of infrastructure and urban services. Conversely, land located outside the Urban Service Area reflects lower densities and lesser intensities due to the lesser commitment to infrastructure and services. The

commitment to provide infrastructure within the Urban Service Area in a reasonable and efficient manner is essential to the success of the urban service concept and these plan amendments.

Non-Urban Development Option

To minimize the negative effects of sprawl, and to be consistent with the Urban Services Area concept, development outside the Urban Services Area may be allowed, but will not be encouraged. Criteria to guide this development is set forth within the Plan.

(217-B)

TABLE 1
LEE COUNTY YEAR 2005
RELEVANT STATISTICS

1. Population:

Permanent	429,000
Seasonal Adjustment	+ 25%
Total	536,000

2. Households:

Size: 2.45 persons per household (1980)
 2.04 persons per household (2005)

Totals: 85,823 Households (1980)
 263,000 Households (2005)

3. Land Use:

49,000± Acres - (currently vacant) to be urbanized by 2005
28,000± Acres for residential uses
21,000± Acres for non-residential uses

4. Parks:

Community Parks:	601 Acres (1984)	
	<u>1,094</u> Acres (2005)	
	492 Additional Acres	by 2005

Regional Parks:	1,390 Acres (1984)	
	<u>2,531</u> Acres (2005)	
	1,141 Additional Acres	by 2005

5. Employment/Economic Base:

- Assume 7.5% of Year 2005 pop. to be employed by Industry
- Yields approximately 50,000± Industrial workers by 2005 as compared to 15,163 current Industrial workforce
- 10,683 Acres required to support Industrial Growth by 2005, as compared to approximately 1,100 Acres currently in Industrial use

6. Transit:

- Assume extension of current transit service levels through Year 2005
- Yields need for 9 additional buses

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II. POPULATION AND ECONOMICS
LEE COUNTY COMPREHENSIVE PLAN

POPULATION AND ECONOMICS

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ECONOMIC BASE

The economic base of any community consists of those economic functions which bring income into the community. There are two general explanatory approaches to economic bases. These two are not mutually exclusive. The first is the export base theory and the second is supply-side theory.

EXPORT BASE THEORY. The export base theory argues that demand for goods and services produced in the particular area determines that area's level of economic activity, as well as its rate of growth. Local businesses face two sources of demand for their products. The first, export demand, originates from outside the area. Businesses which sell their goods and services to demand which originates outside the area are known as "basic" industries and are generally associated with the "export" sector of the economy. Local demand, the second sector, consists of demands for the goods and services of firms which originate within the area. Businesses which cater to local demand are "non-basic". Simply put, the basic or export sector brings income into the particular region and the non-basic or local sector recirculates that income within the region.

The size of a region's export sector in a large part determines the overall level of economic activity. The greater the exports of local firms, the greater the size of the labor force, and therefore the greater the purchases of locally originated goods and services. Thus, the size of the local market -- critical for non-basic industries -- is strongly tied to the area's export industries.

Similarly, the growth of the area depends upon the growth of its export sector. As demand for exports increases, basic industries increase both their employment and orders for goods and services used in the production of exports. This results in a multiple expansion of the non-basic sector. This process is sometimes called the "ripple effect". Under the export base theory, then, some areas grow faster and others slower because of differences in the rate at which the demand for their exports grows.

Despite its ability to explain the process of growth, the export base theory has some serious shortcomings in its inability to explain some aspects of local area growth. For example, the theory does not offer any explanation as to why particular firms select individual areas. Additionally, it offers no explanation as to why certain areas do not grow while the demand for their exports are growing and vice versa. The alternative theory bases its explanation of regional growth on the availability of factor (land, labor, and capital) inputs.

SUPPLY-SIDE THEORIES. The supply-side approach to explaining local area growth assumes that the free market forces generally lead to full employment for labor, capital, and other productive inputs. A region's level of economic activity, then, depends directly on the amounts of labor and capital supplied and on the available technology. Similarly, regional growth depends directly on the rate of growth of land (available for use), labor, capital, and technology.

Areas grow at different rates, according to supply-side theories, because supplies of land, labor, and capital inputs grow at different rates in different areas. The supply-side approach would suggest that the higher costs of doing business in the older manufacturing areas would account for their slow rates of growth. The argument is that high costs -- for land, labor, transportation, energy, taxes, etc. -- reduce the rate of return and encourage flight to lower cost areas such as the South and West. This is the basis for the common economic development strategy of advertising an area's lower cost business environment and instituting special tax breaks and other incentives to attract new investment.

As pointed out above, the two theories are not mutually exclusive. Any market response is a function of both supply and demand. The two theories above offer independent explanations of the growth process which are either demand oriented or supply oriented. Clearly, for there to be economic growth, there must be both supply and demand. If either is missing, there will be no growth. While an area has only limited ability to affect the demand for its exports, it can have a significant effect on its ability to supply inputs. Thus, local planning efforts are normally directed at adequate provision of inputs. If demand exists and grows, then economic growth will follow.

In Lee County, those basic functions are tourism and retirement. While some may view retirement as a local economic activity it really is an export. The reason that retirement is an export activity is that the basis for the demand, the retiree

earnings, originated outside of the area. The economic role of these industries is clear when the distribution of employment is observed.

TABLE 1. EMPLOYMENT BY INDUSTRY
LEE COUNTY
1970 - 1983

	NUMBER		% CHANGE
	1970	1983	
SERVICES	5,850	7,060	191.6
RETAIL TRADE	7,570	18,060	138.6
GOVERNMENT	5,520	12,070	118.7
CONSTRUCTION	4,300	9,490	120.1
FINANCE, INSURANCE AND REAL ESTATE (FIRE)	2,870	7,130	148.4
WHOLESALE TRADE	1,110	4,160	274.7
MANUFACTURING	1,740	4,030	131.7
TRANSPORT, COMMUN., & PUBLIC UTILITIES	2,020	4,280	111.9
OTHER	530	1,300	145.3
FARM	1,590	1,760	10.7
MINING	110	300	172.7
ALL	33,190	79,640	140.0
POPULATION	105,216	232,700	221.2

SOURCES: T. H. Roberts, INDUSTRIAL LAND USE NEEDS IN THE LEE COMPREHENSIVE DEVELOPMENT PLAN.

FLORIDA STATISTICAL ABSTRACT - 1982

Table 1 shows the distribution of employment and the change since 1970. It is clear that the greatest percentage of change is in wholesale trade which is the only employment category which grew more rapidly than the population. The most new jobs are found in the services. This trend is typical of what some consider to be the post-industrial era. Contained within Table 1 are several

"megatrends" for Lee County. The first is the growth of wholesale trade and the second is the growth of manufacturing. Lee County is evolving as the distribution center for Southwestern Florida. I-75 and the Regional Airport have made the Fort Myers area the economic center for the rapidly growing region. As both the airport and I-75 become integrated into the regional economic/transit network, wholesale and distribution activities should become even more important. The other major economic event is manufacturing. While manufacturing is declining as an employer nationally, in Lee County it is holding its own. In 1970, manufacturing employed 5.2% of all Lee County employees. In 1983, manufacturing employed 5.1%. Nationally, manufacturing has declined from over 25% to approximately 18% of total employment. The fact remains, however, that the present and future economic base of Lee County lies with tourism and retirement. In the U.S., services employ 20.9% of non-agricultural employees. In Lee County, services employ 21.9%. Retail trade employs 20.2% nationally as compared to 22.6% in Lee County. Table 2 contrasts local employment distribution with national. This table is helpful in identifying the economic base of the County. The convention is to conclude that those economic activities where there is a greater percentage of employees locally than nationally engaged in "basic" activities (i.e., bringing money into the area). By this criterion, the economic base of Lee County is made up of construction; retail trade; services; and finance, insurance, and real estate. The role of the tourist and the retiree in this make up is obvious.

TABLE 2. DISTRIBUTION OF EMPLOYMENT
UNITED STATES AND LEE COUNTY

	<u>UNITED STATES</u>	<u>LEE COUNTY</u>
MINING	1.2	0.4
CONSTRUCTION	5.0	12.7
MANUFACTURING	22.4	5.1
TRANSPORT, COMMUNI- CATIONS & UTILITIES (TCU)	5.7	5.9
RETAIL TRADE	20.2	22.6
WHOLESALE TRADE	7.2	5.2
F.I.R.E.	5.7	9.0
SERVICES	20.9	21.4

SOURCE: U.S. Department of Commerce, Bureau of the Census,
COUNTY BUSINESS PATTERNS.

The problem which Lee County has with this economic base is that it tends to be low wage. The average annual pay for Lee County employees in 1980 was \$11,545 (FLORIDA STATISTICAL ABSTRACT - 1982) as contrasted with \$12,660 for the state and \$14,363 for the nation. The reason for these lower annual earnings is the concentration of lower wage industries in Lee County. Table 3 contains the average annual earnings for Lee County employees.

TABLE 3. AVERAGE ANNUAL EARNINGS
LEE COUNTY
1980

<u>INDUSTRY</u>	<u>EARNINGS</u>	<u>% OF EMPLOYMENT</u>
MANUFACTURING	\$12,243	5.1
CONSTRUCTION	16,773	12.7
T.C.U.	21,025	5.9
WHOLESALE TRADE	20,500	5.2
RETAIL TRADE	10,386	22.6
F.I.R.E.	15,801	9.0
SERVICES	15,378	21.4

SOURCE: FLORIDA STATISTICAL ABSTRACT - 1982

The largest portion of Lee employees are concentrated in the lowest paying industry while the industries which have the highest pay are among the smaller employers.

One of the objectives of Lee County planning is to encourage those economic activities which will offer the possibility of higher employee earnings. The recent major transportation improvements offer the opportunity to capitalize upon the unique location of Lee County and the rapid growth of the region to attract higher paying, and stable, businesses in the transportation, communication, and public utility (T.C.U.) industry. Additionally, the most rapidly growing industry, wholesale trade, is one of the better paying employers. Thus, there appear to be possibilities to improve the relatively low wages within Lee County.

Growth is the reality of the Lee County economy. In fact, growth itself has been a major industry. While current and near term growth is a significant factor in the Lee economy, two factors must be given careful consideration. First, as Lee County develops the rate of growth will eventually decline. The second is that the growth of Lee County is based not upon the exploitation of a natural resource base but rather upon the availability of a pleasant living environment. Growth itself tends to run counter to the pleasantness of the living environment. Thus, it is essential that the growth of Lee County not "exploit" the natural amenities, in the sense of destroying them, otherwise the driving force of the economy will be lost. John Naisbitt wrote in MEGATRENDS:

During the past decade, the debate over the environment and non-renewable resources has raised our collective consciousness about the dangers of the short-term approach. As a general proposition, we have become much more sensitive to the longer-range implications of our short term actions. It has become apparent to most people, for example, that the short-term convenience that encouraged us to pollute the air and water was not worth the long-range damage done to the quality of our lives and our environment. (page 80)

In Lee County, the point that Naisbitt is making is even more relevant than to the typical community. Pollution, of any form, not only damages the quality of life and the environment but it also does irreparable damage to the economy.

Tourists and retirees come to Lee County for one reason -- it is a pleasant place to be. If Lee County ever loses the qualities which attracted these individuals, they will leave and not come back. With them will go the vitality of the Lee economy and any hopes for economic attainment of Lee County citizens.

Fred Bosselman warns in IN THE WAKE OF THE TOURISTS:

The tourist developer cannot regard his attention to environmental considerations as a grudging concession to public pressure. He must treat the protection of environmental quality as an 'internality' -- a cost of doing business that feeds back into the long-range profitability of his hotel, campground, or resort. Different segments of the tourist industry vary greatly in their responsiveness to environmental issues, but most of the industry is well aware that at some point overcrowding and overdevelopment can cause an area to be perceived by tourists as less desirable.

The fact that the tourist industry as a whole may eventually suffer from the excesses of certain developers is unlikely to deter these developers from attempting to maximize immediate gains. Consequently, deficiencies of the market have spurred a search for ways to strengthen control over the development process. (page 33)

Bosselman and Naisbitt are making the same point. Growth, if it is to be a process of economic and social development, must be directed so that it results in long-term vitality, or return, rather than maximizing short-term goals.

The points discussed above lead to the first set of economic assumptions for Lee County planning:

- I.1 The protection of the environmental quality of Lee County is essential for the economic well-being of the community. The natural environment is the natural resource base of the Lee economy. If it is plundered, then the Lee economy will fail.
- I.2 Over time, it is expected and even normal for the rate of growth to slow. It is necessary, therefore, to anticipate the maturation process and to design an economic base which is capable of providing the degree of economic vitality desired with slower growth rates.
- I.3 In order to provide opportunities to Lee County residents to enjoy higher earnings it will be necessary to diversify the economic base of the county. The basis for diversification currently exists in the transit facilities, a growing labor force and a growing market. Diversification of the economy should be undertaken in such a manner that it is consistent with and complementary to the existing economic base of the community.

DEMOGRAPHIC GROWTH

The single most dominant characteristic of past and present Lee County is population growth. Lee County has been among the most rapidly growing areas of the nation. Moreover, it is projected to continue to be in this select group in the foreseeable future. Table 4 sets out the past population of Lee County. During the 1950's, Lee County grew at a rate of 3,287 persons per household.

TABLE 4. LEE COUNTY POPULATION
1950 - 1980

YEAR	POPULATION	CHANGE	
		NUMBER	%
1950	21,810		
1960	54,539	32,867	150.7
1970	105,216	54,677	92.9
1980	205,266	100,050	95.1

SOURCE: U.S. BUREAU OF THE CENSUS

During the 1960's, this rose to 5,468. For the 1970's, the annual rate almost doubles to 10,005 per year. A significant aspect of the population growth has been the age profile of the residents. Table 5 contrasts the growth of the County by age cohort. The greater than proportional growth of persons in the upper age cohorts is clear. Three factors account for this change. First, there is the national and local tendency for birth rates to decline. Second, there is the national and local trend toward greater longevity and, third, there is the immigration of retirees. It is expected that these trends will continue.

TABLE 5. AGE DISTRIBUTION OF THE POPULATION
LEE COUNTY
1950 - 1980

	0-14	15-24	25-44	45-64	65+
1950	4,360	2,938	6,739	5,249	2,524
1960	15,544	6,162	12,980	12,925	6,545
% CHANGE	256.5	109.7	92.6	146.2	159.3
1970	24,936	13,362	20,935	26,935	19,767
% CHANGE	60.4	112.8	55.6	108.4	202.0
1980	35,890	28,218	44,885	50,402	45,871
% CHANGE	43.9	111.2	122.2	87.1	132.1

SOURCE: U.S. CENSUS OF THE POPULATION

Table 6 contains the projected future age distribution of Lee County. The age group which is expected to have the greatest rate of growth in the future is the 45-59 bracket followed by the 25-44 group. The slowest growth is projected to occur within the 0-14 group -- reflecting lower birth rates.

TABLE 6. PROJECTED AGE DISTRIBUTION
LEE COUNTY
1980-2005

	<u>0-14</u>	<u>15-24</u>	<u>25-44</u>	<u>45-59</u>	<u>60+</u>	<u>TOTAL</u>
1980	35.9	28.2	44.9	33.6	62.6	205.3
1985	41.0	32.1	62.0	38.5	77.0	250.6
1990	46.4	32.8	79.2	46.7	89.8	295.0
1995	51.4	34.8	90.8	59.2	101.3	337.4
2000	54.1	38.8	98.1	76.3	111.7	379.1
2005	55.8	47.2	107.3	94.4	124.4	429.0
ANNUAL GROWTH RATE	1.8%	2.1%	3.6%	4.2%	2.9%	3.0%

SOURCE: FLORIDA STATISTICAL ABSTRACT - 1982

The second set of economic assumptions relate to the demographic growth of Lee County:

II.1 The Lee County population will continue to grow. As with any future event, the exact magnitude of growth and the timing of the growth is unknown. Lee County has the responsibility to plan and provide for the population growth which can be reasonably expected. The current projected level of population for the year 2005 is 429,000. This projection is subject to frequent revision and cannot be accepted as an immutable number. Rather, Lee County must establish a reasonable level of demographic growth that it is planning for. Thus, the 429,000 projection is assumed to be a minimum projection. The assumed population which Lee County should plan for is 536,250 -- 25% higher than the 2005 projection.

II.2 The age distribution of the future population will be subject to change. This follows from the current and projected dynamics of demographic change -- both nationally and locally. The planned age distribution is set out in Table 7:

TABLE 7. PLANNED POPULATION (in thousands)
LEE COUNTY
1985 - 2005

	<u>0-14</u>	<u>15-24</u>	<u>25-44</u>	<u>45-59</u>	<u>65+</u>	<u>TOTAL</u>
1985	51.3	40.1	77.5	48.1	96.3	313.3
1990	58.0	41.0	99.0	58.4	112.4	368.8
1995	64.3	43.5	113.5	74.0	126.6	421.8
2000	67.6	48.5	122.6	95.4	139.6	473.9
2005	69.8	59.0	134.1	118.0	155.5	536.3

II.3 The average household size has been declining. As discussed above, this decline is due to declining birth rates and greater longevity. Inasmuch as the trends are projected to continue it is expected that average household size will continue to decline. Table 8 contains the historic and projected average household size of Lee County.

TABLE 8. AVERAGE HOUSEHOLD SIZE

LEE COUNTY

1950 - 2005

	<u>POPULATION</u>	<u>AVERAGE HOUSE- HOLD SIZE</u>	<u>HOUSEHOLD</u>
1950	21,810	3.09	7,058
1960	54,539	3.04	17,940
1970	105,216	2.775	37,916
1980	205,266	2.45	85,823
2005(1)	429,000	2.04	210,000
2005(2)	536,000	2.04	263,000

NOTES: (1) Projected population and households.
(2) Planning population and households.

II.4 All of the population estimates set out above deal only with permanent residents. This tends to underestimate the need for housing and public services in Lee County. The simple fact is that Lee County must serve those people who are within Lee County, not just those who have residency status. Traffic counts, census data and hotel occupancy would indicate that the total number of people within Lee County, at peak season, is 25% higher than the permanent population. This factor needs to be added into traffic, utility, and other public service planning. These non-permanent residents, however, have little impact on housing demand.

INFRASTRUCTURE NEEDS

Whether growth results in community development depends, more than anything else, upon whether the infrastructure needs of new development are met. If new development is provided with adequate roads, parks, utilities, schools, etc., then that new development will not impose costs upon the existing community. The problem of providing sufficient infrastructure is one of the most fundamental issues of growth management.

There are two basic problems of infrastructure provision. The first is that the need for infrastructure increases with the degree of urbanization (or the density of the population). The second relates to the financing of infrastructure -- inflation has eroded the sources used to finance infrastructure. When these two factors combine, a significant problem of service provision results.

As population becomes more densely settled, the need for public infrastructure increases. For example, septic tanks are an efficient and suitable means of wastewater disposal in areas that are sparsely settled. However, when density increases the acceptability of septic systems decreases. After some level of density is attained, central sewers will be needed depending upon

the natural features of a given area. Thus, what was once a private cost becomes a public cost. The same is true for parks, open space, and even roads. As Lee County grows, there will be increasing needs for public infrastructure. Lee County must plan to assure that the needed infrastructure is available as the county grows. This is a problem both of timing and of finance.

Historically, in Florida, most infrastructure capital improvements have been financed with "fixed base" taxes or fees. A tax or fee is "fixed based" when the amount of revenue does not grow with the value of the base. The best example may be motor vehicle license fees. The charge for a license tag is fixed in that it is a set amount that does not increase with the value of a car or the cost of providing the services which the license fee provides. The revenues derived from the motor vehicle license fee is divided between the transportation trust fund, to provide roads, and the Public Educational Capital Outlay (PECO) Fund which is used to pay for schools. As inflation increases the cost of both roads and schools, the license fee does not respond. Thus, it is "fixed base". As a result, roads and schools could be underfinanced. This is also true of roads which are financed by the motor fuels tax (in 1982 the motor fuels tax was modified so that a portion of the tax is now value rather than fixed base). Capital facilities which are financed by service charges present another problem. Utility services such as water and sewer are typically financed by issuing bonds against future increased revenues which would result from growth. However, these inflationary times mean that the bond issues which are sold

at the present will tend to have higher interest rates -- and debt service costs -- than those of earlier bond issues. The higher debt service costs of recent bond issues mean that utility rates for all users may need to be raised given that new and existing users could not be charged differential utility rates.

Lee County, as a policy-making body, faces several problems with respect to infrastructure. The quality of the natural and man-made environment demands that infrastructure support facilities be in place at the time that new development is occupied. To do otherwise would mean that the residents of new development would be undersupplied with needed services. Such an undersupply would be counter to the objectives of protecting the health, safety, and welfare of all residents. Thus, it is necessary for Lee County to utilize growth management methods which assure that necessary support services grow along with the population and the economy. The two main issues are coordination of capital improvement with growth and the financing of the capital improvements.

The coordination of capital facilities with growth is best accomplished by maintaining performance standards for the approval of new development. Such performance standards would require, as a condition for development approval, that there be sufficient support facilities (i.e., roads, schools, parks, utilities, etc.) to meet the needs of new development at the time that the new development is expected to be populated. If such capacity does not exist, then provisions for its creation must be made before the development is approved. This approach will

assure that the needed services are supplied. However, such assurance then leads to the issue of finance.

Lee County has three broad alternatives for financing public facility capital improvements. The first is the expenditure of general revenues to pay for the needed roads, parks, schools, etc. The second is the use of user fees to shift a "proportionate share" of the capital costs to the new users of the system. The third is for some other entity to pay the cost of the needed capital improvements. This other entity could be the private developer or some special district charged with the responsibility to make capital improvements. In terms of the protection of the health, safety, and welfare of present and future Lee County residents and visitors, it does not make any difference which of these alternatives, or combination of alternatives, is selected. Rather, the public health, safety, and welfare will be protected simply by having the needed support facilities in place when they are needed.

While the manner in which the capital costs for new development is paid is not critical to the protection of the public, there are several issues which are relevant. First, the normal or historic sources of capital finance will not be sufficient to pay for the capital improvements which will be needed. Therefore, Lee County must determine some mechanism to raise the funds necessary to pay for the improvements. The selection of the particular method is not the point here. Rather, the point is to clearly set out that some supplemental funding will be necessary:

- III.1 In order to have sufficient revenues to pay for the public capital improvements which new development will require, some supplemental source of revenue will be required.
- III.2 The available supplemental revenue sources are:
- A. General revenues
 - B. Developer assumption and/or user fees
 - C. Special districts

GOVERNMENT REVENUES

Throughout the plan there are proposals which directly or indirectly imply a commitment of public expenditures. It follows then that it is assumed that revenues will be available for appropriation. At this time, this assumption may be somewhat in doubt. The plan itself and its several elements are based upon the assumption that there will be no restrictions on public revenues. Should any event occur which would restrict Lee County revenues, then this assumption would be inoperative and the entire fiscal projections, analyses, and conclusions of the plan would have to be reconsidered.

In the past, the Federal government has made significant contributions to the financing of capital improvements. This is especially true in the case of water and sewer systems. However, the federal government has been restricting the availability of such funding. All indications are that future supply of federal grants and similar forms of intergovernmental aid will not be available. Moreover, there is no indication that the State of Florida is willing or able to make up the shortfall in Federal allocations.

The outlook for future allocations of intergovernmental grants and appropriations, together with the possibility that

local governmental revenue structuring may change substantially in the future, lead to the fourth set of assumptions of the Lee County plan:

IV.1 There will be a continuation of past fiscal parameters.

IV.2 Future intergovernmental aid and grants from the federal government will be restricted. Moreover, no alternative source will be available.

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III. LAND USE PLAN ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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INTRODUCTION

The Land Use Element is in many ways the centerpiece of the entire Comprehensive Plan. It establishes the framework that leads to corresponding decisions on the location, capacity, and timing of roads, water and sewer lines, schools, health centers, parks, and other public services and facilities. It provides opportunities for adequate housing, for shopping areas, for tourism, and for the expanding economic development that is needed to broaden and improve the County's employment and business opportunities. It provides for the protection of key environmental areas and resources. The 1979 Plan was primarily a policies plan. It established some important land use principles and set forth techniques for achieving them. This 1984 revision builds on that 1979 base by adding, among other things, a land use plan map to give specific geographic guidance to zoning, development regulations, capital improvement programming, and other tools that will carry out the plan.

The Land Use Plan lays the groundwork for the policies in other elements. It does this by establishing a sensible development pattern -- not the random, disorganized and costly sprawl and scatter of the past, but a specific logical configuration.

The Land Use Plan Map designates areas for development - Urban Service Areas, based on a number of considerations: zoning, land use, population density and distribution, sewer and water service areas, drainage, environment, fire and police protection, schools, parks and recreation, roads, and transit. The Community Facilities and Services element, in turn, direct these services and facilities to the Urban Service Areas.

The location of industrial and commercial land uses are directly related to the transportation system - rail, air, road, and traffic circulation. The Conservation and Coastal Zone Element defines environmentally sensitive areas. These are depicted on the Land Use Map as Resource Protection Areas and Transition Zones.

EXISTING CONDITIONS AND FUTURE NEEDS

Census data show the County nearly doubled in size each decade from 1950 to 1980. Population projections indicate continued growth of approximately 10,000 new residents per year. Consequently, effective land use policies and plans are needed to accommodate such growth while preserving the quality of life that makes Lee County attractive.

Since the advent of zoning in Lee County in 1962, a substantial amount of property has been converted from agricultural to more intensive zoning. A large portion of such rezonings has been speculative, with the bulk of speculation being for multi-family (RM-2) zoning encompassing over 7,000 acres yielding approximately 47,000 potential dwelling units. In the unincorporated County alone, there are over 20,000 vacant acres zoned for residential use which could accommodate approximately 100,000 new dwelling units with a population of 237,000 at current ratios. There are tens of thousands of vacant platted residential lots. Vacant zoning together with platted lands could accommodate over 218,700 units or 518,000 people.

The County could decline to rezone additional lands for residential purposes through year 2005. This would be an unsound approach, however, because existing zonings were granted without the guidance of a good comprehensive plan, resulting in a land use pattern which has been neither coherent nor consistent. Furthermore, many parcels are located in relatively remote areas, or areas of environmental significance which are precluded from development by current County and State regulations.

Prior to 1981, no definitive existing land use data existed for unincorporated Lee County. During 1981, the Planning Department undertook an exhaustive land use survey, which showed that approximately 36% of existing residential uses in the unincorporated area are located in the South Fort Myers and North Fort Myers Planning Districts. Forty-five percent (45%) of the housing stock is devoted to single family uses, twenty percent (20%) to multi-family uses and twenty-eight percent (28%) to mobile home uses in the unincorporated County. A tremendous amount of platted but vacant lots currently exist countywide (including the City of Cape Coral) and pose a significant problem in terms of adequate phasing of public facilities and services since most lots are individually owned.

A study completed for the Southwest Florida Regional Planning Council "Implementing A Plan For Platted Lands" identifies over 480,458 platted lots in Lee County encompassing over 153 square miles. The lion's share of these platted lands occur within the City of Cape Coral (287,869 lots)* and in Lehigh Acres

*Deed restrictions in Cape Coral require two lots to make one homesite. Also, 3,768 lots are considered "non-developable."

(132,512 lots). Given the monumental impact of development of these platted areas, the County must devise an acceptable strategy to effectively serve these areas as infill occurs.

At present, in excess of 5.8 million square feet of commercial space currently exists or is under construction countywide. This equates to approximately 25 square feet per capita as compared to the Statewide average of 17 square feet per capita. Additionally, the 1981 Land Use Survey identified approximately 4,377 vacant commercially zoned acres. The percentage of the 4,377 acres which have been converted to active use between 1981 and 1983 is not available, but a substantial amount of vacant commercially zoned acreage exists today.

Several major public improvements since 1979 have had substantial impact on County land use. The construction of the Southwest Florida Regional Airport in the remote and environmentally sensitive Six Mile Basin area has stimulated development pressures. Prior to obtaining Federal funds to build the Airport, the County committed to protecting the surrounding area from "induced development." This commitment was made in the Southwest Florida Regional Airport Environmental Impact Statement and subsequent D.R.I. Development Order and has been bolstered by the adoption of special development regulations for the Six Mile Basin in early 1983. The completion of Interstate 75 has reduced traffic on other major thoroughfares but has also resulted in induced pressure for development in undeveloped areas and along connecting corridors. The completion of County Road 869 (Summerlin Road), a four lane divided limited access thoroughfare which

runs from urbanized South Fort Myers to the barrier beaches of Sanibel and Estero Islands, has stimulated tremendous development pressure along the corridor. The County had designed County Road 869 to relieve traffic congestion on the existing arterial system by virtue of its accommodating a substantial portion of through-trips from the urbanized area to the beaches, as well as to serve as a desperately needed additional hurricane evacuation route.

The 1979 Plan has proven vague and subject to conflicting interpretation, and difficult to determine plan consistency. The 1979 Land Use Element provided insufficient guidance for decisions regarding the approximate location and timing of future development. Furthermore, it has been difficult to design an efficient Capital Improvements Program given the Plan's lack of definitive land use direction. Although the Land Use Element establishes policies which address the importance of agriculture, coastal areas, natural systems, and recreational areas, it fails to adequately identify methods of protecting these land uses from potential adverse actions.

This Land Use Element is structured to effectively accomplish these objectives and to implement the following needs:

1. A capital improvement program that is responsive to land use;
2. Adequate and available urban services and facilities in developed and areas designated for development;

3. Methods to protect agricultural, coastal, environmental and recreational land uses.
4. The control of sprawl and premature development;
5. A guidance system for day-to-day zoning, land use and development decisions;
6. The promotion of mixed use, cluster and planned developments, and other innovative land use designs; and
7. The provision of adequate areas for anticipated growth.

Data Base and Methodology

This plan resulted from an intensive two-year analysis, including the preparation of a series of in-depth studies resulting in the preparation of detailed planning maps depicting the information set forth in Table 1.

 TABLE 1. Land Use Element Planning Studies

°Generalized Zoning Study	Preserve Areas, Refuges and Sanctuaries (See Illustration <u>14</u>).
°Generalized Land Use Study	Existing Arterial and Collector Roads--Urban and Rural
°Major and Outlying Urban Areas Study (See Illustration <u>2</u>).	MPO year 2000 Transportation Plan
°Population Distribution by Census Tract Study	Transit Routes (See Illustration <u>5</u>).
°Water Distribution Study (See Illustration <u>8</u>)	Hurricane Evacuation Routes
°Sewage Collection Study (See Illustration <u>9</u>).	Bicycle Facilities
°Emergency and Protective Services Study (See Illustration <u>11</u>).	Aquatic Preserves (See Illustration <u>16</u>).
°Public Schools and Hurricane Evacuation Shelters Study (See Illustration <u>12</u>)	Environmentally Sensitive Lands (See Illustration <u>15</u>).
°Public Parks, Recreation Areas and Preserves Study (See Illustration <u>13</u>).	Cones of Influence (See Illustration <u>7</u>).
°Primary and Secondary Coastal Zone Study	Potential Recharge Areas to Upper Artesian Aquifer
°100 Year Flood Elevations Study (See Illustration <u>17</u>)	Commercial Centers
°Surface Water System Study (See Illustration <u>10</u>).	Enterprise Zones
°Ground Water Resources Study (See Illustration <u>7</u>)	Port, Rail, Airfields, Airstrips and Heliports (See Illustration <u>6</u>).

Beginning in 1981, the County conducted a land use inventory and the results were compiled. Historical growth trends and population density, distribution and projections were noted. (See Illustration 2.). Existing land use, existing zoning and land ownership patterns were examined. Studies and plans for adjacent counties, the municipalities, the Charlotte Harbor Area, and the Southwest Florida Regional Planning area were also reviewed and incorporated, where appropriate, into this element. An economic data base was prepared and economic and industrial development needs were identified in specific studies.

Services, facilities and utilities were inventoried and mapped including sewer and water, park, and recreation, police, fire and emergency services, transportation systems, water resources, environmentally sensitive lands and water, natural resources, schools and evacuation shelters.

Through this process, planning staff has had several hundred meetings, hearings, and workshops with civic and community associations, economic development and environmental interest groups, individuals, consulting firms, representatives from local, regional, state and federal public agencies, other county divisions, private developers and utilities.

The Cities of Fort Myers, Cape Coral and Sanibel are independent planning jurisdictions. However, the analyses underlying the plan were generally conducted on a county-wide basis in order to give as complete a picture as possible and to provide a county-wide and intergovernmental perspective. Those portions of the Land Use Plan map that are within these municipal boundaries

are not the official plans of these cities but are an attempt to represent such plans in a generalized, consistent fashion in order to make the map geographically comprehensive.

LAND USE PLAN

The Urban Service Area

The heart of this Land Use Plan is the Urban Service Area concept. The successful implementation of the plan depends upon a consistent and effective commitment to this concept.

The Urban Service Area consists of those areas which should be permitted to develop to urban levels of density or intensity. It includes the five Urban Areas that are shown on the Land Use Plan Map and described in the following section: (1) Intensive Development Areas; (2) Central Urban Area; (3) Suburban; (4) Urban Community; and, (5) the Industrial/ Business Areas. For purposes of non-residential development, it also includes the Airport Commerce Area and the Interstate Highway Interchange Areas.

The identification of these areas makes it possible for the County to implement an "urban development guidance system" by coordinating its regulatory, fiscal, and public investment powers to see that proper decisions are made as to where and when urban development should occur in the unincorporated areas of the County. By controlling private development through such regulatory tools as zoning, transferable development rights, development standards, and impact fees, the County can see to it that

the Urban Service Area is permitted to accept urban levels of land use density and intensity and that other areas are not. By similarly controlling the timing, location and capacity of such public services as water, sewer, roads, transit, public safety, schools, recreation, drainage, solid waste, and health care facilities, the County can ensure that the Urban Service Area is properly groomed to support these same levels of urban development while the other areas of the County are not.

In the case of urban services which the County provides directly, it can control the timing and location of public services through capital improvements, programming and related activities. In the case of urban services provided by others, such as the School Board, special districts, and private utilities, the County will need to coordinate and, where applicable, assert appropriate regulatory requirements.

The specific nature of these various urban services and their provision is discussed in the other relevant elements of the Comprehensive Plan.

Notwithstanding the ample amount of vacant and developable land that is included in the Urban Service Area, urban development proposals will be submitted which are located outside the Urban Service Area. Such proposals may include an offer to provide infrastructure costs. The provision of all local capital facility costs by the developer can mitigate somewhat the public's

concern over the excess and inefficiency of scattered or leapfrog growth, but it will fall short of eliminating the concern for which the urban services areas concept was adopted.

Even where the developer provides his own local infrastructure, certain areawide or countywide services still tend to be provided for, and funded by, the public-at-large. For example, the cost of areawide public safety, health, and cultural facilities and services, which are not typically viewed as a part of local infrastructure, can be adversely affected by inefficient settlement patterns. Some public services, such as libraries and emergency medical services, may not be as wide-spread now as they will become in the future, as demographic and public service demands change. These can then become an additional future public cost.

Some public service costs are affected by the relative location of various developments to each other, and not merely by the site-specific location of one development or another. Thus, even though the placement of one development further away from another or from the community-at-large may not increase its own on-site costs, it can increase the public costs of interconnecting it by way of public services systems that must therefore be stretched over further distances or split among separated service districts. One example is the splitting of a present or possible future high school district among remote developments.

The purpose of the Urban Service Area is not to stop or retard urban growth but to direct it, manage it, and improve its quality. It is intended as a loose and flexible envelope. Hence, it should always contain more land than anticipated needs indicate, to allow for a safety factor as well as for choice and competition. Moreover, conditions change and it is important that the land use plan in general, and Urban Service Area in particular, be responsive to periodic adjustment. State law provides that the Comprehensive Plan shall be reviewed and evaluated at least every five years. In addition, however, this plan establishes a review procedure in Section XIV whereby a study of the need for adjusting the boundaries of the Urban Service Area will be conducted and forwarded, to the Board of County Commissioners for its review and consideration of amendment.

A basic understanding of the purpose of the Federal Flood Insurance Program is needed before any assumptions concerning its relation to the Lee County Land Use scenario can be made. In hindsight and exercising pure planning theory, all development within floodplains should be prohibited for obvious reasons. Strict prohibition is conceivable in new communities but not realistic in established areas which have already been committed to development over a period of years. This situation, which exists in Lee County, was brought about by Federal Policy which previously up until the late 1960's centered around actual altering of floodplains through massive drainage projects to allow for development. The focus of the Federal Flood policy was changed, however, in 1968 when Congress established the National Flood

Insurance Program. The present program takes into consideration the already existing development within floodplains as well as economic pressures for continued development and attempts to mitigate flood damage by requiring local governments to adopt more stringent land use and building criteria in order for its citizens to receive subsidized flood insurance. It is important to note that the Program only prohibits extending Federal Flood Insurance for new construction on designated undeveloped barrier islands. In summary, the Federal Flood Insurance Program attempts to minimize or mitigate flood damage within floodplains. As a result, new development, planned and built under special criteria, may occur in the floodplains. This takes into consideration basic existing economic development pressures and patterns found in many communities.

The present classifications for a majority of the floodplain within the U.S.A. are Urban Community and Suburban. These classifications have assigned densities which are substantially lower than the other U.S.A. categories of Intensive Development and Central Urban. Hence, the classifications assigned to a majority of the floodplain within the U.S.A. are consistent with the intent of the Lee County Floodplain Ordinance.

In some instances small areas of the floodplain have been designated for Industrial and Intensive Development use. These designations reflect economic conditions and irreversible development trends. Existing compatible land use along with in place infrastructure account mainly for the Industrial classification, while the proximity to downtown Fort Myers and the avail-

ability of urban services underlies the Intensive Development use. All new development or substantial rehabilitation in these areas, however, will have to meet the increased building criteria designed to mitigate or minimize flood damage. Hence, the objectives of the Ordinance should be accomplished.

The Land Use Plan Map (See Illustration #3)

The Land Use categories described in this section are shown on the Land Use Plan map. The Plan defines the location and extent of land uses and establishes performance standards and design requirements. The Lee County Land Use Plan incorporates both the Land Use Plan map and the Comprehensive Plan text. Neither the map or the text can be interpreted correctly independently of each other.

The Land Use Plan map is used to make determinations regarding applications for land use and development the location of various land uses and the levels of residential densities and non-residential intensities. The Goals, Objectives, Policies and Standards shall provide the primary guidance in making these determinations. In the case of apparent conflict between the map and the text the more specific or restrictive shall take precedence.

All development shall be consistent with the Land Use Plan Element and the Comprehensive Plan. The categories shall be reflected in the appropriate zoning classification and land development regulations. Where there are apparent conflicts between the Lee Plan and any adopted rule, regulation or ordinance, the Plan shall prevail.

The accompanying Land Use Plan map designates the following Land Use categories.

1. Urban Service Areas

a. Urban Areas

- (1) Intensive Development Areas
- (2) Central Urban Areas
- (3) Urban Community
- (4) Suburban
- (5) Industrial/Business Areas

(b) Southwest Florida Regional Airport Area

- (1) Airport
- (2) Airport Commerce Areas

(c) Interstate Highway Interchange Areas

- (1) Industrial Interchange Area
- (2) General Interchange
- (3) General Commercial Interchange
- (4) Industrial Commercial Interchange

2. Non-Urban Areas

- a. Rural Areas
- b. Open Lands
- c. Fringe Area

3. Environmentally Critical Areas

- a. Resource Protection Areas
- b. Transition Zones

4. Special Treatment Areas
 - a. Airport Hazard Zone
5. New Community

Each of these is described below.

1. Urban Areas

The Urban Areas on the Land Use Plan Map are those portions of the County where urban development already exists or where it is to be located in the foreseeable future. There are four types of Urban Area: Intensive Development Areas, Central Urban Area, Urban Communities, and Industrial/Business Areas. (See Attached Land Use Plan Map, Illustration 3.)

- a. The Intensive Development Areas are the small dark brown areas clustered near the center of the map--in and around Fort Myers, North Fort Myers, and Cape Coral. By virtue of their central location, the County's current development patterns, and the available and potential levels of public services, they are well suited to accommodate high densities and intensities. Planned mixed-use centers of high-density residential, commercial and office uses are appropriate in these locations. As Lee County moves toward becoming a metropolitan complex of a half-million people, these centrally located urban nodes can offer a diversity of lifestyles, cosmopolitan shopping

opportunities, and specialized professional services that benefit such a region. The standard density range is from eight dwelling units per acre (8du/ac) to fourteen dwelling units per acre (14 du/ac). Maximum density is twenty two dwelling units per acre (22 du/acre).

- b. The Central Urban Area, shown in a medium-brown color, can best be characterized as the "urban core" of the County. It consists generally of the City of Fort Myers, the Capital Improvement Investment Area of the City of Cape Coral, and the close-in suburbs of these two central cities. This is the part of the County that is already most heavily settled and which has the greatest range and highest levels of urban service--water, sewer, roads, schools, and so on. It is also the area in which public services can most readily be expanded to serve the outward expansion of central urban development that can be expected and which should be fostered at urban levels of density and intensity. Residential, commercial, public and quasi-public, and limited light industrial land uses will continue to predominate in the Central Urban Area. This category has a standard density range from five dwelling units per acre (5 du/ac) to ten dwelling units per acre (10 du/ac) and a

maximum density of fifteen dwelling units per acre (15 du/acre).

- c. The Urban Communities are shown in light orange. These are freestanding settlements that are somewhat removed from the Central Urban Area. Included among them, for example, are Lehigh Acres, San Carlos, Fort Myers Beach, Bonita Springs, and parts of Sanibel, Pine Island and Gasparilla Island. Although the Urban Communities have a distinctly urban character, they should be developed at slightly lower densities. As the vacant portions of these communities are urbanized, they will need to maintain their existing bases of urban services and expand and strengthen them accordingly. As in the Central Urban Area, predominant land uses in the Urban Communities will be residential, commercial, public and quasi-public, and limited light industry. Standard density ranges from one dwelling unit per two acres (.5 du/acre) to six dwelling units per acre (6 du/acre) with a maximum of ten dwelling units per acre (10 du/acre).
- d. Suburban areas are shown in dark orange with brown diagonal stripes. They are characterized as being predominantly residential areas that are either

on the fringe of the Central Urban Area or in areas where it is appropriate to protect existing residential neighborhoods. Residential densities are the same as the Urban Community category. Higher densities, commercial development greater than neighborhood centers or industrial land uses would not be permitted.

- e. The Industrial/Business Areas; shown in gray, are the final component of the Urban Areas category. They have an important role to play in the strengthening of Lee County's economic base and will become increasingly important as the County grows in size and urban complexity. To a great extent these are the areas to which Lee County must look for expanded job opportunities, investment and production opportunities, and a balanced and sufficient tax base. These areas have special locational requirements that are more stringent than those for residential areas, including transportation needs (e.g., air, rail, highway); industrial levels of water, sewer, fire protection, and other urban services; and locations that are convenient for employees to reach. Whereas the other urban areas will include a broad combination of residential, commercial, public, and limited industrial land uses, the Industrial/Business

areas are to be reserved mainly for industrial activities per se, as well as for selective land use mixtures such as the combinations of industrial, research, and related office complexes that constitute a growing part of Florida's economic development sector.

2. Non-Urban Areas

The Non-Urban Areas of the Land Use Plan Map include the Rural Areas and Open Lands categories. These are areas in which non-urban development is encouraged.

- a. The Rural Areas are shown in light yellow. Their land use character is to remain predominately rural--that is, low density residential use and minimal non-residential land uses that are needed to serve the rural community. These areas are not to be programmed to receive urban-type capital improvements, and they can anticipate a continued level of public services below that of the urban areas. However, if the Urban Service Area boundary is expanded, the Rural Areas--because of their location and character -- are the non-urban areas most likely to be added to the Urban Service Area. Maximum density in the Rural Area is one dwelling unit per acre (1 du/ac) except as permitted by the Planned Development District Option.

- b. The Open Lands are shown in dark yellow. These areas are very sparsely settled, have minimal existing or planned infrastructure, and are generally quite distant from major shopping and employment centers. They are not to be programmed to receive urban type capital improvements, and they can anticipate a continued level of public services below that of the urban areas. The Open Lands contain most of Lee County's viable agricultural activities--grazing, cultivation, and other farming. The continuation of the Open Lands essentially in their present character will protect and encourage such agricultural activities, provide for a rural character and lifestyle, reserve open space and conserve important natural upland resources. Maximum density is from one dwelling unit per acre to one dwelling unit per five acres (1 du/1-5 acres), except as permitted by the Planned Development District Option.
- c. Fringe Area. These areas are shown in pink on the Land Use Plan Map. These areas border designated Urban Service Areas yet are not a part of the Urban Service Area. The Plan recognizes these fringe areas as potentially appropriate for development at Urban Community densities, although their overall lack of requisite infrastructure may delay such development unless private sector

provision of services and facilities occurs. The Lee Plan does not target these areas for public expenditures. Therefore, development approvals will be wholly based upon a satisfactory demonstration of necessary infrastructure including potential fiscal mitigation for services such as EMS, police and fire protection, educational facilities, as well as all appropriate Plan Goals, Objectives, Policies and Standards. Developments that have lower levels of infrastructure, environmentally sensitive areas or potential negative impacts on potable water resources should be considered for the lower end of the density range and lower levels of intensity compatible with adjacent land uses.

3. Southwest Florida Regional Airport Area

This is the portion of the Land Use Plan Map that includes the new regional airport and the airport-related business and industrial areas that will be attracted to it.

- a. The Airport is the dark blue area in the center of the County, just east of Interstate Highway I-75. It is a focal point for transportation activity in Southwest Florida.

b. The Airport Commerce Areas are shown in the diagonal gray-and-red striped pattern, adjacent to the airport. These areas will accommodate planned, mixed-use developments consisting of warehousing and distribution facilities; offices; ground transportation and airport-related interconnection activity; and hotels/motels, meeting facilities and other hospitality services. Because this area is located within the Six Mile Cypress Watershed Basin Area of Special Concern and is also a primary point of entry into Lee County, special environmental and design review guidelines will be applied to its development.

4. Interstate Highway Interchange Areas

The construction of Interstate Highway I-75 through a corridor that contains parts of the Central Urban Area, the Regional Airport, major anticipated Airport Commerce and Industrial/Business areas, and the Six Mile Cypress Watershed Basin, poses special planning considerations for the use of land adjacent to its interchanges. It is important to make maximum beneficial use of these critical access points and at the same time avoid irreconcilable conflicts between competing demands, such as through traffic vs. local traffic, conservation vs. development, commercial development

vs. industrial development, and tourist commercial facilities vs. general shopping facilities.

Development at these interchanges is to occur as planned developments--that is, developments that are designed as integrated, cohesive units rather than as separate, unrelated projects. This will minimize adverse traffic impacts and provide appropriate buffers, visual amenities, and safety measures.

Each interchange area is designated for a specific primary role: General, General Commercial, Industrial Commercial and Industrial.

- a. The Industrial Interchange Areas are shown as gray squares or rectangles. Permitted land uses in these interchange areas will be essentially the same as those permitted in the Industrial/Business areas--that is, combinations of light industry, research, and offices. In addition, certain visitor-serving uses such as restaurants and hotels will be appropriate if they are part of an integrated office park or industrial center.
- b. The General Interchange Areas, as shown as red squares or rectangles with diagonal pink stripes. They are intended primarily for land uses that serve the traveling public: service stations, hotel, motel, restaurants, and gift shops. But, because of their location, market attractions and desire for flexibility, these

interchange uses permit a broad range of land uses that include tourist commercial, general commercial and light industrial/commercial.

- c. The General Commercial Interchange Area is shown as a red rectangle. They are intended primarily for general community commercial land uses: retail, planned commercial districts, shopping, office, financial and business.
- d. The Industrial Commercial Interchange Area is shown as a gray rectangle with diagonal red stripes. They are designated to permit a mix of light industrial and commercial uses: warehousing, wholesaling, distribution, and contractor yards. This category does not permit heavy or general industrial uses.

5. Environmentally Critical Areas

The Environmentally Critical Areas shown on the Land Use Plan Map consist of areas in which, because of overriding environmental considerations, development is permitted only at very low densities and intensities. These are the Resource Protection Areas and the Transition Zones.

- a. The Resource Protection Areas appear on the Land Use Plan map in a light buff tone. A Resource Protection Area means lands that exhibit soil types, hydrologic and vegetation characteristic of freshwater and salt-

water wetlands. They are areas in which it is necessary to protect, conserve, restore or preserve water resources systems and the biological functions attendant thereto. These areas are unsuitable for all but extremely low density development for one or more of the following reasons:

1. To prevent degradation of water quality.
2. To prevent degradation of freshwater storage capabilities.
3. To prevent the degradation of biological productivity.
4. To prevent damage to property and loss of life due to flooding.
5. To prevent degradation of the viability and diversity of native plants and animals and their habitats.
6. To assure the conservation of irretrievable or irreversible resources.

Permitted land uses in the Resource Protection Areas consist of very low density residential use and uses of a recreational, open space, or conservation nature that will not adversely affect the Area's critical environmental character. The construction of ditches, canals, dikes, roads above grade, or additional drainage is prohibited. Maximum density is one dwelling unit per forty acres (1 du/40 acre).

- b. The Transition Zones are shown on the Land Use Plan Map in the same dark yellow shade used for Open Lands but with a superimposed green diagonal stripe. A Transition Zone means lands that may be seasonally inundated from one to three months as indicated by water marks, do not have depressional soils, and are characterized by a mixture of plant species typical of uplands and wetlands. These areas consist of important water resources areas that are adjacent to major freshwater wetland sloughs and provide protection and buffering from fire, water pollutants and exotic vegetation.

Permitted land uses in the Transition Zones consist of very low density residential use and uses of a recreational, open space, or conservation nature that will not adversely affect the Area's critical environmental character. The construction of ditches, canals, dikes, roads above grade, or additional drainage is prohibited unless it is demonstrated that such proposed construction will not: cause higher rates of runoff or degradation of water quality or retention capacity; increase the possibility of flooding; or otherwise alter the existing wetland systems.

6. Special Treatment Areas

These maps are not shown as separate colors on the Land Use Plan Map but are depicted instead by means of overlay patterns on top of other categories. Hence, areas shown as

Special Treatment Areas are governed by all of the requirements of their underlying categories, and, in addition, they are governed by the additional restrictions associated with their particular overlay category. There is one Special Treatment Area depicted on the Plan map -- the Airport Hazard Zone.

The Airport Hazard Zone comprises the areas overlaid with diagonal blue stripes. These areas are subject to excessive levels of airport-related noise. In addition to meeting the requirements of the underlying Land Use Plan Map categories, these areas do not permit residential land use.

Residential Densities

The following table lists the ranges of permitted densities within various Land Use Plan Map categories, expressed in dwelling units per acre (du/ac). In addition, the County may permit higher densities up to the maximums listed, under the special conditions identified in the footnotes.

Although a residential development must comply with the standard density requirement, it is by no means assured of the maximum density allowed for that category. The application of the Plan's Goals, Objectives, Policies and Standards may preclude a type or density of development on a particu-

lar site even though the development would not exceed the maximum number of dwelling units permitted by the Standard Density Range.

Developments utilizing TDR's or the low and moderate income housing provisions are assured a density above the standard density range.

TABLE 2. RESIDENTIAL DENSITIES

	Standard Density	Maximum Bonus
	<u>Range</u>	<u>Density</u>
Intensive Development Area	8-14 du/ac	22 du/ac ¹⁾
Central Urban Area	5-10 du/ac	15 du/ac ¹⁾
Urban Community ²⁾	0.5-6 du/ac	10 du/ac ¹⁾
Suburban	0.5-6 du/ac	No Bonus
Rural Areas	1 du/1ac	
Open Lands	1 du/1-5ac	
Fringe Area	0.5-6 du/ac	10 du/ac ¹⁾
Transition Zones	1 du/20ac	
Resource Protection Areas	1 du/40ac	
Planned Development Dist. Option	0.5-6 du/ac	

¹ As a planned development and if development rights are transferred from Resource Protection Areas or Transition Zones; or if at least ten percent (10%) of the residential units are permanently for low and moderate income families as defined by the most recent definition from the U.S. Department of Housing and Urban Development Section 8.

² In no case shall the maximum permitted density exceed 3 du/ac on Captiva Island and Gasparilla Island.

GOALS, OBJECTIVES AND POLICIESGOALS

Goals III.A.1. Provide for a high quality of life by planning for population growth, public and private development and redevelopment and the proper distribution, location and extent of land uses by type, density and intensity consistent with the efficient and adequate levels of services and facilities and the protection of natural and environmental resources.

Goal III.A.2. Provide for an economically feasible plan by utilizing growth management systems which coordinate the staging of development with local, regional, State and Federal capital improvements, services and facilities.

III.B. Growth Management/Development Pattern

Policy III.B.1. Most residential, commercial, industrial and public development is encouraged and expected to occur within the designated Urban Service Areas.

Policy III.B.2. Land uses shall not be permitted unless they are consistent with Land Use Plan Map and text.

Policy III.B.3.

Contiguous and compact growth patterns shall be promoted to contain sprawl, minimize energy costs, conserve land, water and natural resources, minimize the cost of services, and reverse development patterns where large tracts of land have been bypassed in favor of development more distant from services.

Policy III.B.4.

Land development shall not be permitted unless adequate capital facilities exist or are assured.

Policy III.B.5.

The County shall coordinate, as fiscally appropriate, capital improvements with the Land Use Plan Map.

Policy III.B.6.

In developed areas where services and facilities are inadequate, the planning, programming and construction of urban services, facilities and capital improvements shall be a priority over undeveloped areas.

Policy III.B.7.

The cost for the provision and expansion of services and facilities that benefit new development shall be borne primarily by those who benefit. Funding may include, but not be limited to, impact fees, special taxing districts, capital construction, operation and maintenance funds, in-lieu-of fees, dedication of land and facilities.

Policy III.B.8.

Cities will be encouraged to plan cooperatively with the County for land areas within and adjacent to their respective urban service areas.

Policy III.B.9.

All Special Purpose Districts, units of local and state governments (excluding lands within incorporated municipalities) and Municipal Service Taxing Units shall comply with the adopted Comprehensive Plan.

Policy III.B.10.

MSTU's may be considered outside Urban Service Areas provided they are consistent with the adopted Plan, are established for a specific improvement for existing development, do not require the County to expend general funds and not induce demand for additional services and facilities.

Policy III.B.11.

Development design shall insure that land uses and structures are well integrated, properly oriented and functionally related to the topographic and natural features of the site, and the placement of uses or structures within the development minimizes the expansion and construction of street and utility improvements.

Policy III.B.12.

Development design shall insure that the internal street system is designed for the efficient and safe flow of vehicles and

pedestrians without having a disruptive effect on the activities and functions contained within and adjacent to the development.

Policy III.B.13.

In residential developments, community facilities, such as park, recreational and open space areas are functionally related to all dwelling units and are easily accessible via pedestrian and bicycle pathways. Townhouses, condominiums, apartments and other similar types of dense multi-family residential development shall have common space provided directly accessible thereto.

Policy III.B.14.

All land use categories permit the consideration of churches and schools (except in Resource Protection Areas, Transition Zones and the Airport Hazard Zones), public uses and buildings, public utilities and Resource Recovery Facilities, public recreation uses (including franchised quasi-commercial uses in conjunction with a public use) and sites for compatible public facilities when consistent with the Goals, Objectives, Policies and Standards and applicable zoning and development regulations.

Policy III.B.15.

Structures which have been damaged by fire or other natural forces to the extent that the cost of their reconstruction or repair exceeds 50% of the replacement cost of the structure may be reconstructed at, but not to exceed, the lawful density and/or intensity at the time of destruction providing that the affected structure is not inconsistent with Federal, State and all local regulations pertaining to it.

Policy III.B.16.

In those instances in which a parcel under single ownership at the time of adoption of the Lee Plan and not a legally sub-divided single family homesite, is divided by the line separating two land use categories, not including the Environmentally Sensitive areas, the parcel may be developed, as appropriate:

- entirely for residential purposes (including accessory uses) at a level which is the sum of the build-outs of each section permitted under the respective land use categories and applicable zoning restrictions; or,
- only partially for commercial or other non-residential uses given that:

(a) 50% or more of the parcel lies in a land use category that permits the commercial or non-residential use; and

(b) the segment of the parcel lying in the land use category of lower intensity is encroached on only to the extent that it is required to create a minimum building site for the zoning district and only to the extent that, when combined with the higher intensity segment, it creates a minimum legal building site as set forth in the current zoning (ordinance) regulations for that district.

Parcels which are bona fide legally subdivided single family homesites, may be developed in accordance with the single family residence provision of the Lee Plan.

III.C. Residential

Obj. III.C.1. Accommodate a wide choice of housing types, densities and prices within the County.

Obj. III.C.2. Provide for adequate locations of low and moderate income housing, through zoning and

the provision of public facilities and services.

Obj. III.C.3.

Provide incentives and requirements for the reassembly, redesign, and replatting of vacant platted residential lots that are not suitable for timely, safe, efficient, and healthy development.

Policy III.C.5

Require residential developments that are Developments of County Impact (DCIs) to be developed as planned residential developments.

Policy III.C.6.

Protect existing and future residential areas from encroachment of incompatible uses that are destructive to the character and integrity of the residential environment.

Policy III.C.7.

Prohibit residential development where physical constraints or hazards exist, or require the density and design to be adjusted accordingly. Such constraints or hazards include but are not limited to flood, storm, or hurricane hazards; unstable soil or geologic conditions; environmental limitations; or other characteristics that may endanger the residential community.

Policy III.C.8

Require high-density, multi-family, cluster and mixed-use developments to have additional open space, buffering, landscaping and recre-

ation areas appropriate to their density and design.

Policy III.C.9. Direct high density residential developments to locations that are near employment and shopping centers; have access to shopping, parks, and schools; and are accessible to transit and bicycle facilities.

Policy III.C.10. Prohibit residential development in all Industrial/Business and Airport Hazard Areas indicated on the Land Use Plan Map, except for residences in the Industrial/Business Area for a bona fide caretaker or security guard.

III.D. Commercial

Objective III.D.1. Promote orderly and well-planned commercial development.

Objective III.D.2. Provide appropriate requirements and incentives for the conversion of strip commercial development into series of discrete, concentrated commercial areas.

Objective III.D.3. Encourage the upgrading or revitalization of deteriorating commercial areas, but prohibit the expansion or replacement of commercial uses which are inappropriately located or that have an adverse impact on surrounding

residential and non-residential uses. Such revitalization includes but is not limited to: store-front renewal, sign control, and the provision of common parking areas and consolidated access.

Policy III.D.4.

Commercial developments which are Developments of County Impact (DCI) shall be developed as planned commercial developments designed to cluster uses as an integrated and cohesive unit in order to:

- provide visual harmony, sign control and screening;
- reduce dependence on the automobile;
- promote pedestrian movement within the development;
- utilize joint parking, access and loading facilities;
- avoid negative impacts on surrounding land uses and traffic circulation;
- protect natural resources; and
- provide necessary services and facilities where they are inadequate to serve the proposed use.

Policy III.D.5.

Commercial development shall occur only in locations that are appropriate to its service and trade area, and that are compatible with

adjacent existing and proposed land uses and with existing and programmed public services and facilities.

Policy III.D.6.

Commercial Development shall be designed to protect the traffic carrying capacity of roads and streets. Methods to achieve this include, but are not limited to:

- a. frontage roads
- b. clustering of activities
- c. limiting access
- d. sharing access
- e. setbacks from existing or future right-of-way
- f. acceleration, deceleration and right-turn-only lanes
- g. signalization and intersection improvements

Policy III.D.7.

Commercial development shall provide adequate and appropriate landscaping, open space, and buffering and be architecturally designed so as to enhance the appearance of structures and parking areas and blend with the character of existing or planned surrounding land use and development.

Policy III.D.8.

Prohibit commercial developments from locating in such a way as to open new areas to premature, scattered or strip development;

but permit commercial development to infill on vacant parcels in areas where an established and substantial trend of commercial development clearly exists.

Policy III.D.9.

Commercial development shall occur only within the Urban Service Area, Planned Development District or New Community land use categories. Minor or rural commercial uses which serve rural residents, limited agricultural - commercial uses which serve rural areas and agriculturally related needs, and limited commercial marinas (not including heavy marine commercial such as extensive storage and hull, engine, and electronic repairs) may be permitted in Non-urban areas.

Policy III.D.10.

Prohibit commercial development from locating near existing or planned elementary or middle school areas in such a way as to jeopardize the safety of students.

Policy III.D.11.

The approval or existence of commercial development on one corner of an intersection shall not dictate the development of all corners for commercial development, nor does the existence of commercial development on an arterial dictate that all frontage must be similarly used.

III.E. Industrial

Objective III.E.1. Promote planned, well-designed industrial development and technological parks.

Objective III.E.2. Industrial land use planning and development should be coordinated with the economic assumptions and aims of the Comprehensive Plan.

Objective III.E.3. Support programs and efforts to attract industrial development and diversification consistent with the Comprehensive Plan and seek industries that employ the local labor force.

Policy III.E.4. Industrial developments that are Developments of County Impact (DCIs) shall be developed as planned industrial developments designed to cluster uses as an integrated and cohesive unit in order to:

- promote compatibility, sign control and screening;
- reduce dependence on the automobile;
- promote pedestrian movement within the development;
- utilize joint parking, access and loading facilities;
- avoid negative impacts on surrounding land uses and traffic circulation;

- protect natural resources; and
- provide necessary facilities and services where they are inadequate to serve the proposed use.

Objective III.E.5. Industrial lands shall be located in areas appropriate to its special needs and constraints, including but not limited to considerations of: topography; choice and flexibility in site selection; access by truck, air, deep water and rail; commuter access for home-to-work trips; utilities; greenbelt and other amenities; air and water quality considerations; proximity to supportive and related land uses; and compatibility with neighboring uses.

Policy III.E.6. The Land Use Plan map shall designate a sufficient quantity of land to accommodate industrial development that will employ the equivalent of between 5% and 7.5% of the County's population in industrial activities by Year 2005.

Policy III.E.7. Permit heavy and industrially related commercial uses in areas indicated as Industrial/Business, and Industrial Interchange on the Land Use Plan Map.

Policy III.E.8. The timing and location of industrial development shall be permitted only with the

availability and adequacy of existing or planned services and facilities.

Policy III.E.9. Priority shall be given for capital improvements, services, facilities and the location of industrial developments to those parts of the industrial land use categories that are adjacent to or near other urban categories.

Policy III.E.10. Permit areas of five acres or less for service commercial, low intensity and light industrial uses outside of the Industrial/Business areas but within the designated Urban Service Areas, provided that adequate services and facilities are available; the use will not adversely impact surrounding land uses; a demonstrated need for such a use can be shown; and environmental and natural resources are protected.

Policy III.E.11. Permit agriculturally related industrial uses that directly serve the rural and agricultural community in areas indicated on the Land Use Plan Map as Rural Areas or Open Lands, provided they have adequate fire protection, transportation, wastewater treatment and water supply and have no adverse effect on surrounding land uses and natural resources.

Policy III.E.12. Permit only those industrial activities that demonstrate they meet local, State and Federal air and water quality standards.

Policy III.E.13. Industrial uses shall be adequately buffered and screened from adjacent existing or proposed residential areas so as to prevent visual blight and noise pollution.

Policy III.E.14. Industrial development shall not be permitted with a traffic circulation plan that allows industrial traffic to travel through predominately residential areas.

Policy III.E.15. Industrial development on San Carlos Island shall be related only to marine, boating and fisheries.

III.F. Agriculture

Objective III.F.1. Preserve and protect existing agricultural lands as a valuable resource for an agricultural and rural environment.

Objective III.F.2. Encourage the utilization of energy and soil conservation management practices in agricultural activities.

Policy III.F.3. Require agricultural operations to meet adopted water quality standards.

Policy III.F.4. Prohibit developments that would diminish, disrupt, pollute or otherwise jeopardize irrigation waters used for agricultural purposes.

Policy III.F.5. Within two years after the adoption of this plan: complete a study to determine (a) the economic and environmental significance of agricultural land use in the County, and (b) whether the amount and location of lands should be limited to agricultural use; and adopt regulations implementing the results of the study.

III.G. Schools

Objective III.G.1. Protect the integrity of schools so that educational functions are not disrupted by the intrusion of incompatible land uses.

Objective III.G.2. Promote safe, efficient and energy-saving transportation for students to and from schools.

Objective III.G.3. Cooperate with the School Board in the planning and selection of future school sites and the development of mutually acceptable guidelines for the selection of such sites.

Objective III.G.4. Encourage the acquisition of school sites large enough to accommodate possible increases in enrollment.

Objective III.G.5. Promote the shared use of park and school sites.

Objective III.G.6. Land uses and development shall not be permitted to the extent that it could necessitate the relocation of schools due to pressures from incompatible uses.

Policy III.G.7. Prohibit developments and land uses that would interfere with the safe, efficient and energy-saving transportation of students to and from schools.

Policy III.G.8. Encourage that neighborhood elementary schools to be located within walking distance of the residential areas they serve.

Policy III.G.9. School sites shall be selected in advance of the developments they are intended to serve and based upon planned densities and development patterns.

Policy III.G.10. Elementary schools shall not be located on arterial streets.

Policy III.G.11. Prohibit school sites that are or will be exposed to physical constraints, hazards or nuisances which are detrimental to the health and safety of students and to the general operation of the school.

Policy III.G.12. Require that secondary schools have access to a collector or arterial street.

Policy III.G.13. Consideration should be given to the design and construction of new schools to serve as hurricane evacuation and emergency shelters.

Policy III.G.14. Prohibit the location of schools in the areas designated on the Land Use Plan Map as Airport Hazard Zone or within other high noise impact areas.

Policy III.G.15. Require that new residential development provide for adequate pedestrian and bicycle access for school children.

III.H. Mineral Extraction

Objective III.H.1. Protect areas containing identified mineral resources from incompatible urban development.

Policy III.H.2. Mineral extraction operations shall meet or exceed local, state and federal standards for noise, air and water quality.

Policy III.H.3. Applications for mineral extraction permits for new or expanding areas shall include an environmental assessment. The assessment shall include, but is not limited to, consideration of air emissions, impact on environmental and natural resources, effect on nearby land uses, degradation of water quality, depletion of water quantity, drainage, fire and safety, noise, odor, visual impacts,

transportation including access roads, sewage disposal, and solid waste disposal.

Policy III.H.4. Applications for mineral extraction permits for new or expanding sites shall include a reclamation plan which provides assurance of implementation.

Policy III.H.5. Extraction operations shall be located and designed in such a way as to minimize adverse environmental impacts.

Standards

The following water, sewer and traffic standards shall be considered in reviewing zoning applications and shall be met in order for a development to receive development approval. These Standards may not be required for a single-family residence under the Single-Family Residence Provision in order to receive a building permit.

Standard III.A.1. Water

- a. The appropriate water provider shall agree to supply adequate water (pressure and volume) to serve the needs of the development.
- b. There shall be provided proof that prior commitments of the provider plus the projected need of the applicant do not exceed the supply and treatment capacity.

c. Development shall connect to a water system provided:

- (1) the water system complies with Chapter 10 D-4 or 17-22 of the Florida Administrative Code;
- (2) adequate fire flow requirements are available or assured.

Development within one-quarter ($\frac{1}{4}$) mile of an existing public water system shall connect to the public water system provided that:

- (1) the existing public water system has sufficient capacity or has approved plans to provide sufficient capacity to accommodate the demand/usage;
- (2) the rules or regulations which govern the existing public water system can be amended to accommodate the connections.

Standard III.A.2. Sewer

- a. The appropriate sewer utility must agree to supply service to the development.
- b. There shall be provided proof that prior commitments of the utility plus the projected needs of the applicant do not exceed the supplier's treatment capacity.
- c. The development shall connect to a public sewage system, except that any development which generates no more than 5,000 gallons per day may be

permitted to use an individual sewage disposal system provided it complies with Chapter 10 D-6 of the Florida Administrative Code and the proper permits are obtained.

- d. Development within one quarter ($\frac{1}{4}$) mile of an existing public sewage system shall connect to the public sewage system, provided that:
 - (1) the existing sewage system has sufficient capacity or has approved plans to provide sufficient capacity; and,
 - (2) The rules and regulations which govern the existing public sewage system can be amended to accommodate the connection.
- e. Where a development provides a public sewage system, that system shall meet minimum standards adopted by the County.

Standard III.A.3. Traffic

- a. A traffic impact statement shall be submitted to and approved by the County Engineer for the following developments of county impact.
 - 1. A Planned Development District.
 - 2. Residential developments involving in excess of 50 units and/or 10 acres.
 - 3. Business uses involving in excess of 5 acres and/or 50,000 sq. ft.

4. Mobile home parks involving in excess of 150 mobile units.
 5. Recreational, cultural, or entertainment facilities (exclusive of golf courses) involving in excess of 500 vehicle off-street parking space capacity or 20 acres.
 6. Office buildings or office complexes involving in excess of 5 acres and over 50,000 sq. ft.
 7. Industrial, processing or manufacturing activity involving in excess of 5 acres.
- b. The traffic impact statement shall include the following:
1. Project peak hour traffic generation, distribution and assignment to the area-wide roadway network.
 2. Other committed area development traffic.
 3. Existing and future capacity of roadways/intersections.
 4. Peak hour traffic impact analysis at "critical" intersections (operating at Level of Service "C" or below or high accident intersections) which abut or provide access to the project from the primary entrance(s) or access point(s) to and including the intersection of the primary access with the nearest arterial or collector.

5. Hurricane evacuation time impacts of the proposed development.
6. Required improvements to offset the total traffic impacts and improvements to maintain Level of Service "D" during the peak seasons.
7. Relationship of the proposed project to the Traffic Circulation Element, Capital Improvement Program and the Metropolitan Planning Organization (MPO) Transportation Plan.

Standard III.A.4. Environmental Review Factors

In any case where there exists or there is the probability of environmentally sensitive areas, as identified by Lee County, the Corps of Engineers, Department of Environmental Regulation, Department of Natural Resources, South Florida Water Management District or other applicable regulatory agency, the developer/applicant shall prepare an environmental assessment that examines the existing conditions, addresses the environmental problems and proposes means and mechanisms to protect, conserve, or preserve the environmental and natural resources.

Standard III.B.

Urban residential densities above the standard density range shall have access to a collector street or a street of higher functional classification.

Standard III.C. Factors Applicable To Commercial Land Use, Zoning and Development Review

In addition to the Standards required above, the following factors apply to commercial applications and development.

1. Applications for commercial development shall be reviewed and evaluated as to:

- (a) Traffic and access impacts (Zoning and Development Review)
- (b) Landscaping and site planning (Development Review)
- (c) Screening and buffering (Development Review)
- (d) Availability and adequacy of services and facilities (Zoning and Development Review)
- (e) Impact on adjacent land uses and surrounding neighborhoods (Zoning)
- (f) Proximity to other similar centers (Zoning)
- (g) Environmental considerations (Zoning and Development Review)
- (h) Market analysis for neighborhood, community or regional commercial (Zoning)

2. Minor Commercial

- (a) Major function Provide for sale of convenience goods and services.
- (b) . Location (1) On or near intersections with direct access to collector street or street of higher classification.

- (2) May be located within a planned development provided it is located and designed to meet the commercial needs of the majority of the residents of the development.
- (c) Trade Area Generally within one mile and not considered as an attractor.
- (d) Site Area Two acres or less.
- (e) Range of Gross Floor Area Less than 25,000 square feet.
- (f) Design Standards
- (1) Compatible with adjacent uses
 - (2) Adequate buffering, screening, landscaping, & architectural treatment.
 - (3) Sufficient parking; properly designed and safe internal traffic circulation.
3. Neighborhood Commercial
- (a) Major function Provide for the sale of convenience goods and personal services such as food, drugs, sundries and hardware items.

- (b) Leading tenants Supermarket and drug store.
- (c) Location At the intersection of collector and arterial or arterial and arterial. In Urban Communities without any intersecting network of collectors and arterials, Neighborhood Commerical centers may be located using the standards for minor commercial centers.
- (d) Radius of primary trade area $1\frac{1}{2}$ miles or 5 minutes driving time (at 20 mph)
- (e) Minimum population to support center 4,000 people
- (f) Site Area 2 to 10 acres
- (g) Range of Gross Floor Area 25,000 to 100,000 square feet.
4. Community Commercial
- (a) Major Function Some functions of neighborhood commercial. Provide for sale of retail goods such as clothing, variety items, appliances and furniture.
- (b) Leading tenants Supermarket, drug store, minor department store, variety or discount center.

- (c) Location At the intersection of arteri-
als.
- (d) Radius of trade 5 miles or 15 to 20
area minutes driving time.
- (e) Minimum population 30,000 people
to support center
- (f) Site Area 10 to 35 acres
- (g) Range of Gross 100,000 to 300,000 square
Floor Area feet
5. Regional Commercial
- (a) Major Function Some functions of community
center. Provides full range
and variety of shopping goods
for comparative shopping such
as general merchandise, ap-
parel, furniture, and home
furnishings.
- (b) Leading Tenants One or more full line depart-
ment stores.
- (c) Location Easily reached via a major
arterial from and within a
short distance of an inter-
change (from $\frac{1}{2}$ to 1 mile).
Requires special access lanes,
points of entrance & exit &
traffic control devices care-
fully designed to disperse

traffic over the major thoroughfare system and to handle the peak loads generated by such centers. Access by public transit is required.

- (d) Radius of trade area 8 or more mile or 30 minutes driving time.
- (e) Minimum population to support center 150,000 people
- (f) Site Area 35 to 100 acres
- (g) Range of Gross Floor Area 300,000 to 1 million square feet or more.

6. Application for neighborhood and community commercial zoning and development shall provide a professional market analysis indicating among other things a demonstrated need for commercial development at the proposed location, the types of marketable commercial activities, and the projected trade area needs of the proposed development.

- (a) In addition to the requirements of Section III.C. above, applications for a regional commercial center shall include:
 - (1) Trade area of proposed center.
 - (2) Present and projected population of the trade area.
 - (3) Effective buying power in the trade area, present and projected.

- (4) Net potential buying power for stores in the proposed center, and on the basis of such buying power, the recommended store types and store floor area.
 - (5) Residual amount of buying power and how it may be expected to be expanded in an existing business area serving the proposed trade area.
7. Commercial Development "at an intersection" shall extend no more than one-quarter mile from the intersection and include proper spacing of access points.
8. Development at the Daniels Road/I-75 and the Lockett Road/I-75 interchanges shall be located within one-half mile rectangle as measured from the interchange centerpoint. Any contiguous property under one ownership may be developed as part of the interstate interchange provided the property under contiguous ownership to be developed as part of the Interstate Interchange may not extend beyond three-quarters of a mile from the interchange centerpoint. This is intended to promote planned developments under unified ownership and control, and to insure proper spacing of access points.

Development at the other designated interstate interchanges shall be located within one-half mile as measured east or west from the interchange centerpoint and within one-quarter mile as measured north or south from the centerpoint.

Standard III.D. Factors Applicable To Industrial Land Use, Zoning and Development Review

In addition to the standards required above, the following factors apply to industrial applications and development.

1. The development shall comply with local, state and federal air, water and noise pollution standards.
2. When located next to residential areas, industry shall not generate noise levels incompatible with the residential development.
3. Bulk storage or production of toxic, explosive or hazardous materials shall not be permitted near residential areas.
4. Contamination of ground or surface water shall not be permitted.
5. Applications for industrial development shall be reviewed and evaluated as to:
 - (a) air emissions (Development Review)
 - (b) impact and effect on environmental and natural resources (Zoning and Development Review)
 - (c) effect on neighbors and surrounding land use (Zoning)
 - (d) impacts on water quality and water needs (Zoning and Development Review)
 - (e) drainage system (Development Review)
 - (f) employment characteristics (Zoning)
 - (g) fire and safety (Zoning and Development Review)

- (h) noise and odor (Zoning and Development Review)
- (i) buffering and screening (Development Review)
- (j) impacts on transportation facilities, street access roads, and access points (Zoning and Development Review)
- (k) access to rail, major thoroughfares, air and, if applicable, water (Zoning and Development Review)
- (l) utility needs (Zoning and Development Review)
- (m) sewage collection and treatment (Zoning and Development Review)

PLANNED DEVELOPMENT DISTRICT OPTION

I. PURPOSE

The Planned Development District option is presented as a mechanism for adding flexibility to the Urban Service Area approach of the Lee County Comprehensive Plan; it provides a means for increased residential density and ancillary development to take place in certain land use areas outside the Urban Service Area. That development must be totally independent of County subsidized facilities and services and shall not result in harmful environmental/ natural resource, economic, fiscal, infrastructure/ services, or public safety impacts. The rationale for the Planned Development District is that the Plan commits the County government to provide urban services within the Urban Service Area; outside that area (urban level) County facilities and services are not available, but the County is responsible for orderly land use and for ensuring against impacts harmful to the public health, safety or welfare.

II. CONCEPT.

A "Floating" performance standard-based district can be requested by a property owner or developer seeking permission to develop outside the Urban Service Areas at densities higher than those permitted by right in the Rural Area or Open Lands land use categories. Requests will be granted only after comprehensive reviews, including professional impact analyses provided by the applicant, and demonstration that the project will be self-sufficient. If standards and requirements are met, then the density may be increased up to the Urban Community density range (without bonuses).

III. TITLE: PLANNED DEVELOPMENT DISTRICT OPTION

IV. PERFORMANCE STANDARDS:

1. Self-sufficiency: Capital Costs:

All internal improvements (water, sewer, roads, water management, recreation) must be installed to County standards at the developer's expense and the developer must pay an equitable share of the capital costs of all off-site improvements and services required by the project (e.g. arterial streets, transit service extensions, solid waste disposal, public protection).

2. Self-sufficiency: Operating Costs:

The developer must demonstrate that the operating and maintenance costs of the project will not be borne by the County, through establishment of a homeowners association, Municipal Services Taxing Unit (MSTU), or other legally responsible organization or arrangement (e.g., contracts with public or private service providers).

3. Impact Analysis: Environmental:

The developer must provide an analysis of environmental impacts of the project, conducted by professional engineers, biologists, landscape architects, and/or planners, including:

- a. Hydrologic. Modeling of surface water quality and quantity impacts within the drainage basin(s) and environmental systems affected. Modeling of ground water drawdown. Description of mitigation of impacts.
- b. Vegetation: Mapping of vegetation within project area. Description of mitigations of impacts.
- c. Wildlife: Mapping of habitats. Mitigation measures.
- d. Soils. Description of anticipated erosion and sedimentation impacts. Mitigation measures.
- e. Wetlands. Description of impacts on wetlands. Mitigation measures.
- f. Floodplains or Riverine Areas. Description of impacts on floodplains or riverine areas. Mitigation measures.

4. Impact Analysis: Fiscal & Economic:

The developer must provide an analysis of fiscal and economic impacts of the project, including:

- a. Estimated annual average ad valorem tax yield from the development during each phase;

- b. Estimated capital costs of the development and the source of these funds for all public facilities and services required by the development, on-site and off-site, during each phase.
- c. Estimated average annual operating and maintenance costs of the development and the source of these funds for all public facilities and services required by the development during each phase; including water supply, wastewater disposal, solid waste disposal, storm water management, recreation, roads, and public protection (such as EMS, hospitals, police and fire protection).
- d. Estimated expenditures for development during each phase.
- e. Impacts of displaced activities including agriculture or other pre-development land uses.
- f. Market feasibility of the development.

5. Impact Analysis: Social:

The developer must provide an analysis of the social impacts of the project, including:

- a. Impact on adjacent neighborhoods during each phase of the development, including traffic generation, noise, runoff, etc.
- b. Impact on housing supply including the number of low/moderate income dwelling units provided, the total units and the proposed sales price or rental range (by type) of unit.

- c. Public safety impact for police and fire protection and land uses in hazard areas, such as floodplains, and measures for hurricane evacuation and/or sheltering.
- d. Educational impact including estimates of average annual school-age children and contributions to school site or construction needs and any special needs of the population.
- e. Health impact including travel time to health and medical facilities and provisions for any special health needs of the population.

V. PROCEDURE:

The application for a Planned Development District will proceed through the following steps:

1. Preliminary consultation with County Planning Department.
2. Submission of proposed plan and impact analyses, with required fee.
3. Determination by County Planning Department of adequacy of information and proposal with respect to standards and requirements.
4. Revision of plan and analyses as necessary.
5. Public hearing.
6. Approval/disapproval of proposal.
7. Completion of necessary agreements and funding arrangements.

8. Issuance of development approval.
9. Submission of construction plans for permit approval.
10. Issuance of construction permits.

NEW COMMUNITY

New Community areas are depicted in dark green on the Land Use Map. These lands are areas of the County outside of the Urban Service Area which are suitable for the development of large scale multi-use communities developed pursuant to a Comprehensive Master Plan. New Community lands are lands that are capable of being planned and developed as a cohesive unit in order to better achieve conservation of important environmental resources and to initiate areawide management of surface water systems. The New Community land is located such that the area is capable of being developed with a balance of residential and non-residential uses and that major impacts of the development are internalized and/or alleviated by existing or planned infrastructure. New Community areas will be developed as free-standing economic units and will not impose negative fiscal impacts on the County.

New Communities shall not exceed a gross residential density of six (6) dwelling units per gross acre and shall have at least the following characteristics:

- 1) The land will be developed under a well conceived overall Master Plan.
- 2) The land can be served with all necessary facilities and services, at no expense to the County. Uniform Community Development Districts and Special Taxing Districts may be utilized to achieve this objective.

- 3) The land can distribute population, recreation, open space, educational, office and research facilities in an orderly and attractive manner.
- 4) The land shall be developed in such a manner as to protect environmentally sensitive areas.
- 5) The land shall be developed as a free standing community offering a complete range of land uses (e.g. a full mix of housing types for a range of household incomes, industrial and office employment centers, community facilities such as fire departments, schools, law enforcement offices, public recreational areas and health care facilities' and community commercial areas.
- 6) Offsite impacts shall be mitigated.

(269B-C)

IV. TRAFFIC CIRCULATION ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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TRAFFIC CIRCULATIONINTRODUCTIONPurpose

Florida state law mandates that the Lee County Comprehensive Plan contain "a traffic circulation element consisting of the types, locations, and extent of existing and proposed major thoroughfares and transportation routes." (Florida Statutes, Section 163.3177(6)(b)).

Florida law also requires that the Comprehensive Plan address matters of mass transit and of ports, aviation, and related facilities. These two portions of the Comprehensive Plan may be incorporated within the traffic circulation element, or presented as separate elements as they are in this plan. (Florida Statutes, Sections 163.3177(7)(a) and (b)).

The traffic circulation element may include plans for the development of non-automotive vehicular and pedestrian traffic,¹ but such inclusion is strictly optional. This element will include plans for the development of bikeways, in coordination with the recreation and open space element.

¹Florida Statutes, Section 163.3177(7)(c) and (d).

Existing Conditions and Current Needs

Transportation plays a vital part in the daily life of every urban citizen. Efficient transportation systems stimulate and facilitate economic growth and inadequate transportation systems impede economic progress. The condition of transportation services and facilities heavily influences the overall desirability of a community as a place to live, work, or visit. Further, the state of a community's transportation system can preserve or degrade the region's environmental quality.

The Lee County Planning Department staff has reviewed the existing County Comprehensive Plan Traffic Circulation Element and the Transportation Plan of the Metropolitan Planning Organization. The Evaluation and Appraisal Report, which is required by the 1975 Local Government Comprehensive Planning Act, concluded that the objectives and policies in the 1979 element were often too vague to guide public and private action. Although the provisions of this new traffic circulation element are in general agreement with the MPO plan, staff has identified additional needs which have been incorporated.

The provision of adequate transportation facilities and services is one of the primary responsibilities of local governments. Lee County shares the responsibility for developing its transportation system with the State of Florida, and with the three municipal governments. Studies have demonstrated that significant percentages of the population of each municipality, and of the unincorporated area, work, shop, and seek recreation in other parts of the County. In light of the need for the

relatively free movement of people, goods, and services, a sound transportation system is essential to the economic health and social well-being of the community.

Lee County has seen phenomenal population growth during the past thirty years. Population has nearly doubled each decade since 1950. This high growth rate has made Lee County the nation's fastest growing Standard Metropolitan Statistical Area (SMSA) during the decade of the 1970s.

Two-thirds of this growth has occurred in the urbanized part of the County, including Fort Myers, North Fort Myers, South Fort Myers, and Cape Coral. Growth within the urbanized portion of the County has been fairly distributed between the north and south. Approximately half of the growth has taken place north of the Caloosahatchee River (including Cape Coral) and approximately half has occurred south of the river.

A summary of the origins and destinations of work trips is shown in Table 1. In 1980, 52% of all work trips within Lee County were made to the City of Fort Myers, although a majority of the trips were not to the Central Business District. Cape Coral, on the other hand, provides employment for only 46% of its workforce, thereby placing 54% of its workforce on the roads. The heaviest work trip movement has its origins in the unincorporated South Fort Myers area with destinations in the City of Fort Myers. Six times as many persons travel to work from the unincorporated portions of Lee County to the City of Fort Myers than travel from the City to work in the unincorporated areas.

Lee County is served by Interstate 75, which passes to the east of the urban area. This facility primarily carries through traffic from the County to other parts of the state. The other components of the county system include one major U.S. highway (U.S. 41), seven state highways, several major county roads, and a number of local service roads. A discussion of road types will be included in the "Standards" section of this element.

Current Traffic Volumes: Lee County monitors its road system through a traffic counting program which helps to identify roads which are approaching their capacities. The Lee County Department of Transportation maintains several traffic count stations on State and County roads. Traffic volume trends along major thoroughfares during the past five years indicate an annual average increase of nearly 4% per year.

Lee County's busiest artery is the section of U.S. 41 which runs through the City of Fort Myers south to College Parkway, carrying daily volumes approaching 50,000 vehicles. The opening of I-75 has actually reduced traffic volumes on U.S. 41 by diverting through traffic from the County's busiest commercial area. Bridge crossings, especially the Caloosahatchee and Cape Coral Bridges, experience heavy volumes due to constricted traffic flow.

Traffic volumes fluctuate depending upon the time of day and the season during which the count was taken. Traffic circulation plans must seek to accommodate rush hour volumes. In Lee County, seasonal traffic is an important consideration because during the winter months the traffic volumes rise by approximately 25%. These increases are not distributed evenly throughout the County.

TABLE 1: Lee County Work Trips Origin/Destination - 1980

<u>ORIGIN</u>	<u>CBD</u>	<u>DESTINATION</u>			<u>Total</u>
		<u>City of Ft. Myers</u>	<u>Cape Coral</u>	<u>Rest of County</u>	
Cape Coral	400	3,388	4,863	1,761	10,412
City of Ft. Myers	981	9,505	473	2,905	13,868
N. Ft. Myers	657	3,550	670	2,362	7,239
Rest of County	1,653	15,050	1,495	17,502	35,700
Total	3,691	31,493	7,501	24,530	67,219

(Of these work-type trips, 93% were made by automobile, 4% by walking; 1% by transit, and 3% by other means.)

* * *

This updated traffic circulation element recognizes five land use needs and realities confronting Lee County, which are as follows:

- 1) There are critical environmental and economic development issues that demand a carefully controlled future land use pattern -- one with sufficient flexibility to allow for individual choice and to accept changing circumstances, but one which also contains enough certainty to be relied upon with a reasonable measure of confidence.

- 2) The County's rate of growth requires that the government, and the public, know where growth is going to occur so public facilities can be planned in advance. The government needs to avoid urban scatter and sprawl which is inefficient and expensive to serve.
- 3) Because of its large geographic size, Lee County has much more area than will be needed for development in the foreseeable future. Therefore, difficult as the task may seem, some areas must be given priority over others for development during the coming five, ten, fifteen, and twenty year periods.
- 4) There is a present demand for, and acceptance of, stringent, but equitable, growth management tools contrary to a few years ago. The state of the art in growth management has advanced rapidly over the past few years, particularly in high-growth Florida counties. Conventional Euclidean zoning and traditional subdivision regulations have been supplemented with a wide array of practical, legally defensible tools, such as special environmental controls, development standards, impact fees, transferable development rights, performance-based zoning, and increasingly definitive capital improvement programming.
- 5) The control of decisions as to when and where roads shall be built is one of the County's prime tools for shaping future development patterns. By extending or enlarging the road network to make certain areas more

accessible or less congested, residential, commercial, and industrial growth can be channeled and guided into their proper places. Conversely, by withholding road improvements, development can be deterred in areas where it should be avoided in the interests of environmental conservation or government economy.

Data Base; Methodology

The two principal sources of data for this element were the 1981 field survey conducted by the Lee County Planning Department and the Lee County Transportation Study conducted by the Metropolitan Planning Organization (M.P.O.).

The field survey determined the existing land use of every section of Lee County relying upon aerial photographs and on-site verification by staff members. In conjunction with the work on the proposed Land Use Map, the Planning Department staff studied the existing land use maps to determine the amount of vacant acres within the Urban Services Area and multiplied that acreage by the proposed allowable densities. The resultant figures became the basis for determining future traffic volumes. The M.P.O. Transportation Study provided data in each of 323 Traffic Analysis Zones (TAZ) relating to population, size of labor force, commercial and industrial employment, and other figures useful in determining future traffic trends.

This 1984 plan update process begins by recommending a specific future land use plan map. Once this future land map has been reviewed and adjusted to the point where it emerges as a

consensus County Policy, the future road network can be fashioned in greater specificity to include recommended roadway and bridge alignments, cross-sections and staging priorities. That will be done as a part of this update so that an appropriate synergy between land use and traffic will be reflected in the two elements.

A Traffic Circulation Network map is a part of this element and is included herein. (See Illustration 4). The Traffic Circulation Network map as presented identifies the future freeway, arterial and major collector roadway network, the basic number of lanes necessary to support future growth and construction cost estimates associated with that future network. As such it represents the future roadway network necessary to serve the County's growth and future land use pattern suggested in other elements of this Plan update. Modifications will be made in the future to reflect the adjusted and consensus future land use plan with greater specificity given to that network including recommended roadway and bridge alignments, necessary cross-section (i.e., number of lanes, etc.) to serve the projected population growth and location of future development, and recommended staging of that network.

The balance of this element sets forth recommended traffic circulation goals, objectives and policies that are to be followed in the establishment of the detailed road network.

ECONOMIC ASSUMPTIONS: TRAFFIC CIRCULATION ELEMENTA. GENERAL

The provision of roads and other traffic accommodation systems has become one of the more difficult planning and capital improvement finance issues facing local governments. Growing areas such as Lee County face the need to provide transportation improvements in proportion to the growth. Rapidly growing areas, again such as Lee, face the even more difficult problem of financing improvements at a rate which is consistent with the growth of traffic. Providing an adequate traffic circulation system is one of the most important determinants of the economic success of a community and also one of the more important determinants of the quality of life to residents. An insufficient traffic circulation system results in an unsafe condition for the motoring public, and also repels potential business from such locations. Thus, Lee County must make provision for an adequate traffic circulation system for both the health and safety of the public and the vitality of the economy.

The growth which Lee County should plan for is set out in Table 2. This table contains the projected future residential population for the county to 2005. The objective of this element of the plan is to provide the needed traffic circulation services for a growing Lee County. Thus, Lee County needs to be in the position where adequate provision has been made for future growth. Thus, an "adequacy" factor of 25% is added to assure that there will be planning for sufficient capacity to meet the future needs of the county.

TABLE 2
PROJECTED POPULATION
LEE COUNTY
1980 - 2005

<u>YEAR</u>	<u>RESIDENTS</u>	<u>ADEQUACY</u>	<u>TOTAL</u>
1980	205,266	51,317	256,583
1985	250,600	62,650	313,250
1990	295,000	73,750	368,750
1995	337,400	84,350	421,750
2000	379,100	95,775	473,875
2005	429,000	107,250	536,250

SOURCE: Florida Statistical Abstract - 1982, and Lee County Division of Community Development.

B. ROAD FINANCE

The general approach to financing construction projects, both in Florida and the other states, has been the use of a user fee. Road projects have been historically paid for by motor fuel taxes and other user based assessments such as motor vehicle license fees. These collections have been separated and utilized for road projects. The theory behind this approach is that the users of the roads were the ones who benefitted from the roads and therefore they should pay for them. This system had a certain simple beauty to it. All owners paid a fixed amount --

almost a road access charge -- in the form of a motor vehicle license fee. In Florida the amount of the fee is based upon the weight of the vehicle, for the weight of the vehicle is deemed to be a determinant of the amount of damage which individual vehicles do to the road system. The more that the road system is utilized by an individual user the greater the individual benefit. Taxing motor fuel sales to build roads imposes a greater share of road costs on those who make greater use and receive greater benefits. This system applied to local, State and Federal road programs.

The first major deviation from the user fee approach to road finance came with the interstate highway system. Congress determined that there were significant national defense benefits to the interstate highway system and thus appropriated general revenues for the system. However, a return to the traditional approach has occurred when Congress raised the federal motor fuels tax to 12 cents per gallon in order to maintain the interstate highway system. The State of Florida has utilized the motor fuels tax as the primary basis for financing road construction and maintenance programs. The state maintains a tax of 5% of the value of a gallon of motor fuel plus 4 cents per gallon. These revenues are placed into a transportation trust fund from which they are divided between the state (the 5%), the counties (5th, 6th and 7th cents) and the municipalities (the 8th cent). Additionally, counties may propose a 9th cent motor fuels tax which must be approved by referendum and counties may impose up

to a 4 cent per gallon tax for road construction or maintenance. Counties in Florida frequently utilize "road and bridge" (property) taxes to supplement available road construction and maintenance monies. Like the federal policy, the Florida system makes use of motor fuel taxes with some supplement from other sources when it is deemed that there is a substantial public benefit occurring from such an appropriation.

The basic system of road capital finance in both Florida and the nation was firmly established in the 1930's. Minor revisions were occasionally made in this basic system but without modifying it to any extent. The objective of the motor fuels taxation system was to provide enough revenue from motor fuel and similar taxes to pay for the needed roads. However, these taxes were imposed on a "fixed unit" basis. This means that the motor fuels taxes were so much per gallon rather than basing the tax on the value of a gallon. What this meant was that the revenue base did not expand to meet the growth of road construction and maintenance costs resulting from inflation. The consequences of this approach, given inflation, was that as each year passed the ability of the transportation finance system to pay for needed improvements fell further behind. The 1983 Florida Legislature responded to this problem by shifting the state portion of the motor fuel tax from a fixed base (4 cents per gallon) to a value base (5% of value). This did not substantially rectify the past deficiencies of the system but it did provide some additionally needed revenue for the state transportation system. Additional-

ly, in 1983, the legislature gave counties the power to impose up to 4 cents per gallon for local road projects. It is clear that the local road finance system remains primarily a fixed base program.

As inflation eroded the road finance program, an equity issue arose. As growth proceeded, new roads were required while the ability of the system to finance new roads declined. All available options to add revenues imposed the additional burden upon the entire community. The equity issue was that the new roads were required to serve the traffic resulting from new development, while all were being required to pay for those roads. This was a clear violation of the benefit theory of taxation which had been utilized in road construction finance. This violation led to a search for alternative sources and means for road construction finance. The first alternative considered was to require developers to physically construct some or all of the roads needed to serve the new development. The second alternative was what has become known as the "impact fee". An impact fee is a charge required to be paid by new development which would provide the funds needed to build roads where the existing system is incapable of serving the new development. These two alternative systems are not mutually exclusive and can be used together.

Motor fuels taxes are simply not adequate to pay for the roads required in a growing community. Therefore, alternative sources and means are needed. As Lee County grows, these alternatives must be utilized if the transportation needs of a growing Lee County are to be met.

CAPITAL IMPROVEMENTSPriorities - General

The County accepts as its principal responsibility the construction of major facilities for moving traffic such as collector and arterial roads, and major bridges and related facilities. Most local street and minor improvements outside of the cities will hereafter be charged to assessment districts or similar mechanisms including developer provision. Beyond this basic policy, the following criteria, set forth in the order of their importance, shall guide capital investment in the facilities required criteria for improving the traffic circulation on the arterial and collector road system of the County. These priorities are set forth with full awareness that the overriding obligation or commitment of public resources should be to the maintenance of existing facilities. Otherwise, the priorities are:

- 1) Priority in the expenditure of limited public roadway funds should be given to the construction, maintenance or reconstruction of roadways needed to serve existing developments.
- 2) Ensure that streets currently operating at Level of Service "D" or below on an annual average daily basis and projected to have additional traffic shall be improved consistent with the Traffic Circulation Network Map before improvements are made to new streets or those operating at Level of Service "C" or better.

- 3) Give priority to construction of roadway improvements to serve future development for those areas within the Urban Service Area and accessible to required urban services as defined in the Land Use Element.

Costs

Each increment of population growth adds to the traffic on Lee County roads. The additional 280,000 individuals in 2005 will constitute approximately 119,000 households. Table 3 sets forth a general estimate of the cost of providing new roads for population growth over the next twenty years consistent with the Traffic Circulation Network map.

Making precise estimates of the costs of additional roadways over the long term (20 years) is not realistic due to uncertainties over location of demand and scheduling of improvements. They are also highly sensitive to technical and social issues arising from chosen alignments and environmental factors. The total estimated cost of constructing the additional roadways, exclusive of rights-of-way is approximately \$477 million (current dollars). Right-of-way costs would be approximately \$75 million. These estimates should be treated as very preliminary and subject to change upon detailed engineering and appraisal study.

Funding

The funding sources to be utilized in financing public road and bridge improvements are structured to enable growth to generate the necessary revenue for serving that growth. The current road finance system, if continued unchanged, would generate only

\$82 million. This means that almost \$395 million will have to be derived from new revenue sources or increased revenue from existing sources. These strategies include increasing the local option motor fuels tax, increasing property taxes and ad valorem road and bridge tax, mandatory provision of off-site road improvements by development, and road impact fees. All of these potential sources, and more, should be scrutinized and adopted where feasible. The expected sources of funds for road and bridge improvements over the next twenty years include:

- 1) State motor fuel taxes and local option motor fuel taxes;
- 2) Road and Bridge Fund (based on ad valorem taxes);
- 3) User charges or tolls;
- 4) Impact fees on all new development;
- 5) Special assessment of benefitted properties;
- 6) Mandatory developer provision of on- & off-site improvements; and
- 7) General revenues, as available.

Priorities - Specific

During the first five years of this plan, the County has identified a number of projects providing for improvements in the traffic circulation infrastructure. The detailed priority of each item is illustrated by the order in which construction is begun. These are set forth in Table 4.

TABLE 3
ROADWAY COST ESTIMATES (\$1,000)
1985 - 2005⁽¹⁾

<u>ROADWAYS</u>	<u>CONSTRUCTION COSTS</u>	<u>ROW COSTS</u>	<u>TOTAL COSTS</u>
<u>State Roads</u>			
Roadways	154,202	27,045	181,247
Bridges	<u>17,017</u>	<u>--(2)</u>	<u>17,017</u>
Total	171,219	27,045	198,264
<u>County Roads</u>			
Roadways	221,143	47,622	268,765
Bridges	<u>84,770</u>	<u>--(2)</u>	<u>84,770</u>
Total	305,913	47,622	353,535
<u>Total</u>			
Roadways	375,345	74,667	450,012
Bridges	<u>101,787</u>	<u>--(2)</u>	<u>101,787</u>
Total	477,132	74,667	551,799

Footnote:

(1) Costs as shown represent 1984 cost estimates for the 20 year Traffic Circulation Network Map of the Proposed Lee County Comprehensive Plan (year 2005). As such they are estimates only and were based on generalized area wide construction cost factors on a per lane and per mile basis. Right-of-way cost estimates were based on area wide right-of-way cost factors.

The cost estimates for a specific roadway improvement were not based on detailed engineering and design studies and detailed right-of-way surveys including right-of-way encroachment and displacements for that particular improvement. Those detailed engineering and design studies are normally beyond the scope of a 20 year comprehensive plan and are properly addressed in the five year capital improvement program (Transportation Improvement Program). Therefore, the cost estimates identified above will vary by specific improvement from the more detailed cost estimates of the five year capital improvements program.

(2) ROW included in bridge construction cost estimates.

TABLE 4

TRAFFIC CIRCULATION
ROAD & BRIDGE IMPROVEMENTS
1984-5 - 1988-9^{1, 2, 3}

PROJECT	PURPOSE ⁴	YEAR CONSTRUCTION BEGINS (OR CONTINUES)
Bayshore Rd (SR 78 from Pancy Lo Hart)	E & I	84-5
Cape Coral Bridge (second span)	E & I	84-5
Stringfellow Blvd. (widen & resurface)	E & I	(85-6)
Crystal Drive (Fortham to Metro)	NEW	(85-6)
Intersection Imp & Signalization	E & I	(87-8)
Bike Paths	NEW	(86-7)
McGregor @ College (Grade Sep. Intersection)	E & I	(86-7)
Colonial Blvd Ext (I-75 to SR 82)	NEW	(86-7)
Intersection Imp & Signalization	E & I	85-6
College Parkway (6 lane)	E & I	85-6
Metro Parkway (4 lane segment-Ranson to Daniels)	E & I	86-7
Midpoint Bridge including improvements to approaches, Del Prado to I-75	E & I	86-7
LeLuner Creek Bridge (E Lilly Street)	NEW	(88-9)
Intersection Imp & Signalization	NEW	(87-8)
Bonita Beach Rd (Vanderhill Rd to I-75)	E & I	(88-9)
Burnt Store Rd. Ext (SR 78 to Miracle Parkway)	NEW	(88-9)
Daniels Rd (4 lane from Bell Tower Rd to I-75)	E & I	(88-9)
Daniels Rd (from SWFRAP Connector to SR 82)	NEW	(88-9)
Cypress Lake Dr (4 lane from McGregor to US 41)	E & I	(88-9)
Intersection Imp & Signalization	E & I	87-8
Bass Rd (from Cypress Lake Dr to Gladobus Dr)	NEW	88-9
Six Mile Parkway (4 lane from 10 Mile Canal to Daniels Road)	E & I	88-9
Access Rd. (2 lanes from Brantly Rd to Park Meadow Drive)	NEW	88-9
Trailwinds Dr Ext (10 Mile Canal to Ranchette Rd)	NEW	88-9
Intersection Imp & Signalization	E & I	88-9

¹ Table does not include \$1 million for unspecified right-of-way acquisition

² Table does not detail replacement of 4 minor bridges in 1984-5 and 1 minor bridge in 1985-6, total cost of \$3,554,800

³ Table does not detail seven (7) special assessment local road improvements totaling \$5.2 million.

⁴ E & I = Expansion and improvement of existing facility; NEW = new facility

SOURCE: Capital Improvement Program 1984-5--1988-9, Lee County Board of County Commissioners, no date

TRAFFIC CIRCULATIONGOALS, OBJECTIVES AND POLICIES

GOAL IV: To provide a safe, convenient and economical traffic circulation system consistent with the environmental, economic, social and land use goals expressed in this plan.

Objective IV.A: To develop and maintain an integrated traffic circulation system that will meet existing and future needs, that maximizes public and private investments in the most efficient manner possible, and which is financially feasible to construct and maintain.

Public/Private Investment

Policy IV.A.1: Assure that transportation corridors combine cost effectiveness with minimum service standards. Design roadways and intersections to operate at Level of Service "C" or better on an annual average basis (AADT) and Level of Service "D" or better during the peak season.

Policy IV.A.2: Preserve the through traffic capacity of the expressway, arterial and collector street system by:

- a) Controlling land access.
- b) Providing sufficient distance between land access and expressway interchanges.

- c) Spacing intersections on arterials and collectors for efficient traffic signal operation.

Policy IV.A.3: a) Prohibit on-street parking on arterial and collector streets.

- b) All new development adjacent to arterial or collector roads shall be required to provide parallel access or frontage roads except where demonstrably infeasible, technically or financially.

Policy IV.A.4: Provide sufficient road capacity for access to and from the Southwest Florida Regional Airport. Insure that the future expansion of this facility is serviced by adequate road capacity and parking facilities to accommodate that anticipated growth.

Policy IV.A.5: Develop standards, criteria, and fees to equitably define the developers' obligations and costs associated with the construction and right-of-way dedication of necessary site and off-site improvements.

Policy IV.A.6: Provide that all developments and land use changes have adequate roadway facilities to accommodate anticipated traffic demands.

- a) Insure that proper interface is provided between development and the external road network including turn lanes and signalization.

- b) Insure that the external road network (arterials and collectors) serving a proposed development during and upon completion of the project do not exceed reasonable and safe levels of service. If adequate facilities are not available, the following should be considered:
1. the development should provide the necessary improvement to overcome the deficiency, or
 2. the development should be delayed until the public sector makes the identified improvement, or
 3. the development should be staged to coincide with the staged improvement.

Policy IV.A.7: Encourage the location of high intensity land uses on arterial streets that have or are scheduled to have public transit service.

Policy IV.A.8: Provide off-street parking and loading of sufficient quantity and adequate design for the type and intensity of development, for the mode of access to the development and for its users.

Priority Improvements

Policy IV.A.9: Make efficient use of the existing capacity of the transportation system before investing in new facilities. Emphasize low cost improvements with priority improvements as follows:

- a) At intersections:
- improved signal timing
 - improved signing and marking
 - improved channelization
 - turn prohibitions
 - on-street parking restrictions
- b) Public transit, van pooling, car pooling or other methods of encouraging use of high occupancy vehicles.
- c) Maintenance of existing highway facilities or reconstruction of existing intersections.

Policy IV.A.10:

This Comprehensive Plan establishes the following priorities for improving the existing and future road system of Lee County.

- 1) Priority in the expenditure of limited public roadway funds should be given to the construction, maintenance or reconstruction of roadways needed to serve existing developments.
- 2) Ensure that streets operating at Level of Service "D" or below on an annual average daily basis and projected to have additional traffic shall be improved consistent with the Traffic

Circulation Plan before improvements are made to new streets or those operating at Level of Service "C" or better.

- 3) Give priority to construction of roadway improvements to serve future development for those areas within the Urban Service Area and accessible to required urban services as defined in the Land Use Element.

Rights-of-Way

Policy IV.A.11:

Protect planned rights-of-way from future development by establishing a thoroughfare right-of-way protection map, which identifies future rights-of-way to meet roadway needs in order to ensure countywide continuity of the transportation system.

Policy IV.A.12:

Establish minimum rights-of-way requirements for new roads in developing areas and desirable rights-of-way for improvements in developed areas.

- a) Arterial - 150' ROW
- b) Collector - 100' ROW
- c) Local - 60' ROW (Swale Drainage)
- 50' ROW (Curb and Gutter)

Policy IV.A.13:

Avoid transportation right-of-way alignments that create parcels of land that are too small for any practical use or cannot be developed in a manner consistent with the development of surrounding land uses.

Policy IV.A.14:

Require the dedication of the appropriate share of all necessary rights-of-way (including section and half section line roads) from all developments through development regulations and local ordinances which apply. In particular, land developers shall dedicate and/or construct roadways designated in the Traffic Circulation Plan as described below:

- a) In all instances, right-of-way necessary to implement the Traffic Circulation Plan and Official Trafficways Map shall be dedicated to the County at the time of property development (including half section and section line roads).
- b) In cases where there are missing segments in the traffic circulation system, or new thoroughfares to be constructed, a land developer shall construct and dedicate that portion of the thoroughfare that lies within or abuts the boundary lines of the development.

- c) If for reasons of safety or system continuity, improvement of the thoroughfare is determined to be unfeasible at the time of development, the developer shall provide funds or other security for his share of the cost in lieu of undertaking construction at that time.
- d) The above requirements shall be implemented through appropriate land development regulations which may provide for exemptions and for waiver, modification, or variance where the existing road capacity in the area of the development is adequate to provide for the traffic generated by the development.
- e) The County shall prepare and adopt an "Official Trafficways Map" identifying future rights-of-way.

Funding

Policy IV.A.15:

Assess on a continuing basis and establish, as required, additional funding resources such as impact fees, special taxing districts, revenue bonds, increased millage, and the establishment of a Transportation Toll Authority, in order to provide sufficient revenue to eliminate estimated revenue short falls for plan implementation.

Policy IV.A.16: Establish a fund for the acquisition of missing rights-of-way in developed areas and advance acquisition of right-of-way.

Policy IV.A.17: Establish a traffic impact fee system as an additional funding source to insure that private development pays its fair share of future roadway improvements. Annually update the impact fee system to reflect changing travel characteristics and construction costs.

Policy IV.A.18: Lee County shall make improvements to the road system based on the need for improvement. This may on occasion require that improvements be made to roadways on the State Highway System. In the event this becomes necessary, the County shall work with the State to ensure that it will be eligible for reimbursement when future State funding becomes available.

OBJECTIVE IV.B: To develop a transportation system that is energy-efficient by reducing traffic congestion and incorporating provisions for alternate modes of travel.

Policy IV.B.1: Develop and implement, in conjunction with the Metropolitan Planning Organization, other local governments, and the private sector, an

area-wide transportation system management program designed to ensure the efficient use of existing road space, conserve energy and reduce peak hour vehicle usage in congested areas including but not limited to the following:

- 1) Employer - based variable work hours,
- 2) County government variable work hours,
- 3) County and municipal parking policies controlling the amount, location and use of public facilities,
- 4) Employer - based carpool program.

Policy IV.B.2:

Implement traffic signal progression on controlled access arterial facilities.

Policy IV.B.3:

Encourage the following provisions for all developments.

- a) Bicycle facilities such as bicycle storage areas.
- b) Bus shelter access and bus turn off lanes on adjacent arterials and collectors.
- c) Mass transit information dissemination on the site.

Policy IV.B.4:

Continue to develop a system of walkway/bicycle paths for use by cyclists and pedestrians, emphasizing recreation and reduction

of motor vehicle traffic. In particular, require or provide for the construction of the following:

- a) appropriate walkways/bikeways from residential areas to recreation areas, schools and shopping facilities within the neighborhood.
- b) walkways for access to transit stops.
- c) walkways/bikeways where heavy pedestrian movements may be anticipated between land uses.
- d) pedestrian displays at all new signal installations and signal modifications.

OBJECTIVE IV.C:

To develop and maintain a transportation system that protects community and neighborhood integrity and which preserves critical environmental habitats and significant aesthetic values.

ENVIRONMENT

Policy IV.C.1:

Evaluate, during road corridor planning for undeveloped areas, the suitability of adjacent land for development and direct roadway construction away from environmentally sensitive areas, rural areas not designated for development in other sections of this plan, and areas not adequately served by infrastructure systems.

Policy IV.C.2: Prohibit the development of new roads and the expansion of existing facilities within designated Resource Protection and Transitional Zones, except in instances of overriding public interest or Planned Development District options.

Policy IV.C.3: Establish and implement guidelines to protect and maintain transportation corridors of local and/or state scenic, historic and/or environmental significance. In particular, establish measures for those transportation corridors to:

- a) preserve and protect trees and other significant environmental features,
- b) require that the design and construction of all development activity be executed in a manner consistent with the above,
- c) provide guidelines for making roadway/intersection improvements (i.e., signals, turn lanes) along those corridors while preserving the integrity of those corridors.

Policy IV.C.4 Require the preparation of an environmental impact assessment for all proposed new or improved arterial or collector roads.

Policy IV.C.5: Develop and implement where appropriate the construction of adequate corridors for safe passage of wildlife across new and reconstructed county roads.

Community Impact

Policy IV.C.6: Select alignments of new arterial roads and transportation improvements to minimize costs while:

- a) minimizing the number of businesses and residences displaced.
- b) using major roads to define neighborhoods.
- c) allowing sufficient land area between arterials to enable the formation of new neighborhoods.
- d) distributing traffic loadings among available facilities.

Policy IV.C.7: Discourage the alignment of arterials or expressways which penetrate or divide established residential neighborhoods, except in instances of overriding public interest.

Policy IV.C.8: Discourage through traffic in neighborhoods by accommodating arterial demands. For those neighborhoods where through traffic is a problem, study and implement when warranted

neighborhood traffic control devices to protect residential areas from the harmful impacts of excessive traffic.

Policy IV.C.9: Avoid development access through areas of significantly lower intensity or density development.

Policy IV.C.10: Establish design criteria for landscaping and signs along new transportation corridors and implement a program to landscape and maintain existing median strips.

Safety

Policy IV.C.11: Require where desirable the interconnection of local streets between adjacent developments but in a manner that discourages use by through traffic.

Policy IV.C.12: Require that all new developments adjacent to arterial or collector roads shall provide, where feasible, access roads which run generally parallel to and provide access on the arterial or collector roads at regular intervals.

Policy IV.C.13: Maintain a transportation systems management program to identify high-hazard/accident locations. Engineering studies designed to identify structural and non-structural mea-

sures to mitigate such hazards should be prepared annually and incorporated into the annual Transportation Improvement Program.

Policy IV.C.14:

Eliminate or minimize hazardous conditions in the design of roadways by providing the following:

- 1) Providing adequate storage and weaving areas.
- 2) Prohibiting local access onto free flow traffic lanes.
- 3) Preventing conflicts between roadway and pedestrian or rail traffic.
- 4) Providing adequate capacity for emergency evacuation.

OBJECTIVE IV.D:

Coordinate the Traffic Circulation Element with the other elements of the Lee County Comprehensive Plan, the zoning code and the development standard regulations and develop future transportation facilities in cooperation with other governmental entities and with the highest level of public participation possible.

Policy IV.D.1:

Maintain the Traffic Circulation Element consistent with the urban development and growth management plans and policies contained in other elements of this Comprehensive Plan.

- Policy IV.D.2: Coordinate local transportation planning efforts, and, specifically: a) bring the Long Range Transportation Plan of the MPO into conformance with the land use and growth strategies of this Comprehensive Plan and b) amend the Traffic Circulation Element of the Comprehensive Plan as needed to insure consistency with that Long Range Transportation Plan.
- Policy IV.D.3: Review proposed transportation improvements to determine their contribution to the achievement of the adopted Comprehensive Plan and orderly development of the community.
- Policy IV.D.4: Coordinate land use development with the programming of transportation improvements, by analyzing traffic and road conditions that would be affected by private development.
- a) Impose fees or construction requirements as necessary to obtain improvements required to provide adequate service to the residents of that development.
 - b) Program public transportation improvements in the Transportation Improvement Program as growth occurs and funding is available.

Policy IV.D.5:

Establish a development impact review process to determine in a systematic and comprehensive manner the effect of proposed developments of county impact (but below the Developments of Regional Impact threshold) on the human and natural environment. As part of the development review process, require a detailed traffic impact study to identify traffic generation, other area committed development traffic, capacity of adjacent roadways/intersections, and required improvements to offset the development's impacts.

STANDARDSA. FUNCTIONAL STREET CLASSIFICATION

Roadways serve two functions: mobility and land access. From a design standpoint, these functions are not always compatible. For mobility, high or continued speeds are desirable with variable or low speeds undesirable. For land access, only low speeds are desirable.

A community's roadway system is generally grouped into different classifications for administrative, planning and design purposes. For planning purposes, the main consideration for classifying roads are travel desires of the road user, land access provision and the overall road system continuity.

At the same time, it is also beneficial to distinguish between urban and rural roadways. Urban and rural areas have fundamentally different land density and use characteristics. The magnitude of the number of lanes on streets and highway networks and area travel patterns are correspondingly different. In other sections of this plan, the County has been categorized as urban and rural. The roadway functional classification described herein is independent of those designations.

While there are numerous functional classification systems available, all (including urban and rural) have four basic components.

1. Freeways/Expressways,
2. Arterials,
3. Collectors (Major and Minor), and
4. Local roads

Each is depicted schematically in Exhibit 1. The degree to which each serves the traffic mobility and land access objectives as described previously is shown in Exhibit 2.

For purposes of this Plan, collectors have been subdivided into "major" and "minor" collectors. While each is primarily intended to move local traffic from local streets to the nearest arterial, major collectors also provide service to through movements. Each of the four functional classifications is briefly described below.

Freeway/Expressway:

This system includes highways and parkways and has the sole purpose of carrying through traffic. It will not provide direct land/property access. Freeway access is fully controlled with carefully spaced high speed exit/entrance ramps and grade separation with intersecting roadways.

The freeway/expressway system generally exhibits the following additional characteristics.

1. Inter-city, inter-county and inter-regional service.
2. Linkage only to the arterial street system.
3. Wide medians, 4, 6 or 8 lanes and paved shoulder.
4. Trip length ususally greater than 3 miles.
5. Speed limits generally 55 m.p.h.

Arterial

The arterial street system is primarily intended to carry large volumes of through traffic connecting major activity centers to other major traffic generators. Access to abutting properties must be limited to carefully controlled points.

The arterial system generally exhibits the following additional characteristics:

1. Inter-community and intra-country service.
2. Linkage to the collector street system and freeway system.
3. Typically 4 to 6 lanes divided with turn lanes.
4. Prohibited parking.
5. Moderate trip length, generally 1 to 3 miles.
6. Speed limits 35 to 50 m.p.h.
7. Signalized intersections with other arterials and collectors generally 1/4 to 1/2 mile separation.
8. Generally aligned along 1/2 section and section lines.

Major Collector

Major collector streets have the primary purpose of collecting traffic from intersecting local streets and distributing this volume to the nearest arterial. The secondary purpose is to carry moderate volumes of through traffic. Access to abutting land uses is a secondary function which with proper land planning can be limited.

The major collector street system generally exhibits the following additional characteristics:

1. Intra-community and inter-neighborhood service including access to activity centers and neighborhoods.
2. Linkages to the arterial, minor collector and local street systems.

3. Four-lane divided sections (in certain rural setting the section could be two-lane undivided).
4. Prohibited parking.
5. Principal trip length one mile.
6. Speed limit 30 to 40 m.p.h.

Minor Collector

Minor collector streets have the primary purpose of collecting traffic from intersecting local streets and distributing this volume to the nearest major collector and/or arterial. As such it provides the linkage from neighborhoods (i.e., local streets) to the arterial system and provides intra-neighborhood access. Continuity of the minor collector beyond the nearest major collector and/or arterial is not desirable.

Access abutting land uses is a secondary function which with proper land planning can be limited.

The minor collector street system generally exhibits the following additional characteristics:

1. Intra-neighborhood service including access to neighborhood activity centers.
2. Linkages to the arterial, major collector and local street system.
3. Generally two and three lane section.

4. Prohibited parking.
5. Principal trip length less than one mile.
6. Speed limit 25 to 35 m.p.h.

Local:

The primary function of the local street system is to serve adjacent properties. As such it provides the linkage from adjacent land uses to the collector street system. Thru volume service is in conflict with these functions and must be prohibited in the design of the street network.

The local street system generally exhibits the following additional characteristics.

1. Internal neighborhood service.
2. Linkage from and between individual uses and to the collector street system.
3. Typically two lanes.
4. For aesthetics and pedestrian safety, it is desirable to prohibit all on-street parking. Parking could be permitted mid block if it does not interfere with roadway operations. Under those conditions, it must be prohibited at intersections in order to obtain proper sight distance triangles.
5. Principal trip length less than 1/2 mile.

6. No access control except for driveway location and design criteria.
7. Speed limit generally 25 m.p.h. or less.
8. Typically one block spacing.

EXHIBIT 1

ILLUSTRATION OF FUNCTIONAL CLASSIFICATION

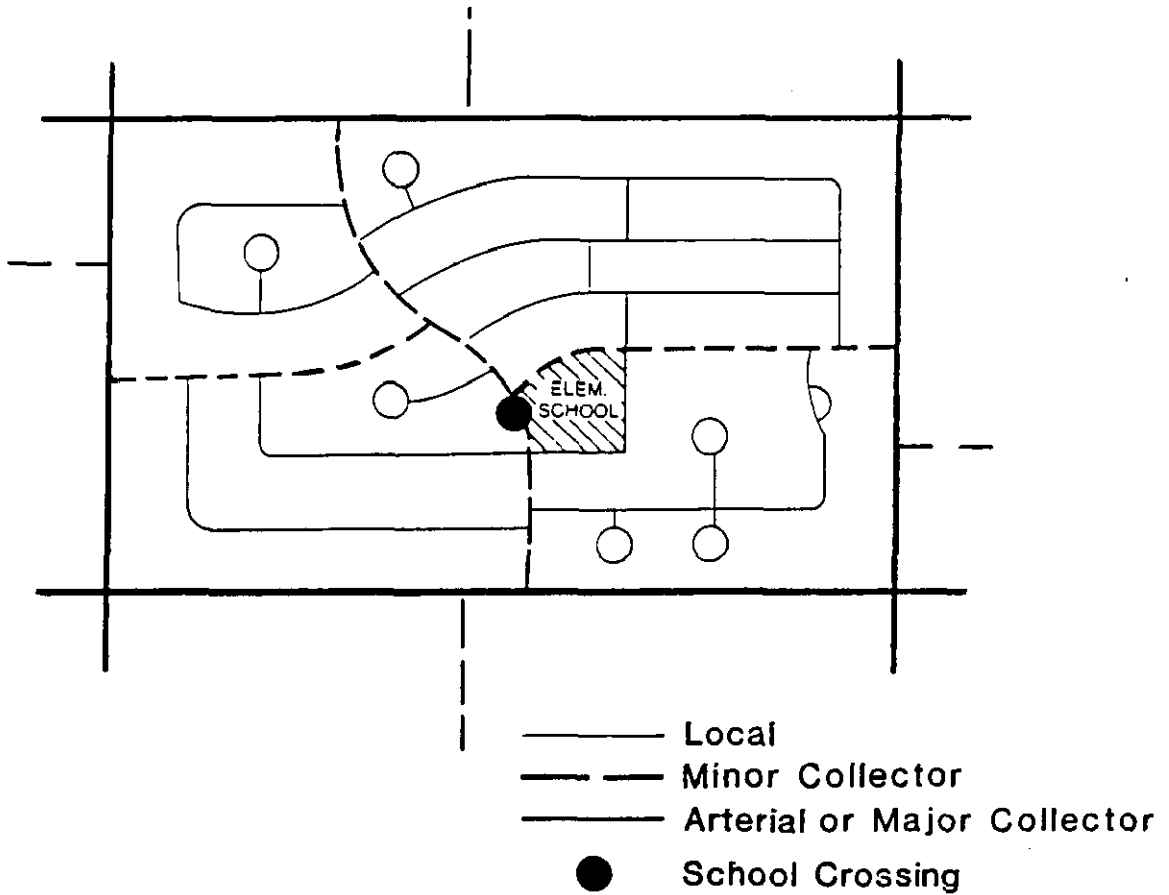
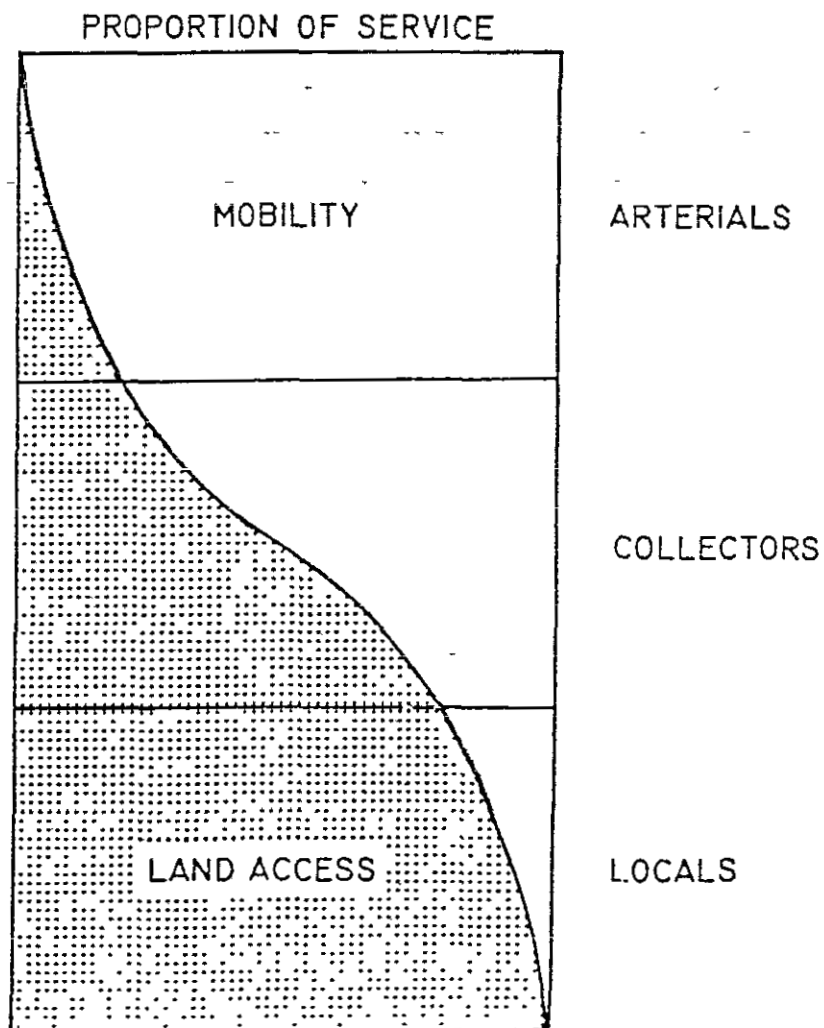


EXHIBIT 2

RELATIONSHIP OF FUNCTIONALLY CLASSIFIED SYSTEMS IN SERVING
TRAFFIC MOBILITY AND LAND ACCESS



SOURCE: U.S. Department of Transportation,
Highway Functional Classification.

CONSISTENCY

No part of a Comprehensive Plan stands alone. Comprehensive plans seek to bring unity to a community's efforts to address the entire spectrum of public needs. The relationship between land use planning and traffic circulation planning is particularly important. Land use patterns impose traffic burdens upon transportation networks; the age, condition, and capacity of roads helps to shape and determine the land use patterns of the areas they serve.

Recent decades have wrought many changes in the relationship between land development patterns and transportation networks. In the 1950s and 1960s, American cities forecast land uses in great detail, designing a road network adequate to carry the trips generated by the projected land uses. Unfortunately, the land use controls of those decades proved unreliable. As a result, the level and pattern of development differed substantially from the one which had been forecast. When development exceeded predictions, it resulted in an endless cycle of road building, followed by congestion, followed by road expansion. On the other hand, if development fell far short of predictions, communities found themselves building, financing, and maintaining underutilized roads.

The 1979 Lee County Comprehensive Plan took a different approach. The Plan recognized that road building is a predictable process because of the heavy financial and policy involvement of federal and state governments; while land development is far more volatile, keyed to the local private development market.

Zoning was used largely to avoid land use frictions between adjoining properties more than as a county-wide growth management tool. Consequently, the 1979 plan featured a Year 2000 road network map, which is shown in this element strictly for reference purposes, but no land use map. The land use element of that plan consisted solely of verbal goals, policies, objectives, strategies, and standards which were intended to be flexible guides useful on an ad hoc basis for evaluating the merits of each proposed development. This approach had the clear advantage of recognizing the realities of land use and traffic circulation planning and implementation as they existed at that time. This realism was bought at the price of ineffectuality and poor coordination. The plan gave a clear picture of where roads were to go, but gave no picture of the land uses which those roads would serve.

The 1984 Comprehensive Plan reverses the methodology of its 1979 predecessor by prescribing a pattern for future land development with mandatory maximum (and in some cases, minimum) densities and intensities which give a clear image of future traffic volumes. This procedure offers a flexible structure in which rights-of-way may be acquired and improvements to the existing network programmed, thereby avoiding the familiar pattern of building -- congestion -- expansion.

The Traffic Circulation Element must also agree with provisions of the Conservation and Coastal Zone Element as it relates to the protection of soil and water, wildlife, and environmentally sensitive areas. This element must be compatible with

the Intergovernmental Coordination Element in matters involving cooperation with other levels of government. Finally, it must be compatible with the Ports, Aviation, Rail, and Mass Transit Elements in order to provide efficient access to other transportation modes, avoiding duplication of services whenever possible.

(177A-B)

V. MASS TRANSIT ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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INTRODUCTION

A. Purpose

The traditional reliance upon the automobile for transportation has resulted in numerous problems manifested at the local and national level. Extensive use of automobiles results in enormous commitments of capital for roads, inefficient expenditure of energy, environmental degradation and traffic congestion. A workable mass transit system coordinated with the Lee County Land Use Plan can significantly minimize those transportation related problems.

Public transit is a critical component of a successful urban service delivery system. Dispersed low density patterns of development in Lee County make it financially impossible to provide adequate public transit service to all residents. The Urban Service Area concept in the Land Use Element will greatly enhance the ability of Lee County to improve transit service through a more efficient use of resources.

B. EXISTING CONDITIONS

Equipment and Routes

Lee County (Lee Tran) currently maintains a fleet of 24 buses of which 16 are actively servicing 6 scheduled routes. The County's public transit system provides service from residential areas to major employment and commercial centers with the greatest emphasis on the Downtown Ft. Myers Business District and the Edison Mall. The existing Perimeter and Commuter routes represent 378.3 miles of fixed route service. (See Illustration 5).

Existing headways range from 30 minute intervals (Green Route) between the Courthouse and the Michigan Links Projects to 60 minutes on all other routes except for the Red/Brown route which has a 12 minute headway. There are five Commuter Routes starting at 6:45 A.M. to 7:50 A.M. The Commuters include North Fort Myers, Fort Myers Beach, East Fort Myers and North and South Cape Coral.

Fares

User costs range from \$1.50 and \$.75 for Adults to \$.75 and \$.35 for Handicapped/Senior Citizens. Lee Tran offers reduced fares to students and commuters. Students may purchase booklets of 10 passes for \$5.00 and commuters may buy monthly passes for \$18.00 and \$30.00. The variation in fares is subject to the distance traveled on specific routes.

Ridership

The ridership on Lee Tran is younger than the general population of Lee County, with an average passenger age less than 37 years. Only 24% of the riders are elderly (age 60 and older) versus 32% of the total County population, and 52% of the riders are ages 18 to 59 versus 46% of the County population. Over 67% of the riders are female versus 52% of the total County population. A large proportion of bus riders are minorities: 31% Black and 4% Hispanic versus 9% and 0.2%, respectively, of the total County population.

Bus riders in Lee County tend to be from low income households; 43% have annual family incomes of less than \$7,000.00 and 68% have incomes of less than \$12,000.00. Over 75% of the riders are "captive", i.e., they have no auto available or do not drive.

90% of all Lee Tran trips are home-based (one end of trip at home) and two-thirds are for work or shopping. Almost 19% of the riders transfer at least once. Frequent origin or destination points include the Lee County Courthouse and other places in Downtown Fort Myers, Edison Mall, the Michigan Link Housing Project, the residential area South of Anderson Avenue, and Southern Cape Coral.

TABLE 1

 PROFILE OF LEE TRAN CHOICE AND CAPTIVE RIDERS

<u>Characteristic</u>	<u>Choice Rider</u>	<u>Captive Rider</u>
Age	25% elderly, 16% youth	23% elderly, 33% youth
Sex	64% female	60% female
Race	24% minority	38% minority
Income	23% less than \$7,000	47% less than \$7,000
Autos per		
Household	1.62 (average)	0.9 (average)

Evaluation of Existing Systems

An evaluation of the County's existing transit system was conducted by Kimley-Horn and Associates and is documented in the Lee County Five Year Transit Development Program Technical Report, November, 1981. Their analysis indicates that the transit system is adequate in the Urban Areas but recommends route deviation and feeder routes.

While the system's overall accessibility and coverage is adequate, the comfort and convenience to passengers could be improved primarily through reduction in headway time. Further, existing routes tend to discourage transfers and contribute to overall low ridership. In addition, variable headways discourage the use of the system by passengers who are employed and must arrive at their destination at a specific time. Improvements in the system should encourage greater utilization of the Lee Tran System over the next several years.

C. FUTURE MASS TRANSIT

Over the next 25 years, Lee County is expecting an increase of over 200,000 persons to its population. The population will require access to mass transit.

The rising costs of energy have been one of the dominant factors of the recent past. All present indications appear to show that energy costs will remain an issue for the foreseeable future. Mass transit

systems are one of the most efficient means of conserving scarce energy. As energy costs continue to increase, mass transit will become an even more important component of a viable community.

One of the most inefficient systems currently utilized is an automobile occupied by a single individual. Frequently the lone individual in an automobile is utilizing this means of transit because there are no efficient alternatives. As the Lee County population increases, especially within the Urban Service Areas and Urban Communities, mass transit will become more feasible both for the County which will supply it and the public which will utilize it.

As mass transit becomes increasingly utilized, Lee County can expect to incur increasing capital costs for facilities and equipment. However, Lee County can also expect to attain savings in road capital costs due to the more efficient utilization of the transportation system.

Future Needs

Population, growth, energy shortages, and the creation of more compact residential centers under the Urban Service concept will increase the demand for mass transit. The total increase is uncertain, but a "minimum requirements" estimate can be generated by comparing expected population growth with current population figures and existing levels of transit service. Assum-

ing that the existing mass transit system represents a minimum acceptable level of service, expansion of the Lee Tran System by 50% may be expected by the year 2005 to accommodate an additional 1% of the urban population. This figure was derived by assuming a 113% increase in the urban population by the year 2005 and further calculating, that between 1% and 2% of this increase would become Lee Tran Riders. By maximizing the capacity of our current fleet and increasing the system by nine additional buses (2 spares) Lee Tran will be capable of accommodating the increase in urban transportation needs in Lee County.

Lee County currently plans mass transit service based upon the following methodology. Areas within a five-minute walk of a transit stop (about .25 mile) are defined as being located within "primary service areas." People living within such areas are considered to be potential passengers. Beyond the five-minute radius, however, the percentage of persons opting for transit drops rapidly due simply to their unwillingness to walk. Thus, ridership on a specific route is dependent upon the population within its primary service area; and without sufficient population density, a route will not be economically viable. Areas of low density single-family residential land use generally do not have sufficient ridership potential to justify mass

transit. Hence, present development patterns of urban sprawl decrease the efficiency of the Lee Tran System.

Projection of future mass transit routes for the Year 2005 is necessarily tentative due to the time horizon and variables involved. However, future expansion can be correlated to the Land Use Map, assuming that the correlation between high density development and transit users remains valid and present day trip attractors remain constant. Future routes should be based on a consideration of the urban service area concept and efficient service.

Under a general route plan for the Year 2005, service to growth areas in East and South Fort Myers, West and North Cape Coral, Lehigh Acres, and Bonita Springs would be enhanced by additional buses. Lehigh Acres and Bonita Springs would have daily service to the Edison Mall with one hour headways. East Fort Myers route service would expand farther East connecting with Lehigh Acres with potential in this area to reduce headways to half-hour service. If a midpoint bridge is constructed, Lee Tran would locate a major transfer at the Coralwood Mall in Cape Coral. Cape Coral's service would then be greatly expanded within the area using half-hour headways to connect to a feeder route over the bridge into Fort Myers, with Coralwood Mall as the transfer point for this service. In addition, service on existing routes would be greatly improved by a reduction in headway time.

In order to achieve the forecasted level of service for the Year 2005, certain capital and operational needs must be proportionately increased to offset the added operational costs. Basic equipment and personnel projections along with their appropriate costs are listed below.

Table 2

Additional Capital & Equipment for Year 2005

- 1) 9 Transit Coaches - (30'-35') Load Capacity 31-44 passengers, \$165,000.00 each - \$1,485,000.00
- 2) 1 Transfer Facility - Coralwood Mall - \$50,000.00.
- 3) 200 Bus Stop Signs - \$8,000.00
- 4) 30 Mini Shelters - \$210,000.00.
- 5) 3 Administrative Vehicles - \$60,000.00.
- 6) 1 Service Truck - \$20,000.00

Table 3

Additional Operations - Personnel for Year 2005

- 1) Operations - 12 Transit Drivers - \$240,000.00.
- 2) Maintenance - 2 Mechanics - \$40,000.00.
- 3) Operations - 2 Information Service Clerks - (Coralwood Mall and Edison Mall) - \$30,000.00.

Cost/Benefit of Mass Transit

The level of subsidization for mass transit within Lee County is quite high. Lee Tran ridership figures show that 1% of the total population of the county actually use the system. As a result, farebox revenues

comprise only 32.9% of operating expenses. A study done by Lee Tran comparing these figures with twenty (20) other Florida mass transit systems show them to be average.

The high cost of operating a mass transit system is evident. Direct benefits in the form of actual ridership seem low. However, there are ancillary benefits to the general public which must be calculated in any cost/benefit analysis concerning mass transit. The benefits are listed below:

Benefits of Mass Transit to the Public

1. Reduce pollution.
2. Roads less congested at peak hours - seasonal
3. Provides transportation for people with no available transportation.
4. Provides alternate transportation mode that in most cases is overall less expensive than automobile operation.
5. Reduces need for fuel - conserves natural resources.
6. Reduces requirements for public parking.

Mass Transit Funding Sources and Programs

Lee Tran, like most transit authorities, has relied upon direct government subsidies and operating revenues for its traditional funding sources. The recent shift in emphasis from Federal financial support

of public transportation to greater local self-sufficiency has created an enormous challenge, given increased demand for service. Ridership levels of Lee Tran for the Year 2005 have been forecasted to increase by at least 50% based on population projections. Lee County's present and potential funding sources listed below must increase correspondingly in order to meet the challenge. In addition, alternative source programs, also listed below, may be initiated to satisfy increased demand.

Transit Impact Fees - are defined as fees imposed on developers to mitigate the impact of their projects on transit service. Transit impact fees have the potential to become a significant new funding source for mass transit.

Employer Pass Programs - Transit agencies can raise revenues by attracting new ridership through employer pass programs. Firms participating in these programs distribute monthly transit passes through the work place to their employees, usually at a discounted price. Experience indicates that lower pass prices provide strong incentives for employees to ride the transit system. The subsidies are offset by the revenues generated from increased ridership.

Vanpooling - is a form of ridesharing in which a group of 8 to 15 people who live close to each

other ride together in a passenger van to a common work locale. The vanpool drivers usually lease the vehicles from the transit agency. Whether the vans are leased or owned, the riders' monthly fees are calculated to cover the costs of owning and operating the vehicles. Therefore, the costs to a transit agency are primarily administrative. Vanpooling programs are most successful in areas where long distance commuting is common, and could be used in such outlying urban areas as Lehigh Acres and Bonita Springs.

Other Operating Revenues - come from fares, supplemented by revenues from advertising, bus charters, contract services, and other miscellaneous sources. Operating revenues amount to about one-third of total operating expenses of the nation's transit agencies. Assuming no substantial changes in fare levels or services, farebox revenues will depend mainly on patronage levels. Projections of ridership must take into account long term trends (annual losses or gains) and economic conditions, which may affect work and shopping trips.

Fare changes generally raise more difficult problems. The traditional rule has been that a fare increase of $X\%$ will reduce ridership by $X/3\%$, corresponding to a demand elasticity of $-.333$.

The common elasticities are in the range of $-.3$ to $-.7$. With an elasticity of $-.3$, a 10% increase in fares would reduce traffic by only 3% and would increase revenues by 6.3%. With an elasticity of $-.7$, a 10% fare increase would result in a 7% decline in traffic and only a 2.3% increase in revenues. Lee Tran will strive to maintain fare levels which will at a minimum offset 40% of operating costs.

Direct Governmental Subsidies - Currently, eighty percent (80%) of capital costs needed for expansion of the Lee Trans System are provided by the Federal Government. Lee Tran receives these funds under Sections 5, 7, 8, 9, and 18 of the Urban Mass Transit Acts (UMTA). Increased funding from UMTA beyond present levels is unpredictable. However, a minimum level of \$450,000 has been established for long range budget forecasts.

Various State and local subsidy sources are potentially available for Lee Tran funding. The 4th cent of the State gas tax could be a major funding source in the future. Funds generated from the 4th cent gas tax are earmarked for transportation related projects and could be allocated directly to mass transit by a 4 to 1 County Commission vote. More traditional funding sources include County general revenue, additional sales

tax revenues and/or general obligation bond financing.

Minimum levels of funding must be maintained to provide Federal match money. However, further support from local and State sources will be needed if the trend toward decreasing Federal subsidies is continued. Like all mass transit authorities, the level of service of Lee Tran will be related to the ultimate level of commitment by the Community.

D. CAPITAL IMPROVEMENTS

Priorities - General

Specific capital improvements and equipment for mass transit operations will be generally prioritized according to two basic criteria. The first is the degree to which any improvement will provide or improve transit services in and to the central cities portion of the Urban Services Areas (Fort Myers, Cape Coral, North Fort Myers, East and South Fort Myers), while connecting it to outlying employment and commercial areas (for example the Southwest Florida Regional Airport area and interstate highway interchange areas). Second, consideration should be given to those capital investments necessary to provide and improve mass transit services to the outlying urban community areas.

Costs

In the long term, a 70% increase in service level is proposed for year 2005. The capital improvements and equipment

necessary include nine additional busses, a major transfer facility in the City of Cape Coral, several additional administrative and service vehicles, and signs and mini-shelters (the latter group not generally provided for in capital budgets due to relatively low unit prices). This package is expected to cost \$2.2 million in 1984 dollars (See Table 2). This does not include the costs of replacement of worn-out vehicles which will be considerable over the twenty year period. Additional routes are contemplated.

Funding

The following funding sources either are or could be used to support existing and increased levels of mass transit in the Lee Tran service areas.

Included are:

- 1) Federal subsidies from UMTA, if available (requires match of 1 to 4);
- 2) State and local subsidies including the 4th cent gas tax, sales tax, general revenues and bonds;
- 3) User charges or fares, advertising and charters etc.;
- 4) Transit impact fees;
- 5) Vendor financing (reduced finance costs provided by or arranged by equipment manufacturers).

Priorities - Specific

Within the first five years of this plan the programmed capital equipment requirements include twenty four (24) busses in fiscal year 1988-9 and one van in 1985-6. Most of the busses (13) will be replacement of worn out rolling stock and eleven

will provide for expanded services. Replacement and additional new equipment are subject to availability of UMTA grants.

E. GOALS, OBJECTIVES AND POLICIES

MASS TRANSIT

GOAL V: To provide an accessible transit service to all residents of the concentrated population centers within the Urban Services Areas.

Objective V.A.1: Maximize public transit as a viable transportation mode and an alternative to automobile use and maintain and develop transit services which offer reliable, accessible, safe, convenient, and affordable travel for the transit-dependent.

Objective V.A.2: Strive to establish operating revenues (Farebox revenues) at a minimum of 40 percent of operating costs.

Policy V.A.1: Encourage the following provisions for all developments of County and/or Regional Impact.

- a) Bicycle facilities such as bicycle storage areas
- b) Bus shelter access and bus turn off lanes on adjacent arterials and collectors
- c) Mass transit information dissemination on site. (See Traffic Circulation Element).

Policy V.A.2:

Continue to develop a system of walkway/bicycle paths for use by cyclists and pedestrians, emphasizing recreation and reduction of motor vehicle traffic. In particular, provide for the construction of the following:

- a) walkways/bikeways from residential areas to recreation areas, schools and shopping facilities within the neighborhood.
- b) walkways for access to transit stops
- c) walkways/bikeways where heavy pedestrian movements may be anticipated between land uses
- d) pedestrian displays at all new signal installations and signal modifications
(See Traffic Circulation Element)

Policy V.A.3:

Systematically improve the public transit system to:

- a) emphasize efficient routing
- b) reduce traffic congestion in developed areas
- c) maintain or increase the public transit's proportion of all trips
- d) serve the elderly, handicapped and people dependent on public transit.

Policy V.A.4:

Confine public transit service within the Urban Service Area as defined and

delineated in other elements of this Comprehensive Plan. Emphasize service to activity centers and major trip generators, such as employment, shopping, medical, education recreation centers and the Southwest Florida Regional Airport.

Policy V.A.5:

Establish a minimum level of public transit service to accommodate anticipated passenger volumes including but not limited to the following:

- a) Hours of operation including night service.
- b) Maximum headways during peak hours and off peak hours.
- c) Realistic and achievable route schedules.
- d) Route spacing criteria to achieve a "grid like" system for local services.
- e) Express bus service location criteria.
- f) Preventive maintenance measures including a systemwide average number of vehicle miles per vehicle per year and a reasonable ratio of maintenance personnel to revenue-generating vehicles.

- g) Maximum dead heading miles as a percent of total revenue miles.
- h) Minimum number of spare vehicles.

Policy V.A.6:

Monitor existing service performance to identify and implement changes in the public transit system.

- a) Establish minimum ridership and revenue service levels including revenues to costs. Monitor and evaluate route performance for the reallocation of transit service.
- b) Designate those routes whose fiscal performance is less than 1/2 of the average "revenue to cost" ratio for all operations as provisional subject to investigation and change.

Policy V.A.7.:

Establish a dedicated source of revenue for public transit operations, and additionally, explore alternative public transit operations funding sources.

Policy V.A.8:

Monitor transit fare structures to insure that rates are affordable for those members of the community who are transit-dependent.

Policy V.A.9:

Maintain a public information system whereby accurate and current route schedules are available.

Policy V.A.10:

Upon adoption of the Comprehensive Plan, and in particular, the Traffic Circulation and Mass Transit elements, amend the existing Transit Development Program (T.D.P.) to insure its consistency with the Comprehensive Plan.

Policy V.A.11:

Lee Tran shall investigate the Park and Ride concept in relation to their system planning and, when feasible, acquire appropriate sites to insure future implementation.

Policy V.A.12:

Develop a formula based upon the urban requirements of the land use map to meet the needs of expanded ridership. As the needs of the users increase, transportation funding should be available to enhance existing transit connections.

VI. PORTS, AVIATION AND RELATED
FACILITIES ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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VI. PORTS, AVIATION AND RELATED FACILITIES ELEMENT

INTRODUCTION

A. Purpose

Sections 163.3177(6)(j) and (b), Florida Statutes, require the inclusion of plans for ports, aviation, and related facilities coordinated with the general circulation and transportation element in the Comprehensive Plan for those units of local government having a population greater than 50,000. In compliance with the mandates of Chapter 163, this element discusses the existing and potential plans for railways, aviation facilities, ports and related facilities and traffic circulation. The plans are to meet the projected needs of the area for goods and people movement during the next twenty (20) years.

Railways, aviation, ports and marina facilities can provide a vital link in the movement of people and goods into and from the County as does highway oriented transportation, such as automobiles and trucks. The County's demand for railways, aviation, and related facilities is dependent upon the area's need for transporting goods to locations where they can be used, and the need for persons to travel to other locations. Selection of the type of facility to be used in such commerce movement is dependent upon a variety of factors such as cost, length of travel time, type, size, and weight of the commodity. The commerce movement market

is extremely competitive exhibiting fluctuations as competing commerce modes (railways, trucking, airlines, ports) alter their rate structures. Therefore, planning for the development or expansion of a commerce movement facility must be based on demonstrated demand and some assurance of a competitive and profitable user cost. It is anticipated that the future provision of additional ports, aviation, and related facilities will primarily be the responsibility of the private sector.

Railways, aviation, ports, and related facilities cannot be evaluated on an individual basis for they are integral components in the overall Lee County Transportation System which is designed to facilitate the effective and efficient movement of goods into and from the County. The evaluation of existing or proposed plans for railways, aviation, and related facilities must be closely coordinated with the area's traffic circulation and transportation system to ensure economic and environmental compatibility. (See Illustration 6).

B. Existing Conditions

1. Lee County Commerce Movement

Commerce movement into and from Lee County ranges from the movement of persons to the movement of a variety of goods and services which include domestic as well as international origins and destinations.

A February-March 1984 Metropolitan Fort Myers Chamber of Commerce survey identified some of the different types of goods which are imported and exported by Lee County. The survey identified a variety of imports such as flowers, beer, films, gifts, shells, furniture, electronics, and steel wires. These imports are generally truck freighted into Lee County from Port Everglades, Port of Miami or the Port of Tampa. The survey also identified some of Lee County exports such as: flowers, electronics, outboard motors, signal instruments, packaging, plants, nylon polymers, and machines.

Aviation Commerce Movement

A substantial source of commerce movement is reflected in the amount of emplanements and deplanements through the Lee County aviation facilities. During 1983, there were 638,296 emplanements and 620,008 deplanements for a total of 1,258,304 passengers. The total figure was up 7.67 percent from the 1982 emplanement and deplanement total of 1,168,475 passengers.

Airmail and air freight represent a substantial commerce movement. During the first quarter of Fiscal Year

83-84, there were 52,733 pounds flown in and 184,359 pounds flown out of the Southwest Florida Regional Airport. Air freight which was flown in during the same quarter equaled 427,782 pounds while air freight which was flown out amounted to 419,746 pounds.

Railway Commerce Movement

Railways play an important part in the Lee County Commerce Movement Market. Although specific quantity data are not available, the type of products shipped into and from Lee County is available. The type of products transported out of the County include citrus, limestone, dolomite, coquina, softwood, sand and gravel. Products transported into the County include newsprint (Georgia Pacific), beer, canned food, LP gas, fertilizer products, sand stone, and gravel and aggregate lumber (wallboard, plywood & related materials).

Port Related Commerce Movement

Petroleum products are shipped into Lee County via the one active petroleum port terminal site in Lee County which is located on Gasparilla Island. However, due to lack of adequate vehicular access to the port site, the site remains a transshipment point for the subsequent transfer of petroleum to shallow draft barges. These barges travel through the Intra-coastal waterway via the Pine Island Aquatic Preserve, to the Florida Power & Light upriver barge port and generating facility site located at the confluence of the Caloosahatchee and Orange Rivers.

Truck Freight Commerce Movement

Fuel used for aviation purposes is stored at the Southwest Florida Regional Airport Fuel Farm in three (3) tanks containing 10,000 barrels each. The fuel is transported in by truck tankers from Port Everglades, Port of Tampa and the Port of Jacksonville.

Intra-state trucking was deregulated as of June 30, 1980. Therefore, determining specific movements is difficult. However, there are approximately twenty major trucking motor freight carriers servicing the Lee County area.

In addition, substantial amounts of commerce are moved via vehicles such as United Parcel Service, Purolator, Federal Express, Greyhound Bus Line and Trailways Bus Lines.

Fishery Product Commerce Movement

Fishery products contribute substantially to Lee County Commerce Movement. For example, 1982 total seafood landings, as reported by the National Marine Fisheries Service (NMFS) reflect that 14,249,894 pounds of fishery products were landed. These landing statistics (from wholesale transaction records) are not completely indicative of all the fishing activities that take place in local waters. For instance, some products caught locally are landed in other counties, and also some products are landed in Lee County and sold to a wholesaler in another county, and thus not recorded for Lee County. This latter situation occurs

frequently in relation to the Blue Crab fishery. The statistics are, however, the best information available. A breakdown of that total is: 10,383,282 pounds of finfish and 3,866,612 pounds of shellfish (includes shrimp, crabs, oysters, squid, etc.) for 1982. A little over 5 million pounds of mullet were landed, making for about half of the finfish total.

Several varieties of Tuna are landed in Lee County. The most valuable is the Bluefin Tuna. This Tuna is sought by export markets, mainly in the Orient, and commands a high price. These are large fish, averaging about 500 pounds. The other species of Tuna caught in this area are Yellowfin, Big Eye, and Blackfin. The 1983 total landings of all Tuna in Lee County were 109,688 pounds.

2. Railway Facilities

Rail facilities in Lee County consist of approximately fifty (50) miles of light (80-85 pounds per yard) rail line linked to the national rail network. The lines are classified in the State Rail Plan as Class I lines operated by the Family Lines System. Lee County's existing rail service travels north through Arcadia and travels south into Collier County where it terminates. Rail service is currently limited to the transportation of goods. The type of goods being shipped from Lee County is generally limited to mining related products.

While information on product movement is limited, the State Rail Plan does indicate the types of products exported by Lee County, including citrus, limestone, dolomite, coquina, softwood, sand and gravel. During 1980, the lines north from Fort Myers carried 4,250 carloads. Substantial increases in this volume are not anticipated in the near future unless the local economy diversifies. It is reported by the Florida Department of Transportation that the railroad bridge over the Caloosahatchee River may be in need of repair or replacement at some point in the future.

There are 23 grade crossings with collector and arterial roads in Lee County. Railroad activity is low, however, ranging between one and three trains per day. Ten of these crossings are protected by gates and bells and another seven by flashing lights only. The remaining street crossings are marked with crossbucks. Rail service to Port Boca Grande on Gasparilla Island was recently abandoned by the Seaboard Coastline Railroad. Lee County opposed this action although it was ultimately approved by the Interstate Commerce Commission.

At this point in time, Lee County has no passenger rail service. The State Rail Plan recommended future consideration be given to a west coast distribution system. Rail passenger services, such as Amtrak would require heavy (100-132 pound per yard) rail line. AMTRAK service currently stops in Tampa.

The State Department of Transportation has recently initiated a Florida High Speed Rail Study. The first report was due February of 1984. The Study will investigate five (5) different route options including: 1) Tampa to Jacksonville; 2) Jacksonville to Pensacola; 3) Jacksonville to Orlando; 4) Tampa to Orlando to Miami; and 5) Tampa to Naples to Miami. The potential High Speed Rail would utilize Interstate Corridors.

It is anticipated that in the near future, Lee County will substantially benefit from investigation into the development and implementation of a rail oriented intra-county people mover.

3. Aviation Facilities

In May of 1983 the Southwest Florida Regional Airport opened and Lee County gained its second aviation facility. Currently, the Page Field Aviation facility lends itself quite adequately to general aviation while the Southwest Florida Regional Airport handles commercial air traffic. The County is currently applying to the Federal Aviation Administration for funding to update the Master Plans for the Southwest Florida Regional Airport and Page Field. The Master Plan Updates will be developed to provide guidelines for future development which will satisfy aviation demand and be compatible with the environment, community development, other modes of transportation, and other airports.

The development of the two airport master plan updates will provide the county with a written and graphic presentation of the ultimate development of the airports and of appropriate land uses adjacent to these facilities. Upon completion, these studies will provide additional information which may require adjustments to relevant Comprehensive Plan Elements.

Since the Southwest Florida Regional Airport opened in May of 1983, Page Field has served a general aviation function. However, at present, Page Field operations are not functioning as revenue generating operations. The Page Field Master Plan Update Study should provide the County with a viable plan with appropriate guidelines for future development which will satisfy aviation demand and be compatible with the environment, community development, other modes of transportation, and other airports as well as serving a revenue producing role.

Page Field's close proximity to the rail lines provides a justifiable basis for serious evaluation of potentials for a commercial distribution facility utilizing aviation, rail, and truck commodity movement. A commercial center such as this would provide users with a variety of options for commodity movement and would undoubtedly encourage economic development and diversification.

The Master Plan Updates will analyze Lee County's potential for creating a Foreign Trade Zone. The Lee County Port Authority adopted Resolution 82-9-19 on September 9, 1982 supporting and endorsing the creation of a Foreign Trade Zone in Lee County. A Foreign Trade Zone is an isolated, enclosed, and policed area, operated as a public utility, in or adjacent to a Port of Entry, furnished with facilities for loading, unloading, handling, storing, manipulating, manufacturing, and exhibiting goods, and for reshipment by land, water, or air (Part 400. "General Regulations Governing Foreign Trade Zones in the United States, with Rules of Procedure", Code of Federal Regulations).

As part of Lee County's effort to reduce the detrimental effects from noise pollution within airport approach zones, the County has applied to the Federal Aviation Administration for funding to be used for an Airport Noise Control and Land Use Compatibility (ANCLUC) Study. The ANCLUC Plan will be designed to reduce existing non-compatible land uses around airports and to preclude the introduction of non-compatible uses. The plan will provide for the achievement and maintenance of compatibility between the airport and its environs.

The ANCLUC Study will determine the existing and forecasted noise exposure impacts for lands in the vicinity of the Southwest Florida Regional Airport. The study will identify feasible alternatives that will result in both a

reduction of aircraft noise at significant points, as well as procedures and priorities aimed at improving the compatibility between the airport and the surrounding community. The increasing demands by development in this area make the study a necessity.

Land Use Planning in the vicinity of the Southwest Florida Regional Airport is currently guided by the requirements of Lee County Ordinance No. 78-12, Airport Hazard Zoning District, the Southwest Florida Regional Airport Environmental Impact Statement, the Development of Regional Impact Development Order and the Lee County Comprehensive Plan. The existing noise control requirements as discussed in Lee County Ordinance No. 78-12 were developed in 1976 and were based on Contour Noise Ratings (CNR).

In addition to the public aviation facilities, there are seven (7) private airstrips in Lee County. One of these airstrips has a paved runway, and is equipped with lighting. Operations at private airstrips is minimal and with continued operation of the County's general aviation facility, are not expected to increase significantly.

In addition, there are eight (8) helistops located within the unincorporated area, one located with the City of Fort Myers and one in the City of Cape Coral. The helistops are generally used for emergency medical service or mosquito control operations.

TABLE I Air Traffic Data

Lee County Airport - Page Field

<u>Year</u>	<u>Total Passenger For F/Y</u>	<u>Total Mail in 1000's of lbs.</u>	<u>Total Cargo in 1000's of lbs.</u>	<u>Total Aircraft Movement</u>
1983	1,258,304	700,257	3,640,959	147,458
1982	1,168,475	728,839	319,216	139,165
1981	1,109,454	254,973	3,859,289	139,165
1980	1,127,789	209,600	3,642,477	141,156
1979	819,422	154,546	2,981,490	139,730
1978	876,086	10,183	2,949,472	127,626
1977	543,164	10,183	1,151,575	109,654
1976	454,766	11,063	278,517	103,952
1975	278,228	22,237	522,118	95,824
1874	267,157	Not Available	Not Available	94,836
1973	293,447	Not Available	Not Available	--

Source: Lee County Division of Airports

4. Port Facilities

Lee County currently has no public port facility. There is one (1) active private port terminal site on the southern tip of Gasparilla Island used in conjunction with one (1) private upriver barge port used to facilitate transportation of oil. The Gasparilla Island Florida Power & Light port site is maintained at a depth of 32 feet by biannual dredge maintenance. The maintenance dredging, currently supported by public funds, directly benefits the sole private port user. The Gasparilla Island Florida Power and Light (F.P. & L.) ten acre site is leased to the Belcher Oil company and serves as the transshipment point for petroleum products. The fuel is off-loaded at this site and stored in oil storage tanks. The fuel is then transshipped upriver in shallow draft barges, through the Intracoastal Waterway via the Pine Island Sound Aquatic Preserve, to the F.P. & L. upriver barge port and generating facility. The petroleum is then used by F.P. & L. for electric power generation. The generating facility site and upriver F.P.& L. barge port is located approximately five miles northeast of the City of Fort Myers and located where the Orange River flows into the Caloosahatchee. The Florida Power & Light Company has indicated, that the Company "has always maintained and is currently involved in programs to monitor, review and update its fuel procurement, delivery and transportation

system to make sure that they are up to date, efficient and reflect the most modern technology which Florida Power & Light Company can make use of within the many geographical, legal and environmental restrictions currently existing". However, a change in the current delivery system of petroleum products is not expected in the near future.

An additional Gasparilla Island private port site is the inactive Seaboard Coast Line (SCL) phosphate shipping terminal. CSX Resources, Inc. (parent company of the Seaboard Coast Line) is currently seeking to utilize this property for residential and related uses and has recently been granted zoning approval. In the past, this deep water port was used extensively for the shipment of phosphate. The phosphate was shipped from the Peace River via railroad to Port Boca Grande where it was transloaded into large vessels for transportation via the Gulf of Mexico. Abandonment of the railroad line into the Port eliminated any future potential for such use of Port Boca Grande.

The Caloosahatchee River is part of the Okeechobee Intracoastal Waterway System which provides a navigable waterborne transportation opportunity from the City of Stuart on Florida's east coast to the City of Fort Myers on Florida's west coast. The Intracoastal Waterway System, provides an integrated transportation system connecting the Okeechobee Waterway and intersecting river channels to provide access to the inland region. The System was designed to augment the deep water ports of Florida.

In addition to the Florida Power & Light Petroleum Port and the upriver barge port there is a small commercial fisheries port on Pine Island.

5. Environmental Concerns

Potential development or expansion of ports, aviation, railways, and related facilities must be managed in a manner which mitigates adverse impacts upon estuarine, coastal and inland areas. A fundamental assumption of this Plan states: "The protection of the environmental quality of Lee County is essential for the economic well-being of the community. The natural environment is the natural resource base of Lee economy. If it is plundered, then the Lee economy will fail." Costs and benefits of any port, aviation or related facility proposal must be weighed to ensure Lee County's existing resource base, including our recreational and fishing waters, is not damaged.

The Charlotte Harbor Management Plan, adopted by the Cabinet on June 5, 1981, supports the above stated assumption and sets forth goals, objectives and implementation actions which guide development activities within the vicinity of Charlotte Harbor, including Lee County.

Two Aquatic Preserve Management Plans affect the Lee County area. Both plans, the Charlotte Harbor Aquatic Preserves Management Plan (adopted by the Cabinet on May 18, 1983) and the Esterro Bay Aquatic Preserve Management Plan (adopted by the Cabinet on September 6, 1983) address port development (The two areas governed by these plans are shown

on the Aquatic Preserve Map). These adopted plans state: "New port facilities shall be prohibited, and expansion of existing port facilities will be strongly discouraged and such approval will be carefully evaluated as to potential environmental damage". Therefore, potential new port development is primarily limited to areas outside the Aquatic Preserves.

A major environmental concern is related to potential oil spills that may occur during Florida Power & Light Company's (F.P. & L.) petroleum product transshipment. A minor oil spill occurred in April of 1983 as a result of the disconnection of two connecting hoses involved in the transfer of petroleum product from the Belcher Oil Storage and Transfer facility. The containment area could not accommodate the overflow and consequently petroleum ultimately spilled into Boca Grande Pass. As stated by the Gasparilla Sound-Charlotte Harbor Aquatic Preserve Manager (Florida Department of Natural Resources) in his "Crisis and Miscellaneous Incidents Report", "Approximately ten (10) yards of beach sand were removed by front-end loaders and placed in the Belcher retention pond, where rain will leach the oil from the sand and an oil separator will collect it. Contaminated marine grasses, sponges, and fishes washed up along the mean high water line were limited in extent due to the absence of wind and waves to disperse the spill, and due to initial containment activities." The Coast Guard Marine

Safety Board stated that Belcher took immediate action "professionally and efficiently". Within 24 hours of the spill, no signs of the discharge were evident.

Railway operations also pose several concerns including noise and safety impacts. Land uses within the vicinity of the railway corridor should be compatible with the existing and proposed railway operations. In addition, efforts should be taken to insure that railway crossings are adequately signed and protected. As urbanization increases in the vicinity of railroad crossings, maximum efforts should be taken to insure safe crossings.

C. METHODOLOGY

The methodology used while developing the Ports, Aviation and Related Facilities Element included an inventory of existing and proposed Lee County Commerce Movement facilities. Railways aviation facilities, port facilities, truck freight movements, and related traffic circulation was analyzed to determine potential deficiencies in the existing system.

Coordination with the Metropolitan Fort Myers Chamber of Commerce regarding their February-March 1984 survey on area imports and exports was maintained in order to gain information on the area commerce movement system. In addition, individual commerce movement sectors or modes such as railways, aviation related movements, port shipments, and truck freight were examined.

Seaboard Coastline Railroad and the Florida Department of Transportation were contacted to determine types of commerce movement via rail. Although data for types of commerce were available, data for specific amounts were not.

Commerce movement utilizing aircraft was obtained from Lee County Division of Airports. The information was very detailed and identified emplanements, deplanements, incoming and outgoing air freight, incoming and outgoing airmail and all aircraft movements.

Port related commerce movement primarily focuses upon petroleum products. In addition, data indicate that Lee County produces a great deal of fishery products. However, these figures are not easily quantified due to the lack of a centralized landing location.

Truck freight commerce movement data were most difficult to obtain due to the many trucking companies. However, according to research and data from the Florida Department of Commerce, the lack of back-hauls from the South Florida area is one of the most notable characteristics of the South Florida trucking industry. Many products are freighted into the South Florida area but there is little to be freighted or back-hauled north. The lack of back-hauls can be identified as a saleable asset of Lee County.

Existing and proposed commerce movement facilities were then analyzed in light of the existing and proposed traffic circulation system. Needs, objectives and policies were then formulated based on this analysis and evaluation. As

part of the methodology, constant coordination was maintained with all comprehensive planning staff in order to obtain a cohesive and consistent planning framework.

D. NEEDS

1. Lee County Commerce Movement

An inventory of Lee County commerce movement facilities and issues indicates potential deficiencies in the existing railways, aviation facilities and port facilities. It is necessary to provide a coordinated system of commerce movement facilities and related traffic circulation in order to meet the projected needs of the area for goods and people movement in the future. The current Lee County commerce movement system is a result of the natural competitive market. However, as the Lee County economy expands and diversifies over the next several years, it will be necessary to guide the development and expansion of commerce movement facilities in order to provide optimum opportunities for our existing and potential import and export sectors.

Future options associated with railways, aviation, and port facilities should be investigated as changing conditions indicate.

2. Railway Facilities

Specific areas along railway right of ways should be designated for commercial and industrial acreage in order to provide optimum opportunity for railway commerce movement.

In addition, it will be necessary to provide effective signal and railroad crossing protection. As urbanization increases in the vicinity of the railway, maximum efforts should be taken to insure safe crossings. The preservation of railroad right-of-way corridors should be considered for the potential use of light rail transit. Lee County's existing rail tracks can currently accommodate light rail vehicles.

3: Aviation Facilities

Lee County currently has two public aviation facilities. The previously discussed Master Plan Updates and ANCLUC Studies should provide the County with economic incentives such as Foreign Trade Zones and commercial aviation ports with warehouseing and intermodal transfer points, and appropriate land use guidelines.

Over the next several years, private aviation and helicopter service is expected to increase in the area. It will be necessary to provide more stringent guidelines for airstrip and helistop/pad location, construction and operations. It is recommended that detailed standards be developed in order to facilitate safe and effective operations. It will also be necessary to inventory the existing zoning regulations to provide appropriate and effective treatment.

4. Port Facilities

Over the past decade efforts have been taken by the County to determine the feasibility for establishing a port

facility in Lee County. However, the studies on the opportunities of ports in Lee County have indicated that there are two (2) basic problems. The first problem deals with environmental concerns including policy impacts of the Charlotte Harbor Management Plan and Aquatic Preserve Regulations. The second problem has to do with the need for public subsidization of projects of this magnitude. Although discussion and studies regarding Lee County port feasibility have been ongoing, no appropriate sites have been identified to date.

During 1963, the Lee County Port Authority Legislation (Ch. 63-1541) was authorized by a Special Act of the Legislature.

a. Upriver Port Terminal

As discussed in the Lee County Port Authority Planning and Economic Study, prepared by Watson and Company in October of 1981, the county should consider identifying property along the river which would be suitable for a potential upriver port terminal site. In the Study, it was recommended that "the Lee County Port Authority assure the availability of upland for spur construction in the area contiguous to the railroad north of the river in order to take advantage of factors which may develop in the future, relating to the viability of generating revenues from the movement of bulk solids. The capital costs associated with the development of bulk solids handling capability at that location, including railspur construction, car unloading equipment,

conveying, and barge loading equipment developed by the feasibility calculations indicates that major tonnages will be required."

b. Seafood Industrial Port Complex

As discussed in the Marine Resources Study, prepared by the Division of Community Development in September of 1981, the Marine Resources Industry in Lee County was the State's second largest producer of seafood in 1979. However, due to the apparent lack of investment in land based facilities to store, process and distribute the catch, the industry operates at a level far below its potential economic benefit to Lee County. There are approximately fifteen fish houses in Lee County. The operations of the fish houses vary according to their operators. Many strictly receive the fish and ship the product by truck to processing and packing houses in different locales. Some fish houses are able to retail as well as wholesale the products.

However, there is no facility in Lee County which has the capacity to process both finfish and shellfish from the water to the table, resulting in the majority of the fish products being transported.

Distributing the product is one of the most prominent problem areas in Lee County. The product is shipped out of the area by truck to points northward, with a limited amount of the product sold at local retail operations. In reality, a very small percentage of the species landed in Lee County actually remains here for consumption.

Local fishermen were asked to respond to a survey in 1978, commenting on present port facilities. The fishermen were quick to emphasize the need for additional dockage space and controls of pollution and excessive pressure on the fishery resources. Lee County fishermen also voiced support for a transport system for the fresh product (e.g. marine railway system), in addition, to expanding facilities for gear repair and storage. Lee County should consider identifying and designating a specific area for some type of Seafood Industrial Port Complex to store, process and distribute the potential fisheries catch. Any specific location of a seafood processing facility should be located in areas compatible with surrounding land uses.

ECONOMIC ASSUMPTIONS

In order to provide the foundation for a more secure economic base, it is of utmost importance that Lee County evaluate its potential and determine its direction for commodity movement through ports, aviation, railways, and related facilities. The relationship between ports, aviation, and railways and the economic base can be more thoroughly evaluated in light of this Plan's economic assumptions.

Commodity movement for the export sector is currently limited to truck freight traffic, some air traffic and minimal railway traffic. In addition, there are limited transfer and storage facilities for goods utilizing truck, air or rail transport. Commodity transport over water is

even more limited consisting solely of the transport of petroleum products for Florida Power & Light. At this point in time, the public or private interests in Lee County cannot export or import commodities via shallow or deepwater shipping.

The availability of transportation and commodity movement systems is an important locational consideration for manufacturing, wholesaling, and related uses. This issue is further discussed in Mr. Thomas H. Robert's August, 1983 study entitled "Industrial Land Use Needs in the Lee County Comprehensive Development Plan" (page 31). Mr. Roberts discusses criteria for locating sites for manufacturing, wholesaling, and related uses. He discusses Chapin and Kaiser's "Planning Principles for Locating Manufacturing Wholesale, and Related Use Areas" and states "These criteria deal with topographic considerations; the need for a choice of locations; accessibility by truck, air, deep water, and rail; commuter access for home-to-work trips; utilities; greenbelts and other amenities; and air and water quality considerations." The availability of and accessibility to transportation and commodity movement facilities appears to be one of the most critical criteria for the location of manufacturing, wholesaling, and related uses.

PORTS, AVIATION AND RELATED FACILITIES ELEMENT

GOALS, POLICIES AND OBJECTIVESGOAL

To develop and maintain a coordinated system of rail-ways, aviation, ports, and related facilities to facilitate the safe, cost effective, and efficient movement of commerce consistent with community values and economic objectives.

OBJECTIVES

Objective VI.B.1 Provide for services and the needs of commerce movement facilities which are economically feasible and compatible with adjacent land uses, environmental standards and public safety.

Objective VI.B.2. Evaluate the needs for the development of commerce movement facilities such as railways, ports, aviation, and related facilities, in order to diversify the economic growth of Lee County in a manner consistent with the environment and the County's overall quality of life.

- Objective VI.B.3 Evaluate development proposals for property located within the vicinity of existing commerce movement facilities to ensure for compatibility.
- Objective VI.B.4. Evaluate the projected demands for public commerce movement facilities in order to ensure their cost effective utilization.
- Objective VI.B.5. Attract increased availability and quality of commerce movement services through cooperative efforts.
- Objective VI.B.6. Ensure for the provision of warehouses, cargo handling facilities and transfer points needed for commerce movement by local industries, trade and commerce.

POLICIES

- Policy VI.B.1. Lee County shall support the existing and potential expansion of rail service to the area.
- Policy VI.B.2. Lee County shall coordinate efforts with the State Department of Transportation to promote the development of a High Speed Rail People Mover utilizing the Interstate Corridor.

- Policy VI.B.3. Lee County should investigate the possibilities of coordinating efforts with aviation interests at the Southwest Florida Regional Airport to provide seafood packaging and transfer facilities.
- Policy VI.B.4. Lee County should investigate commercial and industrial potentials at Page Field.
- Policy VI.B.5. Existing and proposed commerce movement facilities with the Traffic Circulation Plan and appropriate Transportation Agencies such as the Metropolitan Planning Organization and the Federal Aviation Administration.
- Policy VI.B.6. The opportunity for private investors to develop commerce movement facilities should be encouraged.
- Policy VI.B.7. The feasibility of private enterprise proposals to develop an upriver barge port shall be investigated.
- Policy VI.B.8. Lee County shall investigate the feasibility of private enterprise supporting the development of a Seafood Industrial Port Complex in accordance with the Land Use Plan.
- Policy VI.B.9. Industrial properties located adjacent to specific interchange areas are appropriate truck terminal transfer points.

Policy VI.B.10. Lee County shall consider land use compatibility when reviewing development proposals within the vicinity of existing or proposed commodity movement facilities.

Policy VI.B.11. Lee County shall endeavor to establish a Port of Entry and Foreign Trade Zone in order to encourage economic diversification.

Policy VI.B.12. Lee County shall develop guidelines for the location, development, and operation of private aviation facilities.

Policy VI.B.13. Locations adjacent to or near commerce movement facilities as identified in the Land Use Map are suitable for commerce movement support facilities such as warehouses, cargo handling facilities, and transfer points shall be designated.

CONSISTENCY

The Ports, Aviation, and Related Facilities Element reflects several assumptions found throughout the Lee County Comprehensive Plan including: addressing the facilities as part of the urban services area concept by maximizing the efficiency of existing and planned facilities and services; protection of the environmental quality of Lee County which is essential for the economic well-being of the community; diversification of the Lee County economic base; ensuring

that sufficient revenues are available to pay for capital improvements; and stressing intergovernmental (public) and private coordination.

The urban service area concept plays a critical part in the Ports, Aviation, and Related Facilities Element. The concept supports the infrastructure requirements for commerce movement facilities. For example, land uses should be integrated with the transportation network. Industrial land uses have been mapped to take advantage of the existing transportation facilities. The concepts used while developing the Ports, Aviation, and Related Facilities Element have been specifically coordinated with the Land Use Element and the Traffic Circulation Element. The Ports, Aviation, and Related Facilities Element maximizes the efficiency of existing and planned facilities and services such as identification of the need to develop plans and programs for the more efficient and effective use of the existing Lee County aviation facilities. The element stresses any potential development or expansion of commerce movement facilities should be based on a rational and sound basis of a demonstrated demand for such facilities.

The protection of the environmental quality of Lee County is essential to the economic well-being of the community. The natural environment is the natural resource base. Therefore, commerce movement facilities and operations which may impact the natural resource base must be analyzed and monitored closely. The Ports, Aviation, and

Related Facilities Element has addressed these environmental concerns and coordinated with the Conservation and Coastal Zone Element on these vital issues.

The diversification of the County economic base is directly related to the Ports, Aviation, and Related Facilities Element. The element describes the means of moving the commerce into, throughout and from the County. Availability of these means, at times, can act as an attractor to industries interested in moving into an area. However, choice of the type of commerce movement facility to be employed is typically based on the competitive transportation market.

Intergovernmental coordination is vital in the development or expansion of commerce movement facilities. The regional commerce movement is interconnected and therefore mutually dependent on the commerce movement into, throughout and from the County. Local, State and Federal agencies and organizations as well as private investors must be included in a coordinated effort to insure the most effective and efficient commerce movement system to support our economy of people, goods, and services movement.

In conclusion, we recognize the limitations of the policies related to the Ports, Aviation and Related Facilities Element. However, circumstances limit the extent of development and operational control the County has over many of our commerce movement facilities due to their private ownership and operations in the competitive marketplace.

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VII. COMMUNITY FACILITIES AND SERVICES ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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POTABLE WATER SUB-ELEMENT

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VII-I. POTABLE WATER SUB-ELEMENTINTRODUCTIONPurpose

Perhaps the most difficult fact to accept about Florida and Lee County specifically is that there could be a day when there might not be sufficient water available for human consumption and use. Limits on the supply may vary according to the price consumers are willing to pay for the commodity, but the limits exist nevertheless. The purpose of the Potable Water Sub-element is to provide policy guidance for the provision of an adequate volume and quality of potable water for existing and future populations of Lee County while recognizing and living within those limitations. (See Illustration #7).

Existing Conditions

There are two basic resources for potable water in Lee County: surface water, principally represented by the Caloosahatchee River, and ground water from various subterranean aquifers. Saline surface water from the Gulf of Mexico, bays and estuaries might prove to be an additional resource in the future, but it is not considered exploitable at this time. As it has become unquestionably apparent that the Caloosahatchee is not a reliable source of quality raw water, due to contamination from several origins, there has been a move toward abandoning the river as a source and to relying entirely on groundwater. The problems with the Caloosahatchee arise in part from the encroachment of saltwater upriver, itself due to low outflows from Lake Okeechobee, and in part from the contaminant loads from human

and natural origins in the whole Kissimmee River/Lake Okeechobee Basin. However, groundwater itself is also subject to some variability in quality, principally as a result of naturally occurring levels of dissolved minerals including common salt. The choices available to the community range widely from the direct, relatively low cost utilization of fresh (low salinity) ground waters, which may be limited geographically in their occurrence, to the somewhat more costly (energy and capital) intensive utilization of saline groundwater which may be more widely available, through lying in deeper strata. The total costs of producing and delivering the finished commodity vary greatly in accordance with many factors in addition to the basic technology used, including the scale of facility, the auxiliary infrastructure required and the variable costs of operation. It is desirable to maintain maximum flexibility in choosing the most cost-effective strategy to serve any defined aggregation of demand as it evolves in the future.

At the present time, only two major utilities (Fort Myers City and Lee County Utilities-North) rely on surface waters. The trend clearly is to satisfy larger scale demands with fresh groundwaters, as illustrated by the Lee County Utilities - Corkscrew Plant, the Florida Cities - Greenmeadows Plant, Gulf Utilities and Bonita Springs Water System. At the other end of the spectrum, where lack of fresh water resources or geographic isolation offset the costs of more costly technological options, the application of such technologies as reverse osmosis to saline

groundwater by Island Water Association, Pine Island Water Association and the City of Cape Coral by way of example, has proven highly successful. If this trend continues, and groundwater becomes the principal source of quality raw water for human consumption and use, then various measures, such as wellfield protection ordinances, will be required in order that the community may protect the quality and volume of its groundwater resource from the negative influences of urbanization and development and other human activity, generally.

Additional water resources can be created in effect by tapping alternate sources where water uses do not require quality potable water. These include the use of recycled wastewater or the limited use of shallow wells for irrigation and grounds management. Additional supply can be the result of conservation efforts. Conservation may prove to be the most cost effective method of creating additional water supplies and system capacity.

Investments by the public or by investor-owned utilities to provide the physical plant to pump, treat, and deliver water to the consumer are considerable. In a sense, these investments become a resource that should be conserved itself by effective management. One way in which capital of this nature is not conserved is by permitting induced urban growth to intercept capacity; for example, tapping a water system designed primarily to serve another area, thereby reducing or eliminating that utility's ability to meet its fundamental objectives. Indeed,

TABLE 1
CHARACTERISTICS OF WATER UTILITIES
LEE COUNTY, FLORIDA

<u>SERVICE PROVIDER</u>	<u>PLANT</u>	<u>DESIGN CAPACITY</u>	<u>AVERAGE FLOW</u>	<u>PEAK FLOW</u>	<u>PLANNED EXPANSION</u>	<u>PROCESS</u>
Fort Myers City	main	7.6 MGD	6.0 MGD	8.0 MGD	--	SP, LS, F, RC
Lee County Utilities (South)	Corkscrew	10.0 MGD	--	4.8 MGD	to 20 MGD (long term)	--
Lee County Utilities (North)	Olga	5.0 MGD	--	2.8 MGD	--	--
Cape Coral City	main	2.0 MGD	1.8 MGD	3.0 MGD	--	LS
Cape Coral City	P.O.	5.0 MGD	3.5 MGD	6.2 MGD	to 12 MGD, 1984	RO
Florida Cities Water Co. [PFP]	Greenmeadows	6.0 MGD	3.3 MGD	5.1 MGD	to 18.0 MGD (long term)	A, LS, F
Florida Cities Water Co. [PFP]	College Pk'way	1.5 MGD	0.5 MGD	0.8 MGD	--	A, LS, F
Florida Cities Water Co. [PFP]	(No) Cape Coral	570,000 GPD	351,000 GPD	592,000 GPD	--	A
Florida Cities Water Co. [PFP]	Waterway Estates	750,000 GPD	500,000 GPD	800,000 GPD	to 1.5 MGD	A, LS, F
Florida Springs Water Supply	E. Terry St.	3.25 MGD	1.35 MGD	2.2 MGD	unknown	LS
Lehigh Valley Co.	--	1.75 MGD	0.85 MGD	1.1 MGD	Indet	LS, F
Island Water Assn. [P]	Sanibel	2.8 MGD	1.9 MGD	2.6 MGD	3.5 MGD current permit	RO, Ed
Gulf Utility Co. [PFP]	--	1.4 MGD	0.48 MGD	1.0 MGD	to 2.9 MGD	--
Greater Pine Island Water Assn. [PNP]	----	1.5 MGD	0.55 MGD	0.74 MGD	--	RO, A
Gasparilla Island Water Assn. [PNP]	----	500,000 GPD	450,000 GPD	525,000 GPD	Pur	LS
Burnt Store Utilities [PFP]	Burnt Store (Charlotte Co.)	190,000 GPD	--	--	5 MGD (long term)	RO

[PFP] = Investor or developer private for profit water utility

[PNP] = Consumer owned cooperative or other non-profit water utility

A = aeration

ED = Electro dialysis

F = Filtration

GPD = Gallons per Day

LS = Lime softening

MGD = Million gallons per Day

Pur = Purchase from wholesale utility

RC = Recarbonation

RO = Reverse Osmosis

SP = Ground water from shallow aquifer recharged with water pumped from river

the fulfillment of the objectives of land use planning can often be achieved only through the selective provision of utilities, particularly potable water. Conversely, one tool in implementing the Land Use Element of this plan should be the restriction of access to such resources in specified localities where growth is undesirable, coupled with assisted access where growth and development are desirable. The result is a process by which selective utility provision and regulation of land use work together to improve the efficiency of public service provision.

Selective provision of water service implies that there is some central authority which can and will be committed to implementing this plan. Presently, the production and delivery of water services is substantially fragmented. In addition to the water utilities of the cities of Fort Myers and Cape Coral, and in addition to the private utility serving the City of Sanibel, there are eight (8) major water utilities including Lee County Utilities serving the County (See Major Water Utilities and Characteristics - Table 1 and Illustration 8). Other than the latter, these are either cooperatives (associations), developer systems or are for-profit investor-owned utilities all of which can be expected to operate in accordance with their own corporate goals. Without a mechanism that insures that these corporate goals are coordinated with public needs, these utilities can have the effect of creating growth and development conditions which are not consistent with the overall public needs. Regulation of many of these private utilities presently lies with the Florida

Public Service Commission (rates, franchise areas, service) and the South Florida Water Management District (withdrawal and consumptive use). Chapter 367, Florida Statutes, permits the Board of County Commissioners to exercise regulatory control, equivalent to that currently exercised by the Florida PSC, over private utilities.

Due to the rate of growth which this community has experienced, it has often outgrown infrastructure such as water systems. Insufficient volumes of water, plus specified pressure and flow deficiencies, have recently led Lee County Utilities to make substantial investments in a new wellfield and treatment plant, additional storage and transmission facilities. Several private utilities have made similar investments. Given the interest rates and other costs of capital investment that are faced today, all utilities are well advised to use various "best management" strategies to maximize the usefulness of these investments. Among these are control of land uses induced or encouraged by the availability of water, protection of sources through wellfield and recharge area protection ordinances, encouragement of the use of alternative sources of water for non-potable uses, and reduction of demand through conservation.

Data Base and Methodology

This inventory of the needs of the community is derived from a survey of public records and documents concerning potable water service in Lee County, existing and proposed. Data were compiled and depicted as maps of system franchise areas, service areas, treatment, distribution, and storage locations and groundwater

characteristics. Other data was furnished by the Lee County Division of Environmental Protective Services, the Southwest Florida Regional Planning Council, the South Florida Water Management District, various agencies of the State of Florida, and various engineering and planning consulting firms. Particular reliance was placed on the Lee County Water Master Plan, (Hole, Montes & Assocs., et al, Dec. 1981) and the Water Use and Supply Development Plan, Vol. III-C, Lower West Coast (SFWMD, April 1980). Conclusions and recommendations from these various sources were compared and contrasted to the proposed Land Use element and policy derived from this and good planning and administrative practice generally.

Needs

Potable water (or water of sufficient quality for human consumption) is a primary need. However, the need for potable water far exceeds that required for simple human consumption. Good quality water is required for a number of domestic purposes as well as being important for commercial uses. Florida generally, and Lee County specifically, are surrounded by vast quantities of water. The simple availability of quantities of water is irrelevant. Rather, the quality and cost of water is the matter of concern. A quantity of water that cannot be used for potable purposes is irrelevant for the purposes herein. The Gulf of Mexico does not meet the potable water needs of businesses and residences. It is possible for the Gulf to meet the needs, but this would require incurring the cost of desalinization. During

the planning horizon, Lee County must be prepared to supply, at most, an additional 280,000 people with potable water. At an average consumption of 165 gallons per person per day, an additional 46.15 million gallons (MGD) of capacity are required.

Beyond insuring the provision of standard level of potable water service to the future communities of Lee County, the needs of the future communities as defined by this study are, generally:

1. to establish and implement standards for improved and uniform water service;
2. to coordinate public and private investments in water facilities with other public needs expressed in the Lee plan;
3. to establish a central coordinating agency for water resource management;
4. to establish a program of resource management for ensuring sustained yield with minimal adverse impacts on environmental quality; and
5. to manage and conserve infrastructure to minimize total costs of public services and to avoid duplication of services and facilities.

CAPITAL IMPROVEMENTS

Priorities - General

Over the time horizon contemplated in this plan, the primary priority for capital investment in potable water facilities is the provision of potable water services within the urban service areas. The actual implementation of this falls to several agencies besides Lee County.

Costs

Utilizing generally accepted data, Table 2 illustrates a broadly drawn estimate of the costs of providing a major portion of the potable water infrastructure needed to serve the residential population growth up to the year 2005. These figures, in 1983 dollars, are not inflated over the twenty year period and can be expected to vary in detail over time and from actual prevailing local prices. Further, two opposing strategies of facility provision, small plant versus large plant, are compared to demonstrate achievable economies of scale. This analysis indicates that, all other things being equal, large scale water plants produce finished potable water in a more cost effective manner.

Data set forth in Table 1 indicate that the several larger utilities plan over 82 million gallons per day of capacity. If locational problems do not interfere, 28 million gallons per day of additional capacity, costing from \$21 million to \$42 million should suffice to serve the additional population (Table 2).

The actual investments required of the several utilities service producers will be determined by the degree to which population and the resulting service demand are located and consolidated in their respective service areas. Particularly sensitive to the patterns of development, the costs of these distribution systems, mains, pumps and satellite storage, which are not projected, can be accurately determined only when engineering design is set and capital budgets are established. These costs will be largely determined by the degree of compactness of

the settlement pattern, in turn by the degree to which the urban services areas are successfully implemented through the development review process. One virtue of the urban services area strategy of growth management is that the future demand for services can be more confidently predicted.

Proposed Funding Sources

The funding sources to be utilized in financing potable water capital facilities are structured in such a manner that growth itself will generate the revenue necessary to finance the needed facilities. Therefore, the priority of facility expansion within the urban service area will be revealed by development applications and capital receipts. As development applications indicate needed expansion, the funds coming from those new developments should be directed toward the areas of need.

There are seven proposed funding sources for capital improvements for potable water treatment and distribution systems:

1. Connection charges and impact fees assessed against new development for a proportional share of the cost to provide capital facilities to meet the potable water needs of new development.
2. Developer dedication of necessary distribution lines both on-site and off-site.
3. Any available grants.
4. Monthly charges for capital improvements or to amortize capital improvement bond issues.

5. Special assessment of benefitted property.
6. Investment by private sector utilities.
7. Ad valorem taxes to offset general obligation bond issues.

TABLE 2
POTABLE WATER CAPITAL COSTS
LEE COUNTY
1985-2005

	1980	1985	1990	1995	2000	2005	CHANGE
POPULATION:							
RESIDENTS	205.3	257.7	311.0	355.8	400.6	429.0	-
ADEQUACY	<u>51.3</u>	<u>64.4</u>	<u>77.8</u>	<u>89.0</u>	<u>100.2</u>	<u>107.3</u>	-
TOTAL	256.6	322.1	388.8	444.8	500.8	536.3	279.7
DEMAND (MGD)*	25.7	32.2	38.9	44.5	50.1	53.6	-
INCREASE (MGD)	-	6.6	6.7	5.6	5.6	3.6	28.0

COST OF ADDITIONAL DEMAND: SMALL PLANT OPTION (in thousands of dollars)

	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>	<u>Total</u>
WELLS	655.0	666.5	560.0	560.0	355.0	2796.5
TREATMENT	8187.5	8331.3	7000.0	7000.0	4437.5	34956.3
STORAGE	982.5	999.8	840.0	840.0	532.5	4194.8
DISTRIBUTION		NOT PROJECTED			NOT PROJECTED	
TOTAL	9825.0	9997.6	8400.0	8400.0	5325.0	41947.6

COST OF ADDITIONAL DEMAND: LARGE PLANT OPTION (in thousands of dollars)

	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>	<u>Total</u>
WELLS	655.0	666.5	560.0	560.0	355.0	2796.5
TREATMENT	3275.0	3332.5	2800.0	2800.0	1775.0	13982.5
STORAGE	982.5	999.8	840.0	840.0	532.5	4194.8
DISTRIBUTION		NOT PROJECTED			NOT PROJECTED	
TOTAL	4912.5	4998.8	4200.0	4200.0	2662.5	20973.8

*Demand in millions of gallons per day is based on a rate of 100 gallons per day per capita

Priorities - Specific

Within the first five years of this plan, Lee County has defined two major projects and has set their priority over all other possible potable water improvements in the Lee County Utilities service area. These are:

1) Colonial Boulevard Water Mains

Extension of 12" (N. side) and 16" (S. side) potable water mains along Colonial Boulevard from Metro Parkway to Ortiz Avenue with interconnection at Ortiz Avenue. This is financed through assessment of benefitted properties. Project is ongoing and goes through 1984-5.

2) System Expansion Lee County Utilities North

Establish a new treatment plant (contingent on locating quality ground water in N. Ft. Myers) or construct subaqueous crossing of Caloosahatchee River from city of Fort Myers to N. Fort Myers. Also, other improvements to the distribution system. This will be financed through revenue bonds served from user charges. Project runs through 1984-5 and 1985-6.

In addition to the above, a Utility Administration Complex is budgeted for construction in 1984-5. Some portion of this cost should be charged to the provision of potable water services in the Lee County Utilities service area and the water resources management function.

GOALS, OBJECTIVES AND POLICIES

Goal VII.A: To ensure that all residents of the Urban Service Areas of Lee County have access to high quality potable water service.

Objective VII.A. To provide minimum uniform standards of service for high quality potable water service.

Policy VII.A.1. Development in the Urban Service Areas shall occur only where the standard potable water service is or can be made available at the property line.

Policy VII.A.2. The County, through coordinative efforts, shall prevent the undesirable inducement of growth through the interdiction of supply.

Policy VII.A.3. The County shall establish a county-wide water resources management agency for the purposes of:

- a) monitoring and coordinating the consumptive use and conservation of potable water;
- b) representing the public interest before various regulatory agencies such as the Florida Public Service Commission, the South Florida Water Management District Board, etc.;

- c) conducting research into water resource management issues including such matters as local regulation of utilities, alternate strategies of facility provision and finance, etc.

Goal VII.B: To ensure the efficient provision of high quality potable water facilities to the urban population of Lee County.

Obj. VII.B.1. Promote the creation of an effective and efficient system of distributing treated potable water to the urban areas of Lee County through capital investment regulation and cooperation between public and private utilities.

Policy VII.B.1 The County shall provide, directly, or indirectly, sufficient infrastructure to provide standard water service to developing areas within the Urban Service Areas.

Policy VII.B.2. The County shall encourage all utilities to extend service only to land uses permitted under the Land Use Element of this plan, and only after review by County staff.

Obj.VII.B.2.: Promote the coordination of potable water systems and the continuity of service.

Policy VII.B.3. In the Urban Service Areas and elsewhere as required, the County shall promote the interconnection of contiguous water utilities to provide for continuity of service and to avoid or reduce duplication of service.

Policy VII.B.4. Total system design shall encourage uniform service by the integration of separate utilities.

Goal VII.C: To ensure that the costs of providing facilities for the supply of potable water are borne by those who benefit from them.

Obj. VII.C: To provide regulation and administrative process that ensures that the costs of new or augmented potable water infrastructure are borne by those who benefit from the improved supply.

Policy VII.C.1 New development shall pay, through impact fees and dedication of capital assets or fees in lieu of dedication or through other administrative mechanisms, its fair share of the the costs of providing standard potable water service for that development.

Goal VII.D: To ensure the protection and conservation of the natural resource base of the potable water system.

Obj. VII.D: To encourage the conservation of high quality water resources by protecting the sources, by identifying alternative resources and by providing for use reduction.

Policy VII.D.1. Ground waters of specified areas of the County shall be designated as "future potable water supply" and appropriate legislation shall be enacted to protect that supply from contamination, waste or depletion.

Policy VII.D.2. Wellfield and recharge area protection ordinances shall be adopted to establish regulations for development over recharge areas of existing and planned wellfields.

Policy VII.D.3. The County shall identify alternative supplies of water for uses not requiring high quality potential potable water, and provide for their exploitation where feasible.

Policy VII.D.4. The County shall establish and implement a program of water conservation including:

- a. immediate adoption of amendments to the building and plumbing codes to require low water use fixtures in new and renovated construction (in conformance with §553.14, F.S.);
- b. incentives for "grey water" systems or other recycling activities;
- c. standing criteria for water emergencies and conservation measures related thereto;
- d. adoption of incentives for household use of appliances with low water consumption rates; and
- e. education and extension service to householders to reduce water use.

CONSISTENCY

Good planning, as well as state statutes, demands internal consistency of any comprehensive plan. The Potable Water Sub-element is designed and intended to be consistent primarily with the Land Use and Conservation/Coastal Zone Management Elements, as well as with the Wastewater Management, Surface and Stormwater Management, and Solid Waste Sub-elements, and through these, the remainder of the plan. This is achieved in the following way.

The Potable Water sub-element is based on the same economic and demographic assumptions as the remainder of the plan. The central intent of this sub-element is to provide an adequate level of service to the future urban population of the various communities of Lee County while achieving an acceptable balance of costs and benefits. The Potable Water Sub-element is directly connected to the Land Use Element through its reinforcement of the Urban Containment strategy. It does this by committing the main part of the investment in public water infrastructure to the Urban Services Areas. Further, it relates directly to the Conservation/Coastal Zone Management Element through its particular emphasis on resource conservation. Lastly, it coordinates both by recommending restricted land use in areas designated as future potable (ground) water areas. The issue of resource conservation is also a common thread throughout the Wastewater, Surface and Stormwater and Solid Waste sub-elements.

WASTEWATER MANAGEMENT SUB-ELEMENT

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VII-II. WASTEWATER MANAGEMENT SUB-ELEMENTINTRODUCTIONPurpose

One of the basic attractions of Florida is its water. A key to the quality of the water is the way in which the community deals with wastewater. The Wastewater Management sub-element provides policy guidance for the provision of wastewater collection, treatment and disposal facilities and services in conjunction with the Land Use Element and in a manner consistent with the Conservation and Coastal Zone Management Element.

Existing Conditions

Wastewater systems are used by communities for practical and aesthetic reasons to remove various contaminants from the wastewater stream before the water is returned to natural hydrologic systems. The primary goal has been the protection of human health, although more recently the protection of water quality in natural systems has become a community goal of equal weight. The most inexpensive method of treatment and disposal is the septic tank. However, it is recognized that this is an appropriate solution where soils and hydrologic conditions are favorable. It is also appropriate where land use intensities and residential densities are very low, and when effluents are produced which are relatively easy to process. Further it can be argued that the cost effectiveness of the septic system is based on unpriced or

TABLE 1
CHARACTERISTICS OF WASTEWATER UTILITIES
LEE COUNTY, FLORIDA

SERVICE PROVIDER	PLANT	DESIGN CAPACITY	AVERAGE FLOW	PEAK FLOW	PLANNED EXPANSION
Fort Myers City	South ¹	6.0 MGD	4.1 MGD	5.8 MGD	to 12 MGD in 1985
Fort Myers City	Central ¹ (Raleigh St)	9.0 MGD	6.7 MGD	10.7 MGD	to 11 MGD in 1984
Cape Coral City	main (Everest Pkwy)	4.0 MGD	4.7 MGD	5.2 MGD	to 6 MGD
Fort Myers Beach Sewer Dist	main ³ (Pine Ridge Rd)	2.8 MGD ⁴	2.5 MGD	3.4 MGD	4.5 MGD under study
Florida Cities Water Co [PFP]	Fiesta Village (Cypress Lake)	2.0 MGD	1.5 MGD	2.4 MGD	to 5.0 MGD
South Fort Myers Sewer Dist	N/A ^{3, 5}	included under	Fort Myers City / South		
East Lee County Sewer Dist	N/A ^{3, 5}	included under	Fort Myers City / Central		
Florida Cities Water Co [PFP]	Waterway Estates	1.1 MGD	0.6 MGD	0.9 MGD	----
Sanibel Sewer [PFP]	----	1.25 MGD	.55 MGD	.95 MGD	----
Lehigh Utilities Co [PFP]	main	1.5 MGD	0.8 MGD	1.2 MGD	----
Burnt Store Utilities [PFP]	main (Burnt Store Rd Charlotte Co)	250,000 GPD	80,000 GPD	166,000 GPD	to 5 MGD long term
Forest Utilities [PFP]	----	0.5 MGD	---	---	---
North Fort Myers Utilities [PFP]	----	0.4 MGD	--	--	----
Bonita Springs Country Club [PFP]	--	0.3 MGD	--	--	----
Gulf Utilities Co [PFP]	--	178,000 GPD	130,000 GPD	--	----
Marlacha Sewer District	--	150,000 GPD	N/A	N/A	----
Southwest Florida Regional Airport	--	150,000 GPD	--	--	----
Casparilla Island Water Assn [PNP]	--	275,000 GPD	180,000 GPD	405,000 GPD	to 705,000 GPD (under construction)

GPD = Gallons per Day

MGD = Million gallons per Day

[PFP] = Investor or developer owned, for profit sewer utility

[PNP] = Consumer owned cooperative or other non-profit water utility

¹ Provides treatment and disposal services for South Fort Myers Sewer District

² Provides treatment and disposal services for East Lee County Sewer District

³ A special use or assessment district operated by the Lee County Utility Dept

⁴ Real operating capacity limited to 1.3 mgd by effluent disposal system, renovations under way to bring plant operation to design specification while concurrently studying feasibility of expanding plant to 4.5 million gallons per day

⁵ This district operates no treatment or disposal facility

unrecognized costs of ground water pollution and/or resulting surface water contamination. As Lee County grows and becomes more urban in form and intensity, the septic tank will be even less acceptable as a method of wastewater treatment and disposal, except in those outlying areas meeting the conditions specified above.

The alternative requires more complex technology and a community scheme of capital improvement. Central wastewater systems are capital and energy intensive, particularly in Southwest Florida where gravity sewers are costly to construct and operate due to the flat terrain. Fiscal feasibility requires concentration of wastewater generation in a relatively compact area. It is recommended that investment in wastewater management infrastructure be concentrated in the Urban Services Area.

Central wastewater management infrastructure can be divided into four components -- collection, treatment, discharge of effluent, and disposal of sludge. This infrastructure must also be soundly engineered and constructed to prevent infiltration of ground waters which dilute and increase the volume of the effluent, and thereby the costs of treatment and disposal.

What remains after treatment, relatively clean water or effluent and sludge, must be disposed of in a manner consistent with economic efficiency and environmental safety.

Another resource that can be beneficially conserved is effluent itself. After treatment, the water has uses, such as irrigation or grounds management. In several communities, a secondary effluent distribution system has been established to

supply high quality treated effluent to homeowners, large scale grounds managers (parks, golf courses, etc.), or to agricultural interests. Other ways of reducing demand include "gray water" systems where water from bathing and washing machines is used for lawn irrigation.

After treatment and disposal or recycling of the effluent, the solids remain as "sludge". Sludge from small scale Wastewater Treatment Package Plants (WWTPPs), and septic tank and grease trap pumpage has become a problem, characterized as the most serious public health problem in the community. In these cases, the materials are collected by "septage" haulers or septic tank services and disposed of by land spreading on open fields and pastures. This legitimate practice, together with "wildcat" dumping in roadside swales or on unpermitted fields, results in the potential contamination of ground and surface water and the land itself. Additional public health risk can also be produced from this practice by the transmission of pathogenic organisms by insects, rodents and other vectors.

An additional issue in defining a strategy for creating a wastewater management infrastructure is identifying the role that small scale wastewater treatment package plants (WWTPP) are to play in that strategy. A recent survey counted over 225 WWTPP's of 100,000 gallons per day (gpd) capacity or less permitted in Lee County, some not yet constructed or in operation. The greater number of these are in the unincorporated county and provide some degree of wastewater treatment for developments lying beyond the reach of existing central sewer systems. In

some instances, the use of a relatively small scale plant (up to .5 million gallons per day) in providing wastewater services to geographically isolated pockets of urban density or intensity is a highly rational option. However, for the most part, the WWTPP is used by private development to enter the market prior to the extension of central sewer service or to avoid the higher costs of land already served by central sewer. In conjunction with relatively unconstrained extension of water mains and privately financed road construction, this use of package plants (as well as over-sized septic systems) has intensified the tendency of settlement patterns to develop the form of "sprawl" and discontinuous "leap frog" development. While economically advantageous to the developer, it increases the costs of delivering the total package of public services, and certainly some of the private costs of utilizing developed land.

In addition, the WWTPP is not always an adequate solution to the treatment and disposal of wastewaters. In part this is due to the scale of the operation. By its nature, the smaller plant is not as reliable as a larger plant as it generally does not have the redundant or duplicate equipment required to back up material not in operation due to periodic maintenance or breakdown. Also, the small plant does not lend itself economically to higher levels of treatment such as the effective removal of nitrogen, phosphorous, certain soluble chemicals and toxic metals (Advanced Wastewater Treatment or AWT). Lastly, the WWTPP is often inadequately operated and maintained due to insufficient training and experience of the operators. Given that these

various issues are recognized and dealt with through redundancy standards for permanent WWTPPs, through locational limitations for plants not capable of AWT, and programs of assistance and extension service to WWTPP operators, and given that the small plant may, in certain geographic instances, be a cost/effective competitor to the large scale wastewater plant, then the wastewater treatment package plant has a potential role in achieving the community's goals through the implementation of this general plan.

Data Base and Methodology (See Illustration #9)

The section concerning the existing conditions and needs of the community is based on an analysis of public records and documents concerning wastewater facilities and management policy in Lee County existing and proposed. Data were compiled and graphically depicted as maps of system franchise areas, service areas, treatment and disposal locations and collection systems. Other information was provided by Lee County Division of Environmental Protection Services, the Southwest Florida Regional Planning Council, the South Florida Water Management District, agencies of the State of Florida, the U.S. Environmental Protection Agency, and various engineering and planning consulting firms. Particular reliance was placed on the South Lee County Facility Plan Update (2 vols., Post, Buckley, Schuh & Jernigan, Inc., 1982) and the Water Use and Supply Development Plan, Vol. III-C, Lower-West Coast (SFWMD, April, 1980). Conclusions and recommendations from these various sources were compared and contrasted to the proposed Land Use, Conservation/Coastal Zone Elements and Potable Water Subelement.

Needs

Beyond insuring the provision of standard wastewater treatment and disposal services, the needs of Lee County are:

1. to establish and implement standards for improved and uniform wastewater treatment services;
2. to ensure the coordination of investment in central wastewater facilities with other elements of the Lee plan;
3. to establish a central coordinating agency for water resource management with responsibility and capability in wastewater management;
4. to protect the natural resource base from wastewater pollution and subsequent destructions;
5. to utilize treated wastewater;
6. to coordinate infrastructure needs so as to minimize the total costs of public services, and to avoid duplication of services and facilities.

CAPITAL IMPROVEMENTS

Priorities - General

Over the time horizon contemplated in this plan, the primary priority for capital investment in wastewater facilities is the provision of collection and treatment services within the urban service areas. As in the realm of potable water, the implementation of this policy falls to several agencies.

Costs

Table 2 illustrates a very broadly drawn estimate of the costs of providing a major portion of the wastewater infrastruc-

ture needed to serve the residential population growth up to the year 2005. These estimates assume cost parameters drawn from generally excepted standards and can be expected to vary in detail from locally prevailing costs or they may vary in time. Also, they reflect a constant 1983 dollar base, not inflated over the twenty year period. Lastly, the costs of collection systems, mains, pump stations, interceptors, trunks, etc. are not projected. This table compares two strategies of facility provision; Small plant and Large plant (1-5 MGD versus over 5 MGD). It demonstrates that given the assumptions above and all other factors being equal, the large plant option provides treatment capacity at the lowest total cost.

From Table 1 it appears that the major utilities already plan over 42 million gallons per day of wastewater treatment capacity. According to the estimates laid out in Table 2, the 22.4 million gallons per day additional capacity needed by 2005 will cost in the aggregate from \$35.7 million to \$67.4 million depending upon the scale of treatment facilities used.

The actual investments required of the several utility service producers will be determined by the degree to which population and the resulting service demand are located and consolidated in their own service areas. The costs of the collection systems, which are particularly sensitive to the patterns of development and are not therefore projected, can be accurately determined only when engineering design is set and capital budgets are established. These costs will be a function of the

compactness of the settlement pattern and further by the degree to which the urban services areas are implemented in the development review process. One virtue of the urban services area strategy of growth management is that the future demand for services can be confidently predicted.

Proposed Funding Sources

The funding sources to be utilized in financing wastewater capital facilities are structured in such a manner that growth itself will generate the revenue necessary to finance the needed facilities. Therefore, the priority of facility expansion within the urban service area will be revealed by development applications and capital receipts. As development applications indicate needed expansion, the funds coming from those new developments should be directed toward the areas of need.

There are seven proposed funding sources for capital improvements for wastewater treatment and collection systems:

- (1) Connection charges and impact fees assessed against new development for a proportional share of the cost to provide capital facilities to meet the wastewater needs of new development.
- (2) Developer dedication of necessary collection and transmission lines both on-site and off-site.
- (3) Any available grants.
- (4) Monthly charges for capital improvements or to amortize capital improvement bond issues.
- (5) Special assessment of benefitted property.

- (6) Investment by private sector utilities.
- (7) Ad valorem tax to offset general obligation bond issues.

Priorities - Specific

Within the first five years of this plan, Lee County has defined three major projects related to wastewater management and has set their priority over all other possible wastewater improvements in the various sanitary sewer districts operated by Lee County Utilities. These are:

- (1) Fort Myers Beach Sewer Plant Expansion

Expansion of the Ft. Myers Beach Sewer District treatment plant (Pine Ridge Rd.) from a 2.7 million gallons per day (mgd) capacity to 4.5 mgd. This includes improvement and expansion of the effluent disposal system. This is financed through user charges. Project is programmed to run through fiscal years 1984-5 and 1985-6.

- (2) South Fort Myers Sewer System Expansion

Expansion of the South Fort Myers Sewer District collection system by constructing master pump stations and interceptor lines. This project is financed through user charges and construction runs from 1985-6 through 1986-7.

- (3) Regional Sludge Composting Facility

In collaboration with the City of Fort Myers, construct a 16 ton per day sewer sludge composting plant to serve City and Fort Myers Beach treatment plants. This pro-

ject will be financed by sales of resulting product (solid soil conditioner) and by user charges. Construction is programmed for 1984-5 and 1985-6.

In addition to the above, a Utility Administration Complex is budgeted for construction in 1984-5. Some portion of this cost should be charged to the provision of wastewater management in the County sewer districts and to the water resources management activity.

TABLE 2
WASTE WATER CAPITAL COST
 LEE COUNTY
 1985-2005

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>	<u>CHANGE</u>
POPULATION:							
RESIDENTS	205,266	257,700	311,000	355,800	400,600	429,000	-
ADEQUACY	<u>51,317</u>	<u>64,425</u>	<u>77,750</u>	<u>88,950</u>	<u>100,150</u>	<u>107,250</u>	-
TOTAL	256,583	322,125	388,750	444,750	500,750	536,250	279,700
WASTEWATER:							
PRODUCTION (MGD)*	20.53	25.77	31.10	35.58	40.06	42.90	-
INCREASE (MDG)	-	5.24	5.33	4.48	4.48	2.84	22.37
COST OF ADDITIONAL CAPACITY:							
WITH SMALL PLANTS (in thousands of dollars)							
	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>	<u>Total</u>	
LIFT STATIONS	1,216	1,236	1,039	1,039	659	5,189	
TREATMENT	14,385	14,623	12,291	12,291	7,792	61,381	
STORAGE	<u>198</u>	<u>201</u>	<u>169</u>	<u>169</u>	<u>107</u>	<u>843</u>	
COLLECTION	-----not projected-----						
<u>TOTALS</u>	15,799	16,060	13,499	13,499	8,557	67,413	
COST OF ADDITIONAL CAPACITY:							
WITH LARGE PLANTS (in thousands of dollars)							
	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>	<u>Total</u>	
LIFT STATIONS	521	529	445	445	282	2,221	
TREATMENT	7,645	7,771	6,532	6,532	4,141	32,621	
STORAGE	<u>196</u>	<u>199</u>	<u>167</u>	<u>167</u>	<u>106</u>	<u>834</u>	
COLLECTION	-----not projected-----						
TOTALS	8,361	8,499	7,144	7,144	4,529	35,677	

* Generation in millions of gallons per day is based on a rate of 80 gallons per day per capita.

GOALS, OBJECTIVES AND POLICIES

Goal VII.G.: To ensure a clean and healthier human and natural environment through the provision of services and facilities to collect, treat, and dispose of water borne wastes and sewage.

Obj. VII.G.: To create and maintain a healthful urban environment by ensuring the provision of central wastewater facilities and services in urban service areas where economically feasible.

Policy VII.G.1: The County shall provide, directly, or indirectly through franchised or regulated sewer utilities, sufficient infrastructure to encourage development in the Urban Service Areas.

Policy VII.G.2: The County shall establish a county-wide water resources management agency which, in addition to responsibilities relating to potable water set forth elsewhere in this plan (see Potable Water Subelement, Policy VII.A.3.), will be responsible for:

- a) monitoring and coordinating the treatment and disposal of wastewater, and counseling of operators of WWTPP;
- b) representing the public interest before various regulatory agencies including the Florida Department of Environmental Regulation, the Florida Public Service Commission, etc.;

- c) conducting research into wastewater management issues including such matters as local regulation of utilities, consolidation of utilities, alternate strategies of facility provision and finance, etc.

Policy VII.G.3: In order to provide services and facilities in the most economical manner consistent with the general goals of the plan, wastewater processing should be consolidated through regional sewer service areas operating treatment and disposal facilities and by cooperation with other service providers including the municipalities.

Policy VII.G.4: Small wastewater treatment package plants (WWTPPs) and septic tanks shall be authorized only as interim means of providing wastewater treatment services in the Urban Service Areas and shall be abated upon the extension of central sewer services.

Policy VII.G.5: Where small pockets of existing urban land use or intensity lie beyond a central wastewater service area, nothing herein should preclude the use of small scale but efficient wastewater technology as a permanent means of treating wastewater.

Goal VII.H: To ensure that the management of water borne wastes and sewage is conducted in a manner that

minimizes negative impacts on resources and the environment, particularly ground and surface water quality and freshwater, estuarine and marine biotas.

Obj. VII.H: To create and operate a system and program of wastewater management that provides adequate services to the community, including the conservation of the recognized values of the natural resource base.

Policy VII.H.1: Development outside of Urban Services Areas, not having direct access to central sewer service and sufficient treatment capacity may utilize septic tanks, where soils and hydrologic conditions are appropriate, where the land use itself is of low density or intensity and where sewage flows are minimal, and where biological oxygen demand (BOD), chemical oxygen demand (COD) or other specified pollutants do not exceed adopted maximum limits. Limits may be more stringent in areas designated as resource protection areas.

Policy VII.H.2: The County shall adopt a wellfield and recharge area protection ordinance that will regulate the disposal of treated effluents by percolation pond or drainfield (or similar devices) to ground waters in areas lying within recharge areas of existing or potential wellfields.

Policy VII.H.3: Wastewater Treatment Package Plants shall not be operated so as to create a nuisance through odor, noise, spills of chemicals or sewage, or visual blight.

Policy VII.H.4: The County shall establish, through impact fees or other mechanisms, incentives for homeowners, septage haulers (septic tank services) and small WWTPP managers to dispose of septage and sludge through public or franchised sludge processing plants.

Policy VII.H.5: The County shall establish an environmentally sound program of sludge and septic tank pumpage processing and disposal.

Policy VII.H.6: The County shall continue its exploration of the feasibility of processing sewer sludge to recover a composted soil condition for public use or for marketing to agricultural operators or grounds managers.

Policy VII.H.7: The County shall establish and enforce standards to ensure that all wastewater treatment plants are operated and maintained so as to produce effluents of a quality commensurate with the public health and the needs of the receiving hydrologic system.

Goal VII.I: To ensure that maximum advantage is taken of the resource represented by treated wastewater effluents in conserving water resources generally.

Obj. VII.1: To support and encourage various methods and plans of reusing treated effluent.

Policy VII.1.1: The County shall adopt development regulations which permit the reuse of wastewater in planned developments.

Policy VII.1.2: The County shall examine and assess the feasibility of constructing a secondary treated effluent distribution network to convey treated wastewater to consumers of reuse water.

CONSISTENCY

The Wastewater Management Subelement is designed and intended to be consistent primarily with the Land Use and Conservation/Coastal Zone Management Elements, as well as with the Potable Water and Surface and Stormwater Management Subelements, and through these, the remainder of the plan. This is achieved in the following manner.

The Wastewater Management Subelement is based on the same economic and demographic assumptions as the remainder of the plan. The central intent of this subelement is to provide an adequate level of service to the future urban population of the various communities of Lee County while achieving an acceptable balance of costs and benefits. The Wastewater Management Subelement relates directly to the Land Use Element through its reinforcement of the Urban Services strategy. It does this by concentrating the investment in public wastewater infrastructure in the Urban Services Areas. It is related directly to the Conservation/ Coastal Zone Management Element through its imple-

mentation of values of resource protection, particularly the conservation of potential potable resources as well as the freshwater, estuarine, and marine ecosystems. Recommended restrictions on wastewater plants and suggestions concerning the use of treated wastewater effluents as an alternate to quality treated potable water tie this body of policy to the Potable Water Subelement, also.

SURFACE WATER MANAGEMENT SUB-ELEMENT

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VII-III. SURFACE WATER MANAGEMENT SUB-ELEMENTA. INTRODUCTIONPurpose

The purpose of surface water management is to maintain a clean and healthy environment for people and their activities, and to reduce the damage to personal and real property caused by inundation or flow of water. However, of equal concern is the maintenance the quality of the waters, fresh estuarine and marine, to which storm and surface waters are discharged. It is the intent of this element to establish a policy that creates a balance between the benefits and costs of requirement.

Existing Conditions

Traditionally, surface water management in South Florida meant "drainage", getting the water off, or out of the land. Generally, this function was performed through digging ditches and retention pits, through the erection of dikes, dams, and other diversionary structures, through the use of pumps, or by filling property up to a level above the expected "flood". This treatment is capital and energy intensive and has radically altered the topography and the local (often regional) ecosystem. The guiding rule has been the legal doctrine of the "common enemy", and the motive was to reclaim inundated or overflowed

land for "productive" (historically agricultural) use. The result was over-drainage of the surface water and lowering of water tables, and the unwitting alteration of the quality and salinity of receiving waters, streams or estuaries. Over the years we have accumulated a much greater comprehension of the mechanics of the local hydrologic cycle and of the consequences of the changes that have been wrought in it. These consequences include the wastage of potential potable water resources, erosion of the land and sedimentation of receiving stream and bay bottoms, and alteration of the salinity and nutrient loads in estuaries that function as nurseries for economically significant marine life.

The growth of urban land uses is a trend that exacerbated the problems presented by surface water management. Urban land uses can be characterized as having been altered by being covered by impervious surfaces, buildings, pavements, and compacted soils, from which water that falls as rain or which flows from other locations generally collects on the surface or runs off entirely. By comparison, in non-urban areas, there is proportionally less impervious surface in comparison to natural surfaces, which are characterized by permeable soils and extensive vegetative cover. Natural surfaces tend to permit water to percolate down through the soil to be stored in ground water and, by their roughness, to reduce the velocity of the runoff that remains. Also, some pollutants carried by the runoff can be picked up by vegetation on natural surfaces. However, runoff

from urban land uses tends to carry more complex pollutants that cannot be incorporated by vegetation, and there is relatively less vegetation. The result is that increased conversion of non-urban lands to urban uses disproportionately increases volumes of storm and surface water runoff as well as increased pollutant loads. Further, due to the lack of storage on or in the ground, and the higher velocity of water running from smoother pavements through ditches and canals, the water wreaks havoc with the natural cycles of salinity in brackish or saline receiving waters. This in turn upsets the reproductive cycles of marine life in Lee County's otherwise very productive estuaries.

TABLE 1. HYDROLOGIC CHARACTERISTICS COMPARED

<u>Urban Land</u>	<u>Non-Urban Land</u>
-low % of vegetative cover	-higher % of vegetative cover
-high % of impervious surfaces	-low % of impervious surfaces
-low rates of percolation or infiltration	-high rates of percolation or infiltration
-high velocity of runoff due to smoothness of surface and channelization	-low velocity of runoff due to roughness of surface
-low rate of uptake of water and nutrients	-high rate of uptake of water and nutrients
-high rate of runoff (100% from impervious surfaces)	-low rate of runoff in the aggregate

SOURCE: Lee County Planning Department

The choices offered by this issue constitute a classic case of competing and often contradictory ends. No one wants water in their home or business, few want their yards or streets un-

dated, and it is not in the public interest to permit water to stand over underground utilities or septic system drainfields. On the other hand, few would want to diminish the opportunities to provide for a renewable water resource for the community's future, nor would they willingly discard the environmental qualities which led many of them to come to Florida, and which may provide, directly or indirectly, for their economic livelihood. Yet, there does not appear to be any way by which this community can have both the speedy and complete removal and disposal of storm water and a healthy coastal environment or an adequate reserve of high quality ground water for human use (see also the Potable Water Sub-element). What the community can have is a body of policy that seeks an optimal package of benefits by containing the direct costs of drainage infrastructure and by reducing the loss of natural resources and damage to property.

One approach which may be taken is to concentrate investments in traditional surface water management infrastructure in the Urban Services Areas. These are areas in which we may assume that the benefits of natural systems are already consumed, lost or otherwise committed to intense human activity. Here too, demands created by impervious surfaces are at their greatest and surplus land for retention is most dear. Efficient management of existing and future surface water management infrastructure is enhanced by reducing demand through mandatory standards for retention and disposal. However, as the system grows in the future, more attention will be required to techniques of maintaining or improving the quality of water removed from the urban

areas. This can be accomplished through detaining and settling the first flush of rainfall runoff and the particulate matter it carries, by spreading the water over vegetated surfaces (where access to sufficient land is available) including lawns and grassed swales, through programs of street cleaning, and, in extreme cases, by the treatment of storm waters before release to natural systems.

On the other hand, outside of the urban service areas, emphasis ought to be placed on the preservation and use of the natural systems of drainage consisting of streams, sloughs and floodways, and sheetflow. These systems hold or slow the flow of water permitting infiltration to ground waters, reduce erosion, and reduce the peak volume released to saline estuaries as well as releasing the fresh water to brackish or saline systems on a schedule to which the biota is adapted. As these are "natural systems", the costs of infrastructure and energy are reduced. Development in rural and suburban, or at least non-urban areas will have to be designed to maintain low levels of runoff, to maintain the quality of water discharged and to tolerate occasional temporary inundation, while the public will have to be educated to accept this strategy. In most instances when traditional drainage infrastructure exists outside the Urban Services Areas, and where its harm is minimal, efforts should be made only to maintain it but to permit no extension or expansion. Where it is demonstrable that a public harm is created by its continuance, old drainage systems should be modified to restore water table levels, to end diversions and to restore wetlands that function as effective imitators of natural systems.

In some quarters, there have been assertions that the whole emphasis on "disposal" of surface waters is wrong; that this is another source for quality raw water for human use and consumption; that this resource ought to be conserved. Indeed the protection of freshwater wetlands and the use of natural topographic features designated "flow ways" aids in resource conservation by holding water on the land for a time equaling or approaching the historic hydroperiod and permitting that water to percolate into the surficial and other aquifers. On a broader scale, large areas might be designated water conservation areas with concomitant restrictions on surface uses. Other conservation actions would include constructing surface reservoirs kept up by pumpage from surplus runoff, or by deep well injection of surplus surface water to saline aquifers. Both of these activities are fairly expensive to execute, and in both instances care should be taken to insure sufficient fresh water remains for wetlands and for the estuarine ecosystems.

Much of the foregoing is aimed at providing a necessary service while conserving the values of various natural resources. These values are generally concentrated in the quality of receiving waters. In the highly productive bays and estuaries, fresh water is a necessity for regulating salinity and flushing nutrients into the system. However, too much fresh water is as much a pollutant to these systems as the chemical output of human activity often carried by this fresh water. Any man-made surface water management system ought to be designed to reduce the pollutant load of urban runoff. To a large degree, this function is

performed by natural systems, but even these can be overwhelmed by intense development. Therefore, in the process of maintaining or restoring the quality, volume and hydroperiod of surface waters discharged to natural systems, development should be designed to maximize the quality of surface or ground waters discharged.

If this strategy is adopted, there will remain contradictions and inconsistencies in carrying it out. This is due to the fact that other agencies and jurisdictions will still approach the problems in a different fashion or will remain tied to the "common enemy" doctrine. Substantial negotiation will be required with state and sub-state regional agencies to ensure that local standards are consistent with and either equally or more restrictive than the standards used by those agencies. In addition, Lee County will have to rely on those agencies to mediate coordination with adjacent jurisdictions to ensure that their actions do not overwhelm the natural systems with point discharges from artificial systems.² The last problem lies with the Chapter 298 Drainage Districts. Coordination of expanded services in accordance with a "natural system" method and restora-

² Coordination with municipalities is expected to be less complex as they will be contained, for the most part, in the Urban Service Areas and, therefore in the area of artificial drainage service.

ation of water tables and wetlands outside of Urban Service Areas should be required by this plan under Chapter 163 F.S.

Data Base and Methodology

This section concerning the existing conditions and needs of the community is based on an analysis of public records and documents concerning storm and surface water management policy in Lee County. Data were compiled and graphically depicted as maps of natural drainage basins, and man-made drainage features. Maps of the U.S. Federal Emergency Management Agency delineating coastal storm surge flooding were also consulted. Reports and documents consulted also included materials from the South Florida Water Management District, engineering and planning consultants to the Lee County Division of Transportation/Public Works, particularly Johnson Engineering Co., the Southwest Florida Regional Planning Council and agencies of the State of Florida and United States. (See Illustration #10)

These sources were compared and contrasted, in relation to the conflicting needs of removing waters from densely occupied areas and maintaining the quality, quantity, and timing of waters discharged to sensitive wetland ecosystems. Overall, a body of policy was derived which seeks to balance these competing interests.

Needs

The needs of the communities of Lee County in relation to storm and surface water management are:

1. to provide continued management and improvement of traditional drainage infrastructure, particularly in areas of intense land use;
2. to protect freshwater, estuarine, and marine ecosystems from pollution and hydrologic disruption and subsequent destruction;
3. to provide a workable surface water management scheme for areas outside the urban areas;
4. to conserve and rationally utilize surplus storm and surface water; and
5. to manage and conserve infrastructure to minimize the cost of public services.

B. CAPITAL IMPROVEMENTS

Priorities - General

Specific capital improvements for surface water management will be prioritized in accordance with the relative severity of the surface water problems at specific locations. The highest priority is assigned to those improvements in the existing developed areas where facilities are inadequate to handle any flooding which is a threat to the public health, safety and welfare.

Costs

The fundamental underlying fiscal strategy of this subelement is to minimize the impact of surface water management on the public. This is realized by requiring, insofar as it is feasible, that storm water management be accomplished on-site on a

development by development basis. Where cumulative spillover becomes significant, specific improvements to the public system will be designed and constructed and their costs assessed to the properties benefitted. The main exception to this is the authorization to use general revenue funds for such improvements that can be assumed to provide general benefits.

Where a surface water management strategy is implemented through the reservation and dedication of wetlands for water management, through restriction of development in wetlands, near stream banks and coastal areas, and through special building requirements in flood prone areas the costs of water management become an internalized charge of between \$2000 and \$20,000 per acre.

Proposed Funding Sources

The several potential sources of fiscal support for surface water management include:

- (1) development specific improvements including reservation of wetlands;
- (2) special assessment of benefitted properties; and
- (3) where benefits are general to the community, general fund monies (ad valorem revenues).

Priorities - Specific

Within the first five years of this plan, Lee County has identified two major projects and has set their priority over all other possible surface water management projects within its jurisdiction. These are:

(1) Winkler Canal in Fort Myers

Improvements to Winkler Canal running from Evans Avenue to Caloosahatchee River. Funded from ad valorem. Construction in fiscal year 1985-6.

(2) Powell Creek Drainage Improvements

Miscellaneous improvements to area of N. Ft. Myers in the Powell Creek drainage basin. Funded through special assessment of benefitted properties. Project to run through 1984-5.

(3) Lakes Park Watershed Protection

C. SURFACE WATER MANAGEMENT SUB-ELEMENT GOALS, OBJECTIVES AND POLICIES

Goal VII.L: To ensure the health and safety of the public water run-off by providing for the management of storm and the removal of flood waters from areas of intense use and occupation.

Obj. VII.L: Develop a coordinated system of infrastructure for managing storm and remaining flood waters in areas of intense use and occupation, while providing for the conservation of water and the natural environment.

Policy VII.L.1. The County shall develop a comprehensive plan for coordinated surface water management system for the Urban Service Areas using "best management practice" drainage techniques.

Policy VII.L.2(a): General Tax Revenue shall be expended for storm water management systems in the Urban Service Areas only.

Policy VII.L.2(b): Storm water management systems outside of the Urban Service Areas may be funded by mechanisms such as Municipal Services Taxing Units (MSTUs) by which the fiscal burden is limited to those who benefit from the improvements.

Policy VII.L.3. Criteria shall be adopted for maintaining or reducing demand on the capacity of traditional drainage infrastructure by requiring storm water management.

Goal VII.M: To ensure that the management of surface and storm waters in the non-urban areas is carried out with minimal infrastructural investment or requirement of energy.

Obj. VII.M: Support a surface water management strategy that relies on natural features (flow ways, sloughs, strands, etc.) and natural systems to receive, detain and otherwise manage storm and surface water.

Policy VII.M.1. All development proposals outside the Urban Service Areas shall recognize areas where soils, vegetation, hydrogeology, topography and other factors indicate that water has flowed or ponded; and require that these areas be utilized to the maximum extent possible, without significant structural alteration for on-site storm water management; and require that these areas be integrated into area wide coordinated storm water management schemes.

Policy VII.M.2. Where no natural features of flow or ponding exist on a site outside the Urban Service Areas, the County shall require that water management structures be designed and constructed in such a manner as to imitate natural systems. Special engineering and design standards for such structures shall be incorporated into revised Development Standards by ordinance.

Policy VII.M.3. Outside the Urban Service Areas where traditional drainage structures exist (ditches, canals, dikes, etc.), the County may permit their continued existence and maintenance, but shall discourage their expansion or extension.

Policy VII.M.4. Where feasible within Urban Service Areas, surface water management may imitate natural systems, notwithstanding the type or intensity of development permitted.

Goal VII.N: Ensure that the public and private construction, operation and maintenance of storm water management systems are consistent with the need to protect receiving waters.

Obj. VII.N: Support and encourage standards and processes of surface water management that are consistent with needs of receiving waters (wetland systems, streams, estuaries and marine environments) for the optimal hydroperiod, for low pollutant loads and optimal nutrient loads, by regulating the quality, volume and hydroperiod of discharged surface water.

Policy VII.N.1. In the Urban Service Areas, the County shall require "best management practices" be used to design and construct storm and surface water management systems to minimize the pollutant load eventually discharged to natural systems, as well as to regulate the volume and timing (hydroperiod) of storm water delivered to natural systems.

Goal VII.0: Ensure that the public and private conduct of surface and storm water management contributes to the conservation of fresh water as a future potable water supply while recognizing the need to preserve flows to natural estuarine systems.

Obj. VII.0: Support and encourage standards and processes of surface water management that conserve storm and surface waters and minimize the wasting of ground water for future potable water supply, while recognizing the need to preserve flows to natural estuarine systems.

Policy VII.0.1. The use and maintenance, or imitation of natural hydrologic features for surface water management shall be required to promote the infiltration of such water to recharge surficial or artesian aquifers.

Policy VII.0.2. Standards to insure both quality and maximum quantity of water percolating to future potable supplies shall be adopted.

D. CONSISTENCY

The Surface and Stormwater Management subelement is designed and intended to be consistent primarily with the Land Use and Conservation/Coastal Zone Management Elements, as well as the

Potable Water subelement, and through these, the remainder of the plan. This is achieved in the following manner.

This sub-element is based on the same economic and demographic assumptions as the remainder of the plan. One of two competing central issues in this element is the necessity to provide adequate drainage to an area to be developed at densities or intensities sufficient to support water, wastewater, transportation, and private commercial or industrial land uses. For this reason, traditional drainage strategies are harnessed to the Land Use Element's identification of "Urban Service Areas" and for economy's sake limited to those areas. Conversely, outside of the Urban Service Areas, the intent is to maximize the values identified by the Conservation/ Coastal Zone Management Element in various water dependent ecosystems, by limiting surface water management to use of natural features or imitations of natural features and, hopefully, their natural hydrologic characteristics. Lastly, it is suggested that potential potable water resources can be augmented by conservation of surplus surface waters.

SOLID WASTE MANAGEMENT SUB-ELEMENT

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VII - IV. SOLID WASTE MANAGEMENT SUB-ELEMENTINTRODUCTIONPurpose

Solid waste management and disposal represents a potential threat to public health and convenience, and the environment of Lee County. Improper management and disposal can have a significant negative impact on the water, air, land, and aesthetics of Lee County. Properly conducted, solid waste management can minimize these concerns and maximize service to the citizens of the County. The purpose of this sub-element is to establish a solid waste management policy which considers these negative impacts, and balances them with the need for a cost-effective system.

Existing Conditions

Solid waste includes everything discarded by people that is not carried away in water through sewers. It ranges from domestic garbage to abandoned automobiles, from lawn clippings to demolition debris, from feed-lot manure to used industrial chemicals (which may be liquid but are handled in containers as solids). To ensure the cleanliness of the community and the health of its inhabitants, the solid wastes are collected from points of production, consolidated and delivered to some point(s) of disposal or destruction. This service, although appearing to be a straight forward set of activities, is expensive, energy

intensive, and, because of the obnoxiousness of the materials handled, productive of extreme controversy in land use decision making. Good planning can only begin to deal effectively with the issues generated by it.

The basic service in solid waste management is collection. This is provided by eight garbage haulers having exclusive franchise rights within specified areas of the county and by the City of Fort Myers. Collection in the cities of Sanibel and Cape Coral is mandated by ordinance, but is provided by franchised hauler. In all cases, users are billed directly for the service. Outside of the three municipalities there is no requirement that householder or business subscribe to collection services. Householder or businesses may convey waste to the landfill themselves, and by paying a minimum or graduated tipping (dumping) fee, dispose of the trash. The result of not having mandatory collection and/or payment for collection services has been "wildcat" dumping of trash and garbage in sparsely settled areas of the County. Without incentives to use the variety of services available, many people will not transport their trash to the landfill nor pay the fees. This "negative incentive" to use solid waste services also indicates that volumes of solid waste will fluctuate with pricing, making it difficult to plan capital investment and other fiscal aspects of producing this service. In many quarters, the obvious solution is the adoption of mandatory trash/garbage collection throughout the unincorporated county. Reliance would still be placed on private sector haulers governed by either franchise agreements or service contracts with the

County. This would insure consistency of service, predictability of volumes and help to end "wildcat" dumping.

The ultimate activity in solid waste management is disposal. The method used in Lee County is sanitary landfill wherein trash etc. is placed in trenches or on an accreting face of an excavation, compressed and compacted and covered with a layer of compacted soil. Ideally, this closes the trash off from oxygen supported bacterial (aerobic) decomposition, from birds and rodents, and water. When completed or full, the landfill is closed with a cap of clay or other relatively impervious material to repel water. Also, the bottom of the landfill should be sealed with clay or a synthetic material liner to hold in contaminated water, which could otherwise seriously pollute ground or surface water. In Lee County, the so-called "Florida method" of landfill is used, where the trash and cover is mounded up from the surface (or near surface), and becomes an artificial hill. The present landfill is operated by Gulf Disposal Inc., a subsidiary of Waste Management Inc., on contract with Lee County.

The capacity the present landfill is nearly exhausted. By 1987, an expansion of the existing landfill on its present site will have to be authorized, a new landfill site will have to be designated or some alternative method of disposal will have to be found. Recent attempts to expand the capacity of the existing landfill have met resistance from adjacent property owners and advocates of environmental quality. As this only presages the controversy that would arise from the attempt to locate a new landfill, some other method of disposal which would at least

extend the life of the existing landfill appears to be desirable. One suggestion that appears to have merit is a technologically modern incinerator with the potential of recovering energy from the waste stream. While trash incinerators still have a negative reputation due to air pollution in the past, modern incinerator technologies with controlled air charging and electrostatic precipitators can have relatively little impact on air quality. In addition, the heat liberated can be used to generate electricity for internal use or sale to local utilities. The major drawback of such a massive capital investment is the added costs to the individual service consumer. However, when realistically compared to the increasing costs of landfill over the long run, the additional costs may not be so great.

Since the oil shortages of the early 1970's, an international trend has evolved that perceives the solid waste stream as a resource rather than a liability. Upon analyzing the solid waste stream, it has been found that our discards include ferrous metals, non-ferrous metals (particularly aluminum), paper, and plastics derived from petroleum and natural gas. The recovery and re-use or recycling of these materials on a national scale could result in energy savings measurable in the millions of tons of coal or oil as well as aggregate savings from reduced costs of solid waste management. The state has mandated that specified local jurisdictions including Lee County plan for resource recovery (Chapter 403, Florida Statutes). The resulting study and subsequent deliberations of the County's advisory Resource Recovery Task Force have concluded that:

- generally, there are insufficient markets for recovered materials;
- source separation of aluminum and sale by households to commercial recyclers is the only feasible material recovery system;
- recovery of energy for use by utilities was feasible, but;
- costs of facilities for resource recovery were not financially feasible (c. 1979).*

However, there are indicators that incineration and energy recovery may be approaching feasibility due to rising costs of landfill operations.

While the fundamental rationale for solid waste management is environmental quality, the operation of a landfill presents its own special problems for this objective. One basic problem is ground water pollution. If the landfill is not sealed at the bottom with compacted clay, or some other impervious material, fluid contaminants in the waste or water (present in the waste or leaking from top down) carrying soluble or suspended contaminants collect at the bottom of the fill and leak into ground water. This contamination of ground water by "leachate" is a fundamental problem with landfills and is considered by some authoritative sources as inevitable. The problem may become more serious if incineration is used as a disposal method. Landfill will still be required for ash, residues and material not suit-

* Lee County Resource Recovery and Management Plan, Post, Buckley, Schuh & Jernigan, Inc., May, 1979.

able for incineration. The volumes will be significantly reduced, but new chemicals will be released in the incinerator, some of which may be more dangerous than those present in unprocessed waste. A move to incineration of solid waste will require great confidence in the integrity of the landfill seals.

The second basic problem is that of visual blight, either litter from escaped materials or the very mass of the mound of waste rising above the surrounding landscape. These are generally matters of management and design, but are crucial in reducing the impacts of a very essential service upon surrounding land.

Two special issues exist in the general matter of solid waste, these being hazardous wastes and sewer sludge. There is little information concerning the kinds and volumes of hazardous waste in the local solid waste stream. In 1979, only four industrial firms were depicted as generators of solid waste, however, discounting pesticide and herbicide containers from agriculture and grounds management, household discards of paints, petrochemicals, herbicides and pesticides may be the major source of hazardous materials in the local solid waste stream. This is still open to investigation. Hazardous wastes are removed from the County by a special hauler based in Bradenton.

Insofar as sewer sludge is concerned, the County and the City of Fort Myers are exploring the opportunity to jointly develop a plant to compost this material, the resultant product to be used and/or marketed as a soil conditioner.

If Lee County does grow to a population of 525,000 people in 2005, and if solid waste is produced at a rate of 5.5 lbs./

person/day, the daily burden of collection and disposal of solid waste will be 1,444 tons/day or 527,000 tons/year. Significant public benefit would result if this volume were reduced by resource recovery, particularly of aluminum and clean newsprint, and if the twin benefits of energy recovery and bulk reduction were accomplished through incineration. This may be more than one community such as Lee County can accomplish alone, but additional opportunities exist for regional programs. Resource Recovery may be an idea whose time is not yet here, but then too, it may be just over the horizon.

Data Base and Methodology

This essay concerning the existing conditions and needs of the community is derived from a survey of public records and other documents concerning solid waste management and resource recovery generally and solid waste management and policy in Lee County specifically. These included reports, planning documents, and oral comment in public meetings of the Lee County Resource Recovery Committee, the Lee County Division of Environmental Protective Services, various State, Federal and private non-profit interest groups, and private planning and engineering consultants. Conclusions and recommendations from these sources were compared and contrasted to principles of environmental and land use planning generally and policies proposed by the draft Land Use and Conservation/Coastal Zone Management Elements and policy derived from this and good planning and administrative practice generally.

Needs

The needs of the future communities as defined by this study are generally:

1. to continue and enhance the provision of effective solid waste disposal and collection services;
2. to seek out and exploit opportunities for recycling or resource recovery;
3. to improve the general sanitation of the community; and
4. to reduce the impacts of solid waste management on natural resources particularly water and water dependent ecosystems.

Resource Recovery

The improper disposal of solid wastes has been a leading cause of environmental degradation in the country. Disposal of solid wastes in a sanitary landfill does not completely eliminate the potential for environmental quality degradation. Not only does this practice pose a potential danger, even when conducted in accordance with the best procedures, but represents a waste of recoverable materials. It is clear that the long term environmental quality and economic vitality of Lee County are not best served by the continuance of land fill as the sole method of solid waste disposal.

At this time, an alternative to burying wastes is not known. Improved methods of land filling are alternatives to present practices. Experience elsewhere has shown that even improved

methods of land filling, alone, are not a long term solution to the problem. Rather, resource recovery is the most feasible method to provide a needed long term solution.

Resource recovery requires a large volume of material at a central location in order to be feasible. Whether there is sufficient volume of solid wastes within the County and whether the volumes which do exist can be centralized are not known at this time.

Also, resource recovery technology is expensive, requiring massive capital investments in such categories as processing plants and material storage. The additional costs to the consumer are offset, to some degree, by income derived from recycled materials and energy production. As the cost of acquiring and operating landfills is expected to rise quickly in the future, the remaining additional costs may be nearly equal to resource recovery. Any remaining difference in cost represents the price required for water resources protection.

Although the feasibility of resource recovery is not presently known, it may be the only means which will be economically feasible in the long term. Lee County will have to continue land filling as a method of disposal while resource recovery is being explored. Due to the fact that this issue has not been studied, capital costs are impossible to project.

CAPITAL IMPROVEMENTS

Priorities - General

Over the time horizon contemplated in this plan, the principal priority for capital investment in solid waste facilities

shall be the establishment of a long term solution for waste disposal; either through an augmented sanitary landfill capacity alone or through incineration with resource recovery and a reduced scale of land fill.

Costs

At this time, the capital costs for solid waste management facilities are borne by the service consumer through user charges paid to private sector collection and disposal firms. The future indications are, however, weighted on the side of some public involvement. Although no firm decision has been made that Lee County shall own and/or operate a landfill or mass burn incinerator, budgetary contingencies have been made to support a major public entry into solid waste disposal. In either case, the costs of construction and operation will be defrayed from a tipping fee on each ton of waste, the charge passed back through the haulers (private firms franchised to serve a specific geographic area) to the consumers. One advantage presented by the higher cost incinerator is that additional revenues may be captured through sales of co-generated electricity and recycled materials. A resource recovery through incineration program will cost over one hundred million dollars to implement. Landfill will appear to be cheaper in direct costs but can be anticipated to generate substantial unpriced costs in environmental degradation.

Proposed Funding Sources

Acceptable funding sources for capital investments in solid waste management facilities, emphasizing reliance on user charges, include:

- 1) Tipping fees/user charges;
- 2) Grants and subsidies from other levels of government, as available;
- 3) Revenues from energy sales (assuming co-generation of electricity from incinerated waste);
- 4) Revenues from recycled materials (assuming a materials recovery program); and
- 5) Private or vendor financing.

Priorities - Specific

Within the first five years of this plan, Lee County has identified two major capital expenditures related to solid waste management and has set their priorities over all other possible public solid waste improvements in the County. These are:

- 1) New landfill facility (contingent)
Should expansion of the privately operated Gulf Coast Landfill be blocked, this would provide for land purchase and improvement of a new landfill facility of approximately 900,000 tons capacity (3 years at present rates of waste generation). Facility to be built in 1984-5 and funded from user charges.
- 2) Mass burn incineration with recovery of energy
Design and construction of a mass burn incinerator of 1000 tons per day capacity with capacity to generate electricity from heat released. Project programmed to be constructed from 1985-6 through 1988-9. Funding projected from user charges.

GOALS, OBJECTIVES AND POLICIES

Goal VII.Q.: Ensure the health and safety of the populace, and the environmental quality of the community through the management and disposal of solid waste.

Objective VII.Q.1. To provide directly, or indirectly through private service providers, solid waste collection and disposal services which are cost effective and socially and environmentally responsible.

Policy VII.Q.1. An ordinance mandating refuse and garbage collection throughout the County shall be adopted.

Policy VII.Q.2. The County shall continue to study the available technologies and economics of resource recovery and volume reduction through incineration of solid waste.

Policy VII.Q.3. Hazardous materials shall not be allowed to enter the solid waste stream. Hazardous waste generators shall be identified and the proper handling and disposal.

Objective VII.Q.2: To establish programs and policy guidance that successfully encourage the recycling of materials in the solid waste stream with corresponding reduction of the volume of refuse.

Policy VII.Q.6. The County shall establish and expand incentives and provide information to the public in order to encourage the private recycling of select high quality materials, such as aluminum, newspaper, first class wastepaper, etc.

Policy VII.Q.7. The County shall establish or encourage the establishment of resource recovery facilities for the recycling of products including paper, metal, and glass.

Objective VII.Q.3: To establish and conduct programs that reduce the volume of roadside litter and the amount of "wildcat" dumping in the unincorporated county.

Policy VII.Q.11. The County shall establish a "clean community" campaign of education and information to reduce litter. Participation shall be solicited from major sources of litter materials such as fast food franchisers and convenience market operators.

CONSISTENCY

This subelement is designated and intended to be consistent primarily with the Conservation/Coastal Zone Management Element as well as other subelements of this Community Facilities and Services Element, and through these the remainder of the plan.

The essence of Solid Waste Management is to provide a public service while ensuring a high level of protection for environmental values. With the major exception of the disposal facilities, solid waste management does not require a substantial fixed investment and consistency with Land Use Plans is ensured through land use and environmental regulation. Further, the differentiation of Urban versus non-urban service areas provides an economically sound opportunity for reducing the total costs of the service. Again, this element is founded upon the same economic and demographic assumptions as the rest of the plan.

ELECTRIC POWER SUB-ELEMENT

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VII-V. ELECTRIC POWER SUB-ELEMENTINTRODUCTIONPurpose and Requirements

The Florida Local Government Comprehensive Planning Act (Chapter 75-257, Laws of Florida) requires that a local government's comprehensive plan contain:

A utility element in conformance with the 10-year site plan required by the Florida Electrical Power Plan Siting Act in Part II of Chapter 403 [sic; this requirement is now found at § 23.0191, F.S.]. [§ 163.3177(6)(i), Florida Statutes].

This Electric Power Sub-element is intended to satisfy that requirement.

The purpose of the Electric Power Sub-element is to ensure that local plans are consistent with the current Ten Year Power Plant Site Plan of the Florida Power & Light Co. as approved by the Florida State Department of Community Affairs which effectively preempts local land use and environmental regulation for power generating facilities. However, this leaves open the opportunity to address other issues within the power of local government to assist the electric utilities in achieving their goals as well as protecting the public interest generally.

Existing Conditions

Electric power is delivered to consumers by two utilities; Florida Power & Light Co., and the Lee County Electric Cooper-

ative. (see map of service areas and major facilities). The Florida Power & Light Co. is however the sole producer of power, the main supply of which, for Lee County, is the Fort Myers Generating Station at the Caloosahatchee/Orange River confluence 8 miles east of Fort Myers. This facility is equipped with two fossil steam generators and twelve (12) combustion turbines producing a total of 1,337 kw (rated Winter Net Capability). Fuel for this facility consists of heavy and light fuel oil (bunder) delivered to the station by barge. Fuel is furnished by Belcher Oil Co. from its depot on the southern tip of Gasparilla Island (Port Boca Grande). No fuel alternatives are suggested. Florida Power and Light Company has submitted a Ten Year Power Plant Site Plan to the Florida Department of Community Affairs.* This plan does not project the need for additional generating capacity to be built in Lee County, but rather identifies a site in Martin County for two 700 MW coal fired steam generators adjacent to two existing 783 MW oil fired generators. A second site for additional future capacity is identified in DeSoto County. No changes are proposed for the 1,176 MW generating complex in Lee County.

Lee County Electric Cooperative is often referred to as the largest rural electric cooperative in the world (in geographic

* 1983-1992, dated April 1, 1983.

extent). However, Lee County Coop is solely a distributor of power from the regional grid; the firm has no generating capacity. Still, the firm's activities create land use and environmental impacts, which, with other issues, require public scrutiny and create implications for public policy.

Florida Power & Light's projections of growth are based on their entire service area which covers the entire east coast of Florida (except Duval County) from Nassau, Baker, and Columbia Counties south and the west coast from Manatee County south. Population projections which underlie electrical power demand estimates cannot be disaggregated; therefore, it must be assumed that they are consistent in the short run with the projections underlying this plan and that sufficient generating and distribution capacity is provided for. The short range of both utilities' planning and the requirement of annual reiterations of the site planning process provides for sufficient corrective leeway.

The local government's obligation in the joint planning process appears to be to accommodate the utility's approved plan, given its regional or state wide implications. However, several issues are identifiable that remain to the local jurisdiction. These issues overlap questions treated in other elements of this general plan such as Conservation/Coastal Zone Management and Land Use. These treat particularly the impacts of utility structures and land uses on other land uses and wildlife. Also, the local government, through its building codes and development standards, is in an unique position to assist the utility in reducing demand and increasing the effective range of its capital investment.

Data Base and Methodology

This essay concerning the existing conditions and needs of both the community and its electric power suppliers is derived primarily from general planning principles, the Ten Year Power Plant Site Plan, 1983-1992 of Florida Power & Light Co. and various communications with the engineering department of the Lee County Electric Cooperative Inc. Policy implications relating to land use and environmental issues were identified and policy derived from these and good planning and administrative practice.

Needs

The needs of the future community as defined in this study are:

1. to protect local land use and environmental qualities from adverse impacts of the generation and distribution of electric power; and
2. to assist, as far as it lies within the County's power, in reducing demand for electricity thereby conserving energy and capital.

The following policies are intended to satisfy these needs in an efficient and effective manner.

GOALS, OBJECTIVES AND POLICIES

Goal VII.S: To assist the electric power utilities in achieving their objective(s) of providing ". . . an

adequate and reliable electric power supply for its customers as economically as possible with due regard to environmental and other established guidelines and policies."*

Obj.VII.S.1: To protect local land uses and environmental quality from the impacts of electric power facilities through reasonable standards of design and construction.

Policy VII.S.1. Insofar as it lies within its regulatory authority, the County shall ensure that sufficient land is available for the erection of electric power facilities.

Policy VII.S.2. Where conflict or incompatibility occurs between power facilities and adjacent land uses, the County shall require that compatible design criteria, landscaping and buffering be invoked to protect those adjacent land uses.

*FP&L Ten Year Power Plant Site Plan, 1983-1992, Apl. 1, 1983, p.3.

Policy VII.S.3. The County shall encourage that power line easements or rights-of-way be designed for multiple use consistent with the type of area; e.g. recreation and transportation in the urban areas or agriculture, wildlife management or recreation in non-urban areas, if feasible and safe.

Policy VII.S.4. The County shall require that in the non-urban areas, power line easements shall be designed so that:

- service trails not impede or divert surface water flow; and
- secondary land uses, including recreation, agriculture, and wildlife management, will not be unnecessarily inhibited or prohibited.

Policy VII.S.5. The County shall maintain a cooperative program of information exchange with the local electric utilities.

Obj. VII.S.2: To contribute to the reduction of future demand for electric power through regulatory means available only to local authority.

Policy VII.S.6. The County shall adopt or amend existing building, electrical, and plumbing codes and develop-

ment standards to promote energy efficient design of buildings and sites, to require the use of energy efficient appliances and to encourage the use of alternate energy sources in new development, in renovation, and replacement.

CONSISTENCY

Good planning practice, as well as State statute, demands internal consistency of any comprehensive plan. The Electric Power Sub-element is intended to assure consistency between a local government comprehensive plan and an electric generating utility's Ten Year Power Plant Site Plan. In this case, the plan goes a step beyond the mandatory requirements and identifies certain fundamental connection between the distribution of electric power and Land Use and environmental policy generally. Policy is suggested that implies at least these connections to the Land Use, Conservation/Coastal Zone, and Housing Elements.

DISASTER PREPAREDNESS SUB-ELEMENT

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VII-VI. DISASTER PREPAREDNESS SUB-ELEMENTINTRODUCTIONPurpose and Requirements

The Florida Local Government Comprehensive Planning Act (Chapter 75-257, Laws of Florida) provides authority for a local government comprehensive plan to:

(7) . . . include the following additional elements, or portions or phases thereof:

(i) A safety element for the protection of residents and property of the area from fire, hurricane, or man-made or natural catastrophe, including such necessary features for protection as evacuation routes and their control in an emergency, water supply requirements, minimum road widths, clearances around and elevations of structures, and similar matters. [§ 163.3177(7)(i), Florida Statutes]

It was the decision of the Lee County Board of County Commissioners to limit this sub-element to those matters emanating directly from the hazard of hurricane and tropical storm. The purpose of this element is to identify those measures that the County intends to take to avoid the loss of life in the event of a hurricane or other major storm.

Existing Conditions

Historically, hurricanes have caused significant property damage and loss of life in South Florida. The potential problem is of such magnitude that the Southwest Florida Regional Planning Council recently completed one of the nation's first hurricane evacuation plans.¹ This plan focuses on evacuation routing and

¹ Southwest Florida Regional Hurricane Evacuation Plan, 1981 and Hurricane Evacuation Plan Update 1983, 1983.

the provision of public shelters and contains numerous recommendations pertaining to current County operations. The Council in subsequent studies adopted growth management policies and recommended these policies to its member governments.

In the preparation of this hurricane evacuation element for the Lee County Comprehensive Plan the current conditions affecting Lee County's Hurricane evacuation capabilities have been assessed. The extent to which the County has hurricane evacuation programs and policies is identified and the extent to which these address adopted Regional Council policies and adopted Plan recommendations is discussed. This Comprehensive Plan element by and large incorporates unchanged the recommendations of these hurricane evacuation planning studies.

Hurricanes have the potential to cause widespread injury and property damage in Lee County. Hurricane Donna (1960) was the last major storm to have hit the County. It passed over Lee, Collier, and Charlotte Counties. Peak tides of 17 feet were recorded in the Everglades with inundation of areas six to ten miles inland. In those three counties alone, the storm damaged more than 5,000 buildings and left 26 million dollars in damage. Statewide, the storm claimed thirteen (13) lives and left \$86 million in property damage.²

² Southwest Florida Hurricane Loss Study, 1982, Executive Summary (SWFRPC, Nov. 1982) p.10.

Damage and loss of life due to hurricanes could be much more severe. The Southwest Florida Regional Planning Council study estimates that the monetary damage in the region would be 16 to 25 times greater than sustained in 1960.³ For that reason, and others, the National Hurricane Center advises the evacuation of low lying coastal areas. Thus, all of the barrier islands and other Gulf Shore areas are subject to evacuation orders which may be given by the State, County, or Municipalities. In the event of a Category 1 or stronger storm, residents in those areas in the path of the storm, would be asked to evacuate.

The original Regional Hurricane Evacuation Plan has identified those routes which would have to be relied upon in the event of a hurricane (See Map 1). This map shows routes which allow evacuation to be completed in an orderly fashion in the least possible amount of time. Specific roadway capacities vary depending on physical conditions and may be particularly constrained at intersections. Those locations where important traffic capacity constraints exist, will limit the maximum flow that may be accommodated. Locations where this occurs are indicated by the square symbols on the evacuation route map.

An important factor considered in route designation is the potential for inundation of the road due to heavy rainfall and/or tidal surges which frequently occur several hours before landfall. This is a likely possibility because many coastal roads and low lying bridge approaches exist in the County. The following table

³ Ibid.

(next page) indicates that this is a particularly serious problem in certain parts of Lee County. Evacuation planning must allow enough time for vehicles to pass over these low lying locations before flooding occurs. More time must be allowed if large populations are to be evacuated and only one evacuation route is available.

In estimating evacuation time it is essential to know where people would choose to go. In 1981, the Southwest Florida Regional Planning Council study conducted a survey which indicated that upon the issuance of an Evacuation order:

- 34% of the respondents would leave the county;
- 24% would go to a public shelter;
- 21% did not know what action they would take; and
- 21% had alternate plans including staying with relative, going to a motel and so forth.

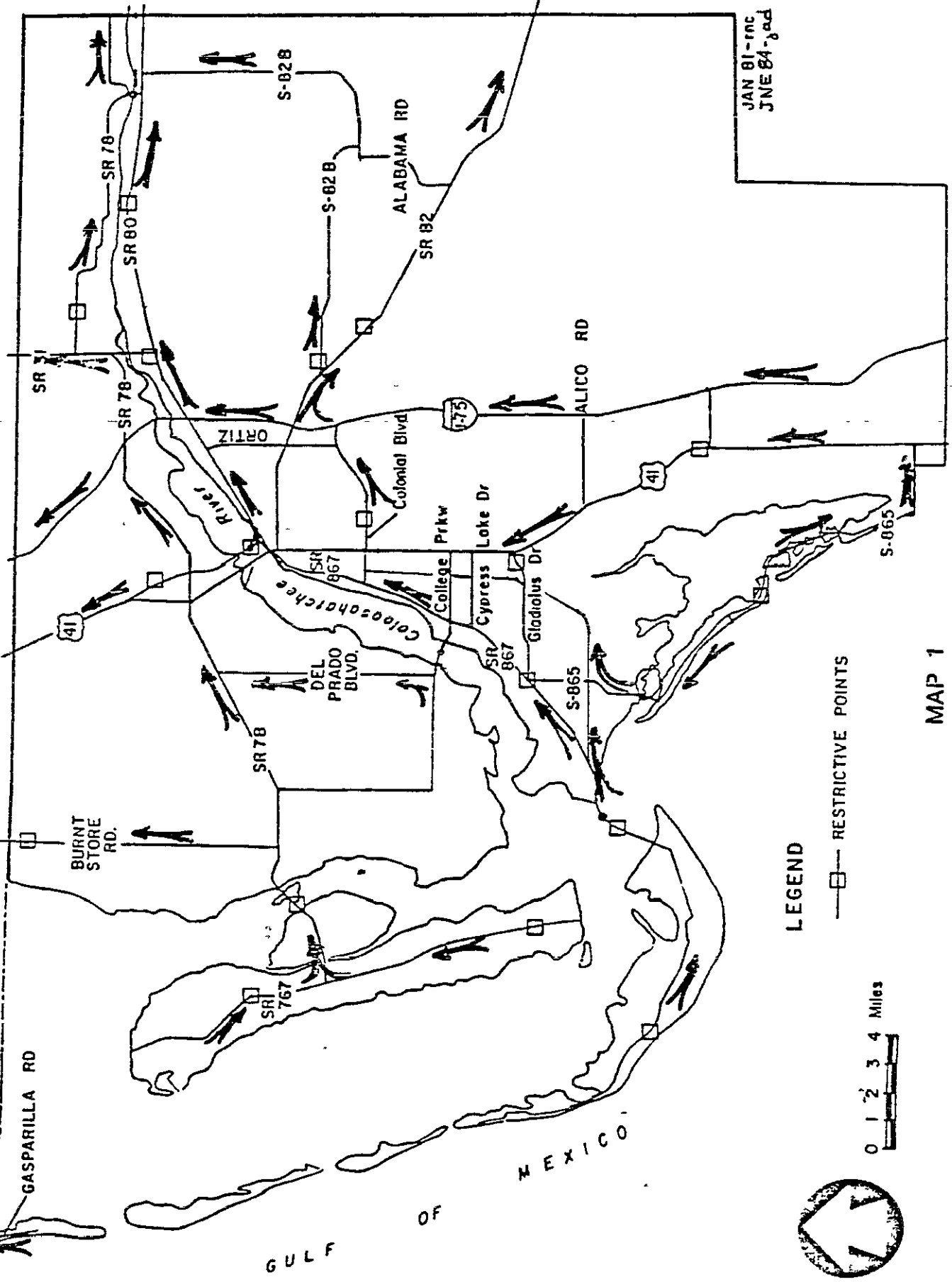
For Shelter planning, it is assumed that between 24% and 45% (21 + 24%) of the population at risk lies the contingent demand for shelter facilities in case of a tropical storm, the population at risk ranging in size in accordance with the storm intensity, etc. The evacuation routing and traffic handling capabilities influence which of the public shelters an area will be directed to use. The locations of all currently designated emergency shelters are shown on Map 3. These shelters have been inventoried to determine usable area, available emergency shelter equipment, and parking capability. The total maximum capacity of each shelter was determined by dividing by a factor of 20 square feet per person.

TABLE 1
Critical Evacuation Route and Off-Shore Points*
 (See Map 2)

<u>Location (May Key)</u>	<u>Elevation (MSL)</u>	<u>Analysis Evacuation Area Subject to Being Cutoff by Inundation</u>
Ft. Myers Bch (1)	1.0	Movement north on S.R. 865
Ft. Myers Bch Bridge (2)	1.0	Movement north on S.R. 865 to mainland
Sanibel Island (Point Ibel) (3)	1.0	Offshore point
Punta Rassa (4)	1.0	Movement north on S.R. 867
Shell Point (5)	1.0	Movement to S.R. 867
Cape Coral Pkwy. (6)	4.0	Movement north on Del Prado Pkwy.
Harney Point (7)	3.0	Movement north on Del Prado Pkwy.
Iona (8)	5.0	Movement north on S.R. 867
Caloosahatchee River, S. (9)	1.0	Movement north on U.S. 41
New Bridge (10)	5.0	Movement north on U.S. 41
East Ft. Myers (11)	15.0	Movement east on S.R. 80
Blind Pass (12)	1.0	Offshore; movement east on Periwinkle Way
Pine Island Sound (13)	1.0	Offshore
Pine Island Center (14)	5.0	Movement north on S.R. 767 and east on S.R. 78
Matlacha (15)	1.0	Movement east on S.R. 78
Burnt Store Marina (16)	1.0	Movement north on S.R. 765
Boca Grande (17)	1.0	Movement north on Gulf Blvd. & bridge to Placida (Charlotte Co. mainland)
Placida (18)	1.0	Movement north on S.R. 771
Bonita Bch/Shr (19)	2.0	Mvmt. E on SR 865, N on US 41

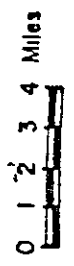
*Derived from SWFRPC, 1981, Table 1.

JAN 81 - rnc
JNE 84 - pad



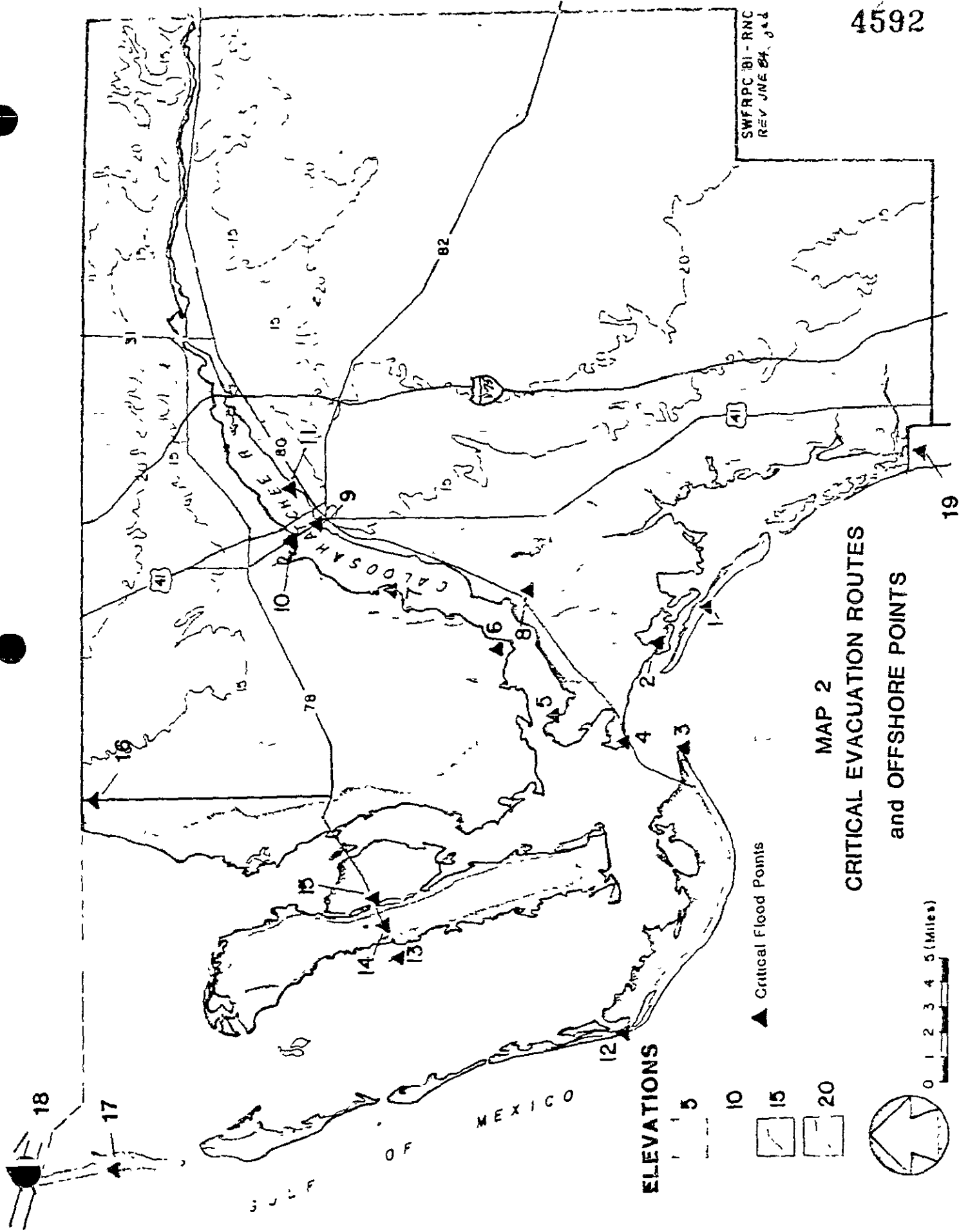
MAP 1
 EVACUATION ROUTES, AND RESTRICTIVE POINTS
 LEE COUNTY

LEGEND
 □ RESTRICTIVE POINTS



GULF OF MEXICO

SWFRPC 81 - RNC
REV JUNE 84, JLD



MAP 2
CRITICAL EVACUATION ROUTES
and OFFSHORE POINTS

TABLE 2
Shelter Capacities by Type of Storm**

<u>Category</u> <u>of Storm</u>	<u>Historical</u> <u>Probability</u>	Wind	<u>Flooding</u> <u>Threshold</u>	<u>Shelter</u> <u>Capacity</u>	<u>Shelter Demand</u>	
		<u>Speed</u> <u>(mph)</u>			<u>24%*</u>	<u>45%*</u>
1	1 in 12 yrs.	74-95	up to 9 ft	57,524	38,216	71,655
2	1 in 25 yrs.	96-110	up to 12 ft	62,370	51,229	96,055
3	1 in 50 yrs.	111-130	up to 17 ft	62,480	61,064	114,496

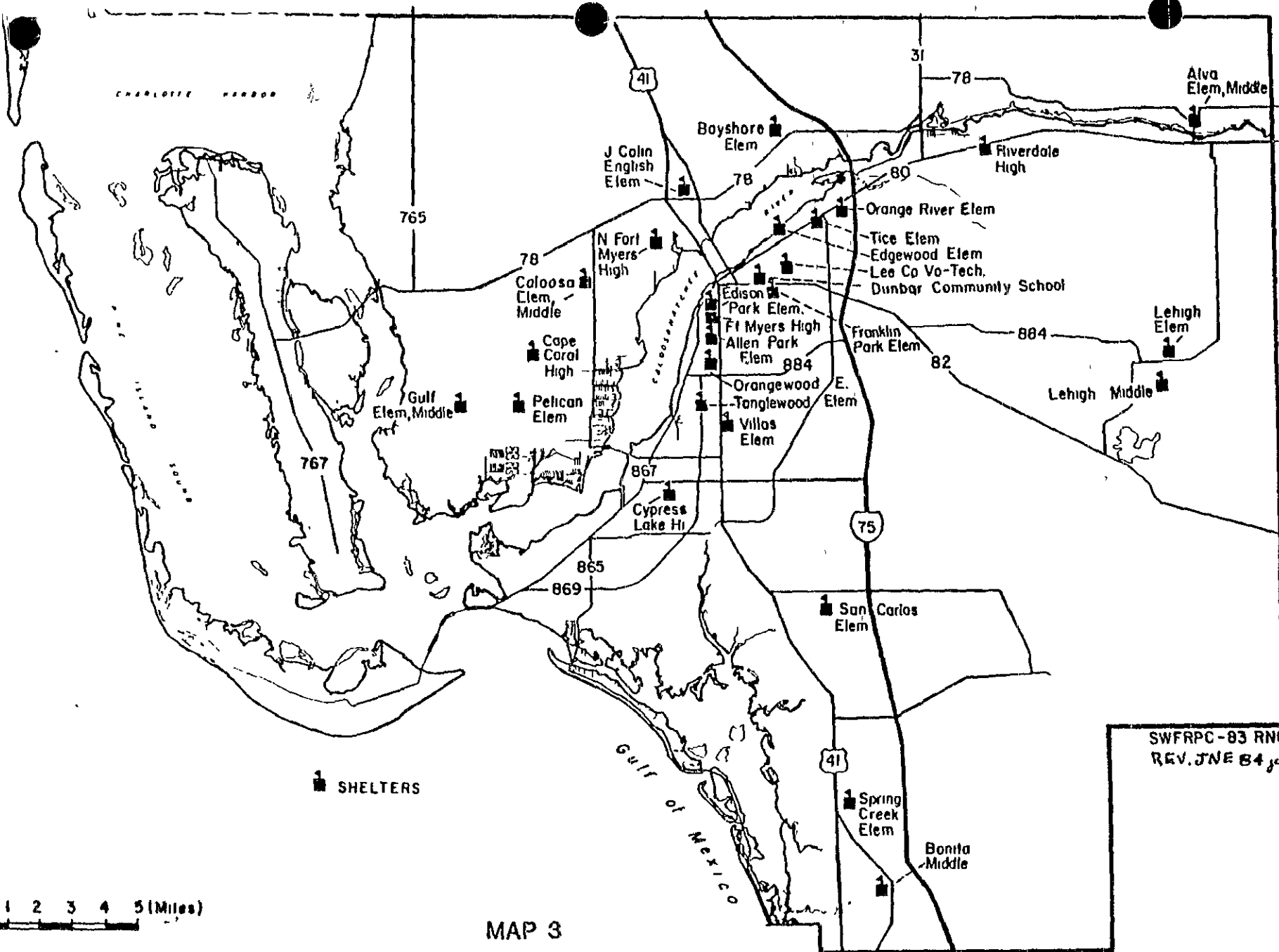
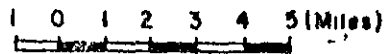
Note:

According to the Intensity of any particular storm, these numbers may be reduced. Barrier Islands may have to evacuate for virtually any storm affecting the county.

**Derived from SWFRPC, 1983, Table 18.

*Proportion of population at risk.

06 - IIA



MAP 3
EMERGENCY SHELTER LOCATIONS
LEE COUNTY

SWFRPC-83 RNC
REV. JUNE 84 jml

4594

The ability of these shelters to accommodate the evacuating population under varying storm conditions is given in the following table. It should be noted that the numbers are for the worst case scenario where the path of the hurricane passes over the area with the heaviest concentration of population. Shelter demand is assumed to range from 24% of all evacuees to a maximum of 45%, which include all those uncertain as to their destination.

The following table indicates a capacity problem during all storms if the maximum number of residents seek refuge in a public shelter. Nevertheless, absent better information, Lee County must utilize the maximum shelter demand as the basis for its contingency planning since:

1. The Regional Evacuation Plan recommends evacuees remain in their home county during Category 1, 2, and 3 storms (The road network may not have the capacity to handle heavy loading from several counties);
2. A significant proportion of those persons unsuccessful in seeking local hotel/motel accommodations might turn to the public shelters as a last resort; and
3. A large percentage of the population consists of newcomers and retirees who may have few acquaintances outside of the immediate neighborhood.

The problem of shelter capacity is compounded in that several of the most conveniently located shelters will be inadequate

to accommodate everyone who wants to go there. Furthermore, 17 of the 27 shelters are themselves located in areas potentially affected by flooding from the Category 2 or stronger storm.

In response to the threat of a hurricane or other natural disaster, Lee County has developed and adopted a state mandated Peacetime Emergency Plan. This Plan sets forth the responsibilities of County departments and other organizations in the event of a natural disaster. This plan focuses on the procedures for the control of emergency resources; warning and communications operations; emergency purchasing procedures and report procedures to State and Federal agencies. This plan contains a section giving general hurricane evacuation directions and includes a list of available hurricane shelters. Implementing this plan in conjunction with the Regional Hurricane Evacuation Plan should ensure effective operation in the event of a natural disaster such as a tropical storm or hurricane.

Data Base and Methodology

This essay concerning the existing conditions of needs of the community is based mainly on the regional hurricane evacuation and disaster mitigation plans of the Southwest Florida Regional Planning Council. This source was augmented with information from the South Florida Water Management District, the U.S. Army Corps of Engineers (USACE) and the U.S. Federal Emergency Management Agency (FEMA), including draft flood insurance maps. As this sub-element is intended to provide sanction for the use of

these other plans and policy documents as if incorporated into this general plan, the reader is respectfully requested to consult those documents for details of method.

Needs

Upon examining the various source documents referred to above the following needs of the future community were defined:

1. the consistent use of storm evacuation issues in transportation planning;
2. the regulation of land use and development in a manner consistent with the limitations of the storm evacuation system;
3. the establishment of workable evacuation and storm shelter programs; and
4. the adoption and implementation of programs to reduce the risk of life and property of development in flood hazard areas, including structural requirements and regulation of development intensity.

ECONOMIC ASSUMPTIONS

During the next twenty (20) years Lee County may be called upon to accept an increase of 280,000 persons to its population. All indications are that a large proportion of this additional population, along with a substantial portion of the present population, will reside in areas which would have to be evacuated in the event of a major tropical storm.

The ability of Lee County to provide for public evacuation will effect the future costs of those roads which will be used as evacuation routes in that they will have to be elevated to a level sufficient to move traffic during a major storm.

History has shown that a storm which inflicts substantial losses will have a long term negative impact upon the local economy. Prospective residents, visitors, and businesses will tend to avoid areas that are subject to such losses. The results following the 1926 hurricane in southeastern Florida demonstrate this point. However, when an area is prepared for such events there is little long term impact. Thus, the continued economic vitality of the County will be, in part, a function of the ability to undergo a major storm with minimum losses.

In addition to protecting human life, property and economic vitality, being prepared for a natural disaster should be reflected in lower insurance costs for all property owners within the County.

GOALS, OBJECTIVES AND POLICIES

Goal VII.AA: To ensure the public safety against the effects of tropical storms and hurricanes.

Objective VII.AA To establish and maintain a system that provides a reasonable opportunity for evacuating the population that is at risk of injury or death from wind or storm surge flooding to safe or safer locations.

Policy VII.AA.1 The County shall assess the impact of all new residential developments, DCI scale or larger, upon the projected evacuation network and upon projected evacuation times and require mitigation either through structural (on-site shelter) provision or through non-structural organized mitigation methods.

Policy VII.AA.2 Transportation planning shall be consistent with the demands for timely evacuation of population at risk for the Class 3 storm where environmentally and fiscally feasible.

Policy VII.AA.3 The County, in cooperation with other public agencies and public service groups, shall institute and maintain a system of storm shelters adequate for 45% of the population at risk from the Class 3 storm. This requirement may be reduced by the number of persons provided shelter on-site in their development or neighborhood.

Policy VII.AA.4 The County shall adopt the minimum standards for public and on-site shelters.

Policy VII.AA.5 The County shall require that all new Mobile Home Developments and Recreational Vehicle Developments (where permanent emplacement is permitted)

of 50 units or more (cumulative) provide standard on-site shelter for 45% of their potential population. Shelters shall be elevated to a minimum height equal to or above worst case category 3 storm flooding level, utilizing the National Weather Service storm surge model "SLOSH."

Policy VII.AA.6 The County shall recommend that each residential development of 50 units or more establish a homeowners' or residents' association to provide information to residents concerning hurricane evacuation, shelters, etc.

Policy VII.AA.7 The Lee County Peacetime Emergency Plan shall be used as the operational guide in preparation for, in response to and for the recovery from, a tropical storm or hurricane event requiring emergency actions by local government officials.

Policy VII.AA.8 The County, in cooperation with local news media, educational institutions, public service groups, and other agencies, shall implement a program of education and information describing the risks of environmental hazards such as hurricanes and other tropical storms, severe thunderstorms, tornadoes, lightning, and freezes, as well as the actions necessary to mitigate the dangers which these hazards present.

Policy VII.AA.9 The County shall establish and maintain an Emergency Facility/Site Survey (EF/SS) describing those facilities and sites designated to serve as local, state or federally sponsored emergency assistance locations; examples of such facilities include emergency shelters, disaster assistance centers, disaster field offices, temporary housing sites, and debris disposal locations.

Policy VII.AA.10 The County shall update the Lee County Hurricane Evacuation Plan on January 1st and June 1st of each year, and maintain it according to the formulas and methodologies contained in the most current Southwest Florida Regional Hurricane Evacuation Plan.

Goal VII.BB: To minimize the future loss of property from the impacts of tropical storms and hurricanes.

Obj. VII.BB: To establish programs of incentives and regulation that prevent the placement of private or public investment in locations of high risk of damage or destruction from the effects of tropical storms and hurricanes.

Policy VII.BB.1 The County shall adopt a Coastal Flood mitigation ordinance acceptable to the Federal Emergency Management Administration.

Policy VII.BB.2 The County shall not permit new or expanded mobile home or recreational vehicle development on barrier islands or in Coastal High Hazard Areas (V Zones) as designated on the adopted Flood Insurance Rate Maps (FIRM) for Lee County.

Policy VII.BB.3 The County shall review and revise as necessary all development regulations to establish standards for development in flood prone areas that reduce the potential for loss of life or property due to hurricanes.

CONSISTENCY

Good planning practice, as well as State statute, demands internal consistency of any comprehensive plan. However, the objective of the Disaster Preparedness Sub-element is to ensure that this general plan and independently developed disaster evacuation, shelter, and mitigation plans are mutually consistent.

Examination of all other relevant policy (Land Use, Conservation and Coastal Zone Management, Traffic Circulation, Housing and Intergovernmental Coordination) reveals no points of inconsistency. Points of positive relationship, wherein the Disaster Preparedness Sub-element expands upon or implements policy established elsewhere exist in Land Use, Conservation/Coastal Zone Management and Intergovernmental Coordination. Such relationship with Traffic Circulation must be inferred where that element

yields the burden of consistency to other element. In addition, policy set forth in the Education section of the Community Services sub-element calls for capital investments to upgrade school buildings used or planned as storm shelter. The remaining policy set forth under Disaster Preparedness is directly implementation or reference to operational plans.

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COMMUNITY SERVICES

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VII-VII. COMMUNITY SERVICESINTRODUCTIONPurpose and Requirement

The Florida Local Government Comprehensive Planning Act (Chapter 75-257, Laws of Florida) provides authority to include in a local comprehensive plan:

(7) . . . additional elements, or portions or phases thereof: [including]

(e) A public services and facilities element, not including . . . [that] which is required under paragraph (6)(c) or . . . paragraph (6)(i), [and]

(f) A public buildings and related facilities element showing locations and arrangements of civic and community centers, public schools, hospitals, libraries, police and fire stations, and other public buildings. This plan element should show particularly how it is proposed to effect coordination with governmental units, such as school boards or hospital authority, housing public development and service responsibilities, capabilities, and patented but not having land development regulatory authority [§ 163.3177 (7)(e) and (7)(f), Florida Statutes].

The purpose of this Community Services sub-element of the Lee County Comprehensive Plan is to provide for the development of policy regarding a select set of public services not otherwise treated, which have implications for other areas of the general plan. These services are generally producers of intangible (or less tangible) goods or are less capital intensive than water, wastewater, solid waste, etc. Frequently, they are not produced by the general purpose government, Lee County, but by Constitutional Officers, agencies of state and federal government, special districts or by quasi-public and private organizations, the County playing a secondary role or no role in their pro-

duction. There is no intent herein to preempt the planning powers or independence of Constitutional Officers, special districts and other organizations. Rather, the intent is to make explicit the issues arising in providing those services that concern the County and to establish the grounds upon which operative policy for coordination, collaboration or intervention may be formulated.

After some consideration of the issues and available resources, the Lee County Board of County Commissioners on the advice of staff chose to study five service areas where issues were most crucial or where the County had a dominant role in production. The services examined herein and their principle providers are:

<u>Service</u>	<u>Principal Provider</u>
Libraries	Lee County Board of County Commissioners
Fire Protection	Various special districts
Education	Lee County Board of Education
Health & Emergency Medical Services	Lee Memorial Hospital Board, private hospitals, Lee County Board of County Commissioners
Police & Justice	Various; Lee County Sheriff, officers of 20th Judicial Circuit of Florida, etc.

LIBRARIESExisting Conditions

Public libraries are the depositories of information and ideas useful to the entire community. Although few communities have the resources to maintain collections which foster basic research in every topic, a community with the financial and human resources found in Lee County can, and should, expect to have a public library system which maintains an accessible body of information adequate for the needs of the community.

Public libraries provide a host of services, but five main functions are readily apparent: 1) Education; 2) Information; 3) Research Assistance; 4) Recreation; and 5) Special services.

The function of libraries in the education activities of any community, at its minimum, consists of maintaining an information base and teaching people how to use it. The range of educational opportunity in Lee County has expanded over the years to the extent that a limited number of undergraduate college degrees and graduate programs are available from the University of South Florida at Fort Myers. In addition, significant numbers of local residents commute to campuses in other areas of the State for programs of study and professional development. It is apparent that demand for education oriented library services from primary through graduate school levels exists, but it is not apparent how it is going to be met. First, growth has overtaken the community's institutions, both in the absolute magnitude of the population and the economic and cultural sophistication of that population. Thus, many institutions are new and libraries have not had the opportunity to accumulate large and broad collec-

tions. Second, it does not appear appropriate to rely on local institutions of higher education to provide local library services. These entities operate under their own budget constraints and seek to fulfill their own institutional goals in developing their collections.

Libraries also provide a wide range of information services to the general public. This often results from the library's being a repository for government documents and publications for both reference and distribution. However, libraries are frequently utilized by government agencies as a means of communicating with their constituencies: for example, by depositing copies of draft comprehensive plans for public review and reference. This function is rounded out by a library's furnishing meeting space, by sponsoring public discussions or seminars.

Research assistance covers services furnished to individuals, businesses, governments, and others who require information for decision making, and for other purposes. The main service is provided by assembling and maintaining reference materials; standard works such as dictionaries, encyclopedias and indexes, business, economic and demographic data, serials and periodicals of special interest, and special collections, particularly of local and regional history and geneology. For the new institution, much of this will be on microfilm or fiche which is not only more economical, but easily and quickly acquired on demand. Other assistance to includes answering specific inquiries, 38,000 in 1983*, many by telephone, and temporarily

* Lee County, Florida Program Performance Budget 1983-84

acquiring additional materials from inter-library loan consortiums. Due to the costs of material and specialized personnel, this service is generally provided by one central facility, although the growth of a second central city may warrant a well-equipped satellite.

Recreation may be the most readily recognized function of libraries. This includes access to film programs, and to phonograph records, tapes, and soon, digital video and audio disks, as well as books and magazines. These needs are frequently satisfied by branch libraries whose collections are biased in this direction and generally away from reference services.

Special services include the outreach services and special materials which libraries provide to those with impaired access to conventional materials, including the young, the elderly, shut-ins, and the handicapped. For these persons, libraries can make an additional effort, by operating a bookmobile to reach the mobility-impaired, by keeping a collection of large print books, and distributing books in braille, talking books, and cassettes in conjunction with the State Regional Library for the Blind and Physically Handicapped at Daytona Beach.

The Lee County Public Library serves all of Lee County except Fort Myers Beach and the City of Sanibel, which have separate taxing authorities to support their own libraries. The system currently consists of a 24,000 square foot main library in downtown Fort Myers and seven branches throughout the County. The Bonita Springs branch was recently enlarged to over 4 times its original area. The Dunbar Jupiter Hammon branch had been

renovated, but has since suffered vandalism and will require substantial repair. A 4000 square foot North Fort Myers branch was opened in 1980.

Two of the system's branches are scheduled for replacement during the 1983-84 fiscal year: a new branch in Cape Coral for which \$1.2 million has been appropriated for building and furnishings, and a new facility on Pine Island. No expansion is currently contemplated for the Lehigh Acres and Captiva branches. The main library should not require expansion at least during the next five years the addition of two new branches has been proposed. The first would be located on the County's Rutenberg Park to serve the rapidly growing South Fort Myers/Iona area. It is suggested that the facility be housed in a low-cost portable structure of approximately 4,000 square feet. The second branch expansion is recommended for East Fort Myers, also in a portable structure, to serve the area between the main library and Lehigh Acres. No site has been designated.

The system currently employs the full-time equivalent of 33.25 employees, both professional and non-professional. Volunteers, many of them retired, donated a total of 34,716 hours of work during FY 1982-83, or the equivalent of 20.50 full-time employees, according to County OMB standards. This substantial gift of free time allows the system to function at a much lower cost to taxpayers than libraries of equivalent size and budget, particularly those outside Florida. The American Library Association recommends a standard of one library employee per 2000 citizens served. Lee County's library system falls below this

mark by approximately 50 percent, even with the large amount of volunteer assistance.

The Lee County Public Library system has a catalogue of 214,741 volumes as of December 1, 1983. The total collection, including audio-visual titles and microforms, numbers approximately 260,000, or about 1.2 items for each permanent resident in the service area. The American Library Association (ALA) and the Florida Library Association (FLA) suggest 2.5 volumes per capita as the minimum size of a well-equipped public library. The Lee County system fails to reach even half this guideline. It falls far below the Florida average of 1.55 items per capita and below the ratio of most Florida counties of similar size and economic conditions.

Despite the system's obvious weakness, the demand for books and other articles from the Lee County system appears stronger than the Florida average. In FY 1981-82 per capita circulation was a surprisingly high 4.44. This figure does not take into account the number of reference works and periodicals consulted, but not checked out, nor does it consider research assistance provided or questions answered by staff. The staff performed a task seldom seen in Florida public libraries - they circulated more than one million volumes at an operating cost of less than \$800,000.

Libraries are vital public assets and not frivolous civic ornaments. They are essential to the research needs of business and government and vital to the encouragement of entrepreneurship, individual scholarship, and literacy itself. The degree

and quality of their provision is often an indicator of the quality of life in a community. No public expenditure produces so great a benefit to the community as a whole and at such a small expense as the funds spent on libraries, nor does any public enterprise serve so broad a cross-section of the community, from elementary school children to retirees.

Other Florida communities have recognized their obligation to the dissemination of knowledge and ideas. Among neighboring counties and counties of similar size and economic condition, Lee County is far behind in virtually every category of statistical comparison. Statistics cannot tell the whole story and no library system deserves to be judged solely on the weight of one or two numerical measurements. Still, when viewed as a whole, the numbers betray a chronic weakness in the system produced by default in the face of overwhelming growth. The collection is too small for the population served; the size of the staff, even when supplemented by volunteers, is inadequate; acquisitions have not kept pace with growth of population.

It may not be reasonable to uncritically apply the ALA/FLA standards to Lee County or other fast-growing Florida communities. The original library collection was assembled to accommodate the needs of a much smaller population. Older, more established public libraries, particularly those in the urban areas of the Northeast and Midwest, benefit from a core of books accumulated over decades. These volumes, many of them out of print, cannot be obtained without great expense by a system determined to expand its holdings. The effectiveness of the collection is

further weakened by the rapidly expanding population of the County. To bring the collection up to ALA/FLA guidelines would mean the acquisition, cataloguing, and shelving of more than 300,000 volumes and the addition of thousands more volumes every year thereafter as long as the current rate of growth continues. It appears, therefore, that the systemwide rate of acquisition should increase substantially if the library system is to provide for the information needs of Lee County residents. The magnitude of the task is reduced in part by the many donated volumes received each year. Donated volumes must be carefully screened to assure balance and avoid duplication, but they can provide an excellent, if uneven, core of books no longer in print. The majority of acquisitions, however, must come from direct purchase. It would be advisable for the library system to increase the size of the collection during the next five years to achieve a system standard at 1.5 items per capita. This falls far below the ratios in Brevard, Charlotte, Hendry/Glades, and Volusia Counties, but compares respectably with the catalogues of Sarasota and Manatee Counties. This objective is realistic in recognizing the impossibility of reaching the national standard at any time in the near future. However, this standard, 2.5 volumes per capita, should remain as a long term goal.

It is recommended that the governors of the Lee County Public Library System recognize a dual service obligation. First, the main library should acquire and maintain a standard collection of research materials to serve the needs of business, government, students, and other individuals. While Lee County

may not wish to support a library of the size and scope of a major metropolitan or university system, Lee County can provide a library which encourages individual learning and offers for public use information which may now require citizens to travel more than one hundred miles to acquire. Second, the county system should continue its commitment to neighborhood-based branches which serve local needs and reading interests. Circulation figures demonstrate that these facilities have enjoyed wide use and popular support, particularly among retired persons.

FIRE PROTECTION

The responsibility for fire prevention and suppression services in Lee County is divided among twenty (20) jurisdictions. Among these are the cities of Fort Myers and Cape Coral and sixteen special use or assessment districts established by the Florida Legislature for fire protection and rescue.* These provide geographic coverage for approximately 85% of the land area of the county. Fire protection for the remainder of the county is the responsibility of the Board of County Commissioners and the State Division of Forestry. (See Illustration #11)

Although a detailed history of the evolution of the organization of fire protection in unincorporated Lee County is not available, it appears that beginning with the Boca Grande district in 1943, the Florida Legislature has adopted special acts to create districts where and when sufficient growth, both of demand and fiscal capacity, has occurred to justify a higher level of service and a greater degree of local control than could be obtained from the county system. By 1975, there were nine independent districts in addition to a Lee County fire department

* Fire protection in the City of Sanibel is provided by an overlapping but independent fire protection district.

serving suburban parts of Fort Myers and isolated communities. In 1976, responding to a perception that the County was either unable or unwilling to provide an acceptable level of service, the legislature created seven additional districts in generally rural areas of the county, establishing the organizational structure that exists today. The only active fire department presently in County service is that operated by the Division of Airports at the Southwest Florida Regional Airport (SWERAP) and Page Field.

The fifteen fire control (and rescue) districts in the unincorporated county are governed by Boards of Fire Commissioners chosen for the most part by the electors of the district. Fire Commissioners for Boca Grande, Captiva Island and North Fort Myers are appointed by the Governor of Florida. Fire commissioners serve without salary and are not required to have public safety or firefighting experience. The districts are independent special use districts and administer their own budgets based on a millage ad valorem on real property. Half of the districts, particularly those chartered in 1976, face "sunset" provisions in which the continuance of the district will be subject to referendum during a 1986 primary election.

In the areas not covered by a fire control district, the County meets its responsibilities in several ways. In areas where no established fire control district exists and the only service available is that provided by the Florida Division of Forestry, development permits are restricted. Where sufficient development pressure or actual demand for service exists, the

County usually erects a Municipal Services Taxing Unit (MSTU) to fund fire protection for a geographically delimited area. These MSTU funds may be used to support capital needs and operations of a volunteer fire company in the MSTU or to reimburse an adjacent fire district (department) for service provided under an inter-local agreement. The only fire companies actually operated by the County provide specialized fire suppression services at Page Field and the Southwest Florida Regional Airport. Given the special nature of their mission, it is not reasonable to assume them to be available for fires off the airport(s') grounds. For that area not covered by a city department, fire district or MSTU there is no service specifically for structure fires save that which adjoining district chiefs provide on their own initiative.

For woods and brush fires in all areas of the county, the State Division of Forestry has a first response responsibility. During periods of high hazard, the dry winter months, men and apparatus are dispersed throughout the district's area of responsibility (Lee, Hendry and Collier Counties) and this undoubtedly assists all other jurisdictions indirectly by protecting homes and structures in rural areas by suppressing or diverting woods fires. Conversely, many of the fire districts maintain a brush or woods fire capability as the leap frog and sprawling nature of development has left substantial areas of brush and woods within the more suburban area of settlement.

As independent and separate governments, the various fire districts are their own planning and budgeting authorities responsible to their own constituencies. So far as can be determined,

the criteria used for manpower, equipment and location of stations relate to locally satisfactory response times balanced against costs. The standards utilized in planning are generally those used by the Florida Commercial rating bureau, ISO Commercial Risk Services, Inc. (ISO) to set fire insurance premiums. The staffing, equipping and locations of fire risks (relative to water and stations) make up approximately half of the rating. Availability and sufficiency of fire flow from potable water systems make up the rest of the rating. Table 1 sets forth some data relating to fire districts which includes the ISO ratings for each. This rating, contaminated as it is with the issue of adequate fire flow, is the only readily available index of service adequacy. The first point to keep in mind when reviewing the ISO ratings for the independent fire districts is that the rating for the fire protection jurisdictions of the Cities of Fort Myers and Cape Coral are 5 and 6 respectively. In this context, the 6 and 7 ratings of the urban or urbanizing districts appears to be more than adequate and the 5 in urban Lehigh Acres is outstanding. The lower ratings are found in districts which are principally rural in character or are poorly served with urban water facilities or are mainly volunteer companies. Several districts have development plans which should move them from 6 and 7 ratings to 5 ratings in the relatively near future. In the absence of any evidence to the contrary, it must be assumed that the service provided by these fire companies is adequate.

TABLE I
GENERAL CHARACTERISTICS OF FIRE DISTRICTS

<u>DISTRICT</u>	<u>YEAR</u> <u>CHARTERED</u> ¹	<u>BUDGET</u> ²	<u>ISO RATING</u> ³	<u>MSCL.</u>
Alva	1976	\$ 133,475	10	ss
Bayshore	1976	\$ 138,173	10	ss
Boca Grande	1943	\$ 69,900	7	ap
Bonita Springs	1965	\$ 452,779	6/9	
Captiva	1955	\$ 216,801	7/9	ap
Estero	1976	\$ 170,629	10	ss
Fort Myers Beach	1951	\$1,729,031*	6/9	ss
Fort Myers Shores	1976	\$ 247,207	6/9	
Iona/McGregor	1976	\$1,499,575	7/9	
Lehigh Acres	1963	\$1,093,162	5/9	
Matlacha/Pine Is.	1963	\$ 262,236	8/9	
N. Fort Myers	1955	\$1,027,225	6/9	ap
San Carlos Park	1976	\$ 436,640	6/9	ss
South Trail	1976	\$1,534,850	6/9	ss
Tice	1976	\$ 657,704	6/9	ss
(Sanibel) ⁴	(1955)	(\$531,311)	(7/9)	
Maravilla	County MSTU	\$ 19,779	(5)	
Usseppa Is.	County MSTU	\$ 62,797	NR	
Alico Road	County MSTU	\$ 19,962	NR	
Burnt Store	County MSTU	\$ 98,948	NR	
N. Captiva Is.	County MSTU	\$ N/A	NR	
	Pending			

¹ Some districts established on the base of former County MSTUs.

² Tentative or proposed for FY 1985 (9/84) unless marked "*" which indicates adoption.

³ Ratings furnished by ISO Commercial Risk Service, Inc. as of 9/27/84. Lower numbers indicate lower levels of underwriting risk for insurers or a higher level of service. Composite ratings (6/9 for example) indicates that rating is 6 within 1,000 feet of a hydrant and less than 5 miles from a station, while for locations over 1,000 feet from the hydrant or beyond 5 miles from the station, the rating is 9.

⁴ Sanibel Island Fire Control District serves the area of the City of Sanibel; data provided for information only.

ss - subject to sunset referendum in 1986

ap - boards of fire commissioners appointed by the Governor of Florida

⁵ Service provided by the City of Fort Myers Fire Department through interlocal agreement (rated 5)

NA - Not Available

NR - Not Rated

One reason that the level of service is relatively high, in spite of the large number of independent districts, is a high level of cooperation between districts. Examples of this are mutual aid agreements which cover second or subsequent response, sharing of specialized equipment, coverage of a neighbor's territory during alarms, etc. Others include the development of a consolidated vehicle numbering system, establishment of a common protocol for tactical radio frequencies and reliance on a central dispatch system; cooperative ventures which seem to be expanding on the initiative of the various districts. The last point on which the quality of service appears to be growing is the increasing professionalization of manpower. Several districts which were once all volunteer now have a substantial paid professional cadre and some formerly mixed companies are now all professional. Some districts continue to use volunteers to augment paid personnel in order to maintain cost effectiveness. While not all districts are fully caught up in these trends, it is clear that the trends are real and that they ought to be fostered through cooperation by the County, in the absence of alternative policy.

One criticism which has been leveled at the existing organization of fire protection is that it is the most expensive way to go about providing a service that can be organized to capture "economies of scale." To the degree that certain items of overhead or internal services are duplicated, this criticism is logical. This is mitigated to some degree by the expanding sphere of cooperation, however, noninstitutionalized and dependent upon individuals this may be. The combined budgets (proposed) for

fire protection in the unincorporated county for FY 1985 (not including Fla. Div. of Forestry, County Division of Airports, or Boca Grande) totaled \$9.83 million or roughly \$60 per capita.

It is difficult to compare these numbers to the average budgets of other districts or city departments as several Lee County districts are in the process of making substantial investments in capital equipment and facilities. Also, it would be difficult to match the risks from district to district. Finally, without a well reasoned and budgeted program plan for some assumedly more efficient organization, say a County fire department or a consolidated independent fire district, the assertion that the existing system provides an adequate service at lower cost cannot be refuted. Unless it is clearly demonstrated that an alternative is more cost effective, it does not appear that alternatives will be entertained by the constituencies of these districts.

The one exception to the above emanates from the fact that eight districts are subject to a referendum on their continued operation. Should any one of these be voted out of existence, there should be a contingency plan to be put in operation to assure continuity of service and a guarantee of public safety. This seems to be a proper place for a County policy initiative.

A second criticism leveled at the existing system is that the Lee County Fire Code is inadequately or inconsistently enforced. All fire district boards were originally empowered to adopt a fire code, but only eight are explicitly tied to the Lee County Fire Code. Nevertheless, it is assumed that the Lee

County Fire Code is applicable in all areas of the unincorporated County. A memorandum of agreement in 1976 shifted the enforcement of the code to the districts and subsequently the County has not provided itself sufficient expert manpower to provide fire prevention and inspection services beyond a Fire Marshall's review of building and development plans. The result has been apparently inconsistent and uneven enforcement, and disputed interpretation of the code, although even this conclusion is subject to controversy and dispute. Some districts maintain a high level of personnel capability; in one instance sufficient to offer inspection services to neighboring districts. Other districts may be indifferent or incapable for fiscal reasons to provide themselves with inspection manpower. Given that everyone seems to be unhappy or confused by the existing situation it may be necessary to renegotiate the delegation of the enforcement authority.

The policy options open to the County in the matter of enforcing the fire code range from the County's reasserting sole responsibility for the enforcement, with the attendant necessity of funding and staffing an adequate fire marshall's office, to allowing the fire district to continue to enforce but bringing them more fully into the development review and inspection process. A middle ground that has been suggested would make fire code enforcement part of the normal process of building inspections. It is clear that several fire districts would prefer to continue inspections because it is in this practice that they

obtain their "as-built" knowledge of access and floor plans for tactical firefighting. It may be a necessary by-product of this organization of fire protection and building regulation that some duplication of effort will have to be tolerated.

The existing organization of fire protection was born of the desire of local communities and neighborhoods to provide themselves with a service in an economical manner and with a high level of local control. The relatively fierce protectiveness with which many of these communities respond to threats, real or imagined, to their fire departments indicated that the districts provide more than simply a public safety service. The other side of this coin is the assumption that the fire districts provide what their constituencies want: a locally appropriate trade off between level of service and level of taxation. Until substantial dissatisfaction is revealed through petitions to dissolve or sunset referendums, there seems little room for County initiative beyond tailoring its own policies to fit the system.

EDUCATION

Education is one of the largest, if not the largest, single-cost center in local government service provision. Lee County is no exception to this generalization. The Lee County District Board of Education is the primary provider of public education services, operating on an annual budget of \$85.1 million for FY 1983-84. Of this amount, 53% is direct local monies, 47% comes from the State of Florida, and the remaining portion, less than 1%, is from other sources, principally the federal government. For comparison, the FY 1983-84 net budget for Lee County is \$192.8¹ million.

The Lee County School Board operates a system consisting of twenty-seven (27) elementary schools (grades 1-5), eleven (11) middle schools (grades 6-8), five (5) secondary schools (grades 9-12) and nine (9) special instructional facilities or campuses. (Tables 3-5 and map). These facilities serve a student body of over 30,000, not including adult education and vocational/technical trainees. The staff of the system numbers 1987 (FTE) with a ratio of administrative/operational personnel to instructors of 1 to 10.² The ultimate product is considered one of the best school systems in Florida. (See Illustration #12)

¹ Lee County District Board of Education; Lee County Program Performance Budget, 1983-84.

² Lee County District Board of Education; Florida Statistical Abstract, 1983.

TABLE 3

PUBLIC SCHOOLS IN LEE COUNTY
Elementary

<u>Elementary School (grades K-5)</u>	<u>Enrollment</u> ³	<u>Staff</u> ⁴	<u>Emergency Shelter</u>
Allen Park ¹	477	60	X
Alva ²	323	32	X
Bayshore	556	50	X
Bonita Springs	213	29	-
Buckingham	proposed	proposed	()
Caloosa ^{1,2}	1,065	74	X
Cape ¹	557	48	-
Edgewood	277	27	X
Edison Park ¹	332	34	X
Ft. Myers Beach	195	21	-
Franklin Park	282	34	X
Gulf ²	518	44	X
Heights	677	62	-
J. Collin English	675	64	X
Lehigh Acres	726	61	X
Michigan	423	42	-
Orange River	696	60	X
Orangewood ¹	478	52	X
Pelican ¹	1,030	71	X
Pine Island ²	231	23	-
San Carlos Park	630	57	X
Sanibel ¹	149	14	-
Spring Creek	415	45	X
Suncoast ²	783	82	-
Tanglewood ¹	610	58	X
Tice	833	74	X
Tropic Isles	684	60	-
Villas	613	56	X

¹Not in unincorporated county

²Joint campus with middle school

³Enrollment as of 3rd qtr. 1982-83 academic year

⁴Full time Equivalent (FTE) positions, including aides, rounded to nearest whole position

SOURCE: Lee County District Board of Education, and Southwest Florida Regional Hurricane Evacuation Plan Update, 1983 (SWFRPC; 1983)

TABLE 4

PUBLIC SCHOOLS IN LEE COUNTY
Middle

Middle School (grades (6-8))	Enrollment ⁴	Staff	Emergency Shelter
Alva ²	836	47	X
Bonita Springs	666	59	X
Caloosa ^{1,2}	782	65	X
Cypress Lake ³	863	69	-
Dunbar	579	58	-
Fort Myers ¹	898	75	-
Gulf	1,144	86	X
Lee	838	73	-
Lehigh Acres	543	42	X
Pine Island ²	155	14	-
Suncoast ²	1,153	85	-

Secondary

High Schools (grades 9-12)	Enrollment ⁴	Staff	Emergency Shelter
Cape Coral ¹	1,929	156	X
Corkscrew	proposed	proposed	()
Cypress Lake	1,565	136	X
Fort Myers ¹	1,456	125	X
North Fort Myers	1,418	124	X
Riverdale	1,507	134	X

¹Not in unincorporated County

²Joint campus with elementary school

³Contiguous campus with high school

⁴Enrollment as of 3rd Qtr., 1982-83 academic year

SOURCE: Lee County District Board of Education and Southwest Florida Regional Hurricane Evacuation Plan Update, 1983 (SWFRPC; July 1983).

TABLE 5

PUBLIC SCHOOLS IN LEE COUNTY
Secondary, Exceptional Student, Special Programs

<u>Special Campuses</u>	<u>Enrollment</u>	<u>Staff</u>	<u>Curriculum</u>
Lee County Area Vocational-Technical School	770	90±	secondary & adult adv. vocational training
Dunbar Community Sch.	-	-	secondary & adult avocational
Lee Adolescent Mothers Program (LAMP)	54	8±	general secondary w/day care svc.
Lee County Alternative Learning Center	50	14±	spec. prog. for disciplinary excl.
Lee County Art Center	-	-	-
Riverside School	168	58±	Exceptional Students Education
Buckingham School	under dev.	N/A	Exceptional Students Education
Exceptional Learning Center	139	24±	Exceptional Students Education
Sunland Center	73	36±	Exceptional Students Education
Environmental Ed. Ctr.	N/A	-	Natural History, Science Ed.

SOURCE: Lee County District Board of Education

As of the first quarter of 1984, expansion plans were generally limited to three new facilities. The first, an exceptional student education center (ESEC) located on Buckingham Road just south of Riverdale High School, was in design phase and scheduled for occupancy by Fall, 1984. The other two facilities were an elementary school on the Buckingham ESEC site within two years and a new high school off the Corkscrew Road in Estero, between U.S.41 and I-75 (see Illustration 12 for school locations).

Each five years, or sooner, where required, a Florida school district must have a school plant survey conducted. This survey is the basic planning process for the district board and recommends capital and other investments to serve the expanding school age population. If, as has been suggested to the Lee County School System staff, the public school student body increases by 7,000 students over the next five years, this will require the construction of, roughly estimated from current ratios, one (1) high school, two (2) middle schools, and four (4) new elementary schools. Over the next twenty years, total school enrollment is expected to grow to over 51,000. If all current ratios hold true, and no more than 10% of the market is drawn into private educational institutions (see below), the additional facilities required, as a very conservative estimate, would be six (6) elementary schools, four (4) middle schools and two (2) high schools.

One of the most crucial issues in providing this expanded capital plant is obtaining appropriately located land. While the

neighborhood school remains a powerful ideal in the popular mind, it is no longer a useful concept in an economic environment where services must be provided in the most cost effective manner possible. The larger school resulting from both the seeking of economies of scale and the combination of campuses must draw pupils from broader areas. This fact by itself indicates that a greater volume of vehicular traffic should be expected and, when coupled with busing for social equity, it becomes clear that vehicular, not pedestrian, access becomes or should become, a major criterion for site selection. In addition, the impacts of this traffic on surrounding land uses must be considered. This suggests that school sites should be located with direct access to collector or arterial streets and not be entirely dependent on local streets. As a practical matter, this places the school district in direct competition with commercial and other more intense land uses for more and more expensive land.

Traditionally, the Lee County School Board has purchased its real estate directly in the local market. This is supplemented, where possible, by donations and exactions from developers or in lieu payments. Generally, this system has worked without difficulty, but there have been sites procured and developed in the name of economy which were (are) less than ideal from the standpoint of the general public. Also, the Lee County School Board, relying on Chapter 235 F.S., has declined to comply with Lee County's land use regulations, including zoning. This has deprived the public of the proper forum in which to comment on the school system's land use proposals and may be perceived as an inequitable exemption of a public body from rules that constrain

private development. The results have been problematic only in isolated instances, but the potential for mischief due to uncoordinated action on the part of one agency or the other grows with the need for more facilities. It appears that the public interest might be better served if Lee County brought the School Board under local land use regulations by mutual agreement or by declaration in this general plan. The objectives of such an action are to ensure that school system locational decisions are better coordinated with service and facility provisions of the County and franchised utilities, and that the County's obligation to the general welfare as regards the protection of various land uses and resources can be served to the fullest.

The Lee County District Board of Education is not the only provider of primary and secondary education in the community. There are over thirty private or parochial schools, kindergartens and day-care centers providing some level of instruction from pre-kindergarten or preschool through high school. This does not include commercial schools of business, cosmetology, etc., which are considered commercial activities. Table 6 lists those private and parochial schools with 100 or more students, their levels of instruction and their enrollments. The enrollments of all private schools represent about 11% of the total school attendance (K-12) in Lee County. For the most part (over 60%), "private schools" are day care centers and nursery schools with some primary level classes. However, over 80% of the attendance is accounted for by the ten largest institutions (Table 6), which generally run to or through high school.

TABLE 6

Private Schools in Lee County
With Enrollments of 100 or More Pupils

<u>School</u>	<u>Enrollment</u>	<u>Levels of Inst.</u>
Avalon Park School	100	Pre-School - 12
Bishop Verot High School	470	9-12
Canterbury School	252	PK-12
Evangelical Christian Sch.	907	PK-12
Ft. Myers Christian Sch .	443	PK-12
Ft. Myers Junior Acad.	104	K-9
Good Shepherd Lutheran Sch.	383	PK-8
N. Ft. Myers Bapt. Ch. Sch.	111	PK-4
St. Francis Xavier	565	K-8
St. Michael Lutheran Sch.	481	K-9

SOURCE: Characteristics of Non-Public Schools in Florida, 1982-83, Florida Dept. of Education (Oct., 1983); and Avalon Park School.

As far as can be determined, private schools face the same sort of locational and service provision questions as do public institutions. Lee County, however, has had few concrete criteria with which to guide the location of such land uses. It is suggested that criteria for institutional land use locations be established in cooperation with Lee County, Lee County school board staff, and the private education industry. These criteria should, ideally, specify minimum standards for vehicular and pedestrian access, water and wastewater service provision, and buffering against less intense adjacent land uses. Separate criteria will be appropriate for primary and middle grades (K-8) and for secondary schools with sports stadiums, auditoriums, student traffic and parking, and extensive community programs and activities after hours.

Three other special educational institutions require mention. First is the Lee County Area Vocational-Technical School operated by the Lee County School Board on Michigan Avenue in the Dunbar district of eastern Fort Myers. This school provides secondary and post-secondary trade school instruction in various skills and crafts. Its enrollment is 770. The second is Edison Community College, a unit of the Florida Community College system operated by a district community college board. Programs include Associate in Science and Associate in Arts degrees as well as the freshman-sophomore years of conventional baccalaureate programs to be completed at a sister institution, University of South Florida at Fort Myers, or another senior campus. Numerous off-campus centers are operated in Lee, Collier, and Charlotte

Counties. Enrollment at the main campus in the 3rd quarter of 1983-84 was 4,447.

The University of South Florida at Fort Myers is a branch campus of the state's University of South Florida in Tampa. A very limited number of baccalaureate and MS/MA programs are available at the campus it shares with Edison Community College. Enrollment in the 3rd quarter of 1983-84 was 985.

Issues facing these three institutions are not as urgent as those facing the general system of primary and secondary education. One reason is that the expansion of these facilities will not be required to keep pace with a growing population of compulsory consumers. However, future planning of these institutions should be done with the full knowledge of and assistance of Lee County in order to protect the interests of both the institutions and the community at large.

In addition to educational services, the Lee County School Board permits many of their buildings to be used as storm and emergency evacuation shelters. In some instances, however, the school buildings are not well equipped to provide long term (several days duration) shelter for displaced populations due to a lack of emergency power, flood hardening or reliable utilities. It appears incumbent upon the County to assist the school system in making appropriate modifications and in providing equipment and provisions to ensure the safe and convenient operation of shelters, if only to ensure that the shelter program is effective.

HEALTH CARE

County governments are not the principal health care planning units in Florida. The Florida Department of Health and Rehabilitative Services has the primary responsibility in this area which is partially executed through statewide guidelines which are in turn applied by multi-county district health planning councils across the state.

The District VIII Health Council, Inc. serves Lee, Charlotte, Collier, DeSoto, Glades, Hendry, and Sarasota Counties from its headquarters in Sarasota. Created in 1982, the Council replaces the South Central Florida Health Systems Council, Region VI, which served a ten county region until it was closed and re-organized in 1982.

The Region VI Council had prepared a Health Systems Plan detailing very specific goals and objectives for health care delivery. The proposed 1984 District Eight Health Plan is a less ambitious work with specific goals, most of which more closely follow state guidelines, adjusted to demographic, economic, and environmental conditions within the district.

The District VIII Health Council rules upon the issuance of Certificates of Need (CON) for health care facilities within the district, including nursing homes, acute care hospitals, mental health facilities, comprehensive medical rehabilitative care facilities, and hospices. The state health planning agency determines need on a district-wide basis, leaving the sub-state district council the responsibility of allocating facilities

within the district. This need is usually expressed as additional acute care beds divided among five categories: MSO (Medical/Surgical/Other), Obstetrics, Pediatrics, General Psychiatry, and Substance Abuse. The Council's jurisdiction does not extend to those care facilities which are considered to be long-term providers of housing rather than medical treatment, such as Adult Congregate Living Facilities (ACLFs), Intermediate Care Facilities for the Mentally Retarded (ICFMRS), and group homes of all types.

ACUTE CARE HOSPITALS

While elderly persons are not the only users of health care services in Lee County, the county's high median age dictates a health care policy in which the number of institutional beds exceeds national standards. National health care guidelines set forth in Public Law 93-641, call for a nationwide goal of a minimum of four (4) acute care hospital beds per 1,000 population. The previous regional standard for the now defunct South Central Florida Health Systems Council was 4.7 beds per 1,000 population.

The new planning structure generally adjusts standards in accordance with the detailed character of the local (regional) population: need for obstetrics beds is based upon the number of women ages 15 to 44; need for pediatrics beds is based upon the number of persons, regardless of sex, under 14 years old; and so on. Finally, the number of MSO beds--the vast majority of all hospital beds-- is calculated by taking a percentage of the under 65 population plus a higher percentage of the over 65 population.

The Council, using estimates of population and population age structure by the University of Florida Bureau of Economic and Business Research, predicts a need for 78 new MSO beds in Lee County by 1988 as well as two additional obstetric beds. Additional beds in other categories should not be needed during the next five years, provided the beds for which certificates of need have been issued are built. The need for more beds cannot be described as a critical problem in Lee County at this time.

The five acute care hospitals in Lee County--Charter Glade (104 beds: general psychiatry and substance abuse treatment); Cape Coral (94 beds); Ft. Myers Community (400 beds); Lee Memorial (558 beds); and East Pointe at Lehigh Acres (88 beds) serve residents of neighboring counties as well as local persons. Cape Coral, Community, Memorial and East Pointe are general hospitals and each receives emergency calls. Lee Memorial offers the only pediatric and obstetric units in the County; Fort Myers Community maintains the only open heart surgery unit; Charter Glade is the exclusive provider of mental health acute care beds and substance abuse treatment in Lee County. In other matters, excepting Charter Glade, these hospitals provide more or less the same medical and surgical services. In addition to these facilities, a private for-profit firm has recently opened two commercial emergency care clinics which provide a limited range of first-aid and acute trauma care.

Lee Memorial Hospital is operated by a quasi-public corporation governed by a board of directors elected from county commission districts. It is considered the public hospital and enjoys a

long history of collaboration with county government in many areas. Cape Coral and East Pointe Hospitals are private non-profit corporations while Fort Myers Community and Charter Glade Hospitals are run by for-profit health care firms. In the current atmosphere of reduced funding and cost containment, all hospitals are behaving like profit maximizing private concerns seeking to maximize their share of the most profitable portions of the market while avoiding the least profitable, and to occupy the most advantageous geographic location.

The two issues believed to be the most pressing relative to the County's interest in providing health services are the standards of location for the new facilities and the equitable funding of indigent care. In the past several years, zoning and development review had indicated few problems with the Site Location/Development standards adopted in previous plans (1979). It has been noted, however, that some greater flexibility, particularly in site size, would be beneficial to all involved. It is recommended that site location and development standards for hospitals and other acute care clinics be reviewed with an industry committee and the revised standards be incorporated into a revised zoning ordinance and development standards regulation.

By far, the most important new issue for hospitals is funding care for the medically indigent.* Lee Memorial Hospital is

*The term "medically indigent" is used here to refer to a varying population; basically those persons who cannot afford medical care due to low income and constrained consumption patterns, but also those persons who usually consume a normal level of medical services, but are economically devastated by catastrophic illness or injury.

traditionally considered the primary care facility for the economically indigent in Lee County. It finds itself faced with the same sort of fiscal issues that beset public hospitals across the country. In Lee County's case several factors, notably the decline in real income, the structure of the local economy, the increasing reliance on technology and capital, have increased the magnitude of the problem. Lee Memorial Hospital, faced with the greater volume of medically indigent persons, usually spread the costs of their treatment over all their billings for treating paying consumers. However, the inequities of requiring a small segment of the community to bear the whole cost of providing this community wide public good have been recognized. Recent proposals by Lee Memorial Hospital Board for the County to contribute to a prenatal care program are indications of this. It may be time for the County to assist in creating an equitable mechanism to fund hospital care for the indigent, one which places Lee Memorial Hospital on an equal footing with other providers in the area.

NURSING HOMES

Nursing homes serve the needs of persons who cannot care for themselves due to physical or mental infirmities. These persons' disabilities are typically long term, making acute care hospitalization too costly and an inefficient use of facilities and staff needed by others in the community. Their disabilities are usually irreversible and chronic. Nursing home care ideally seeks to promote wellness and prevent deterioration of health. For this

reason, nursing home care should be distinguished from comprehensive medical rehabilitation care and also from most forms of mental health care and substance abuse treatment, all of which seek to effect a complete or partial rehabilitation of the patient. The goal of nursing home care is stabilization and not recovery. Finally, nursing homes are not necessarily health care institutions for the terminally ill. State policy encourages the development of hospices to attend to the medical, emotional, and spiritual needs of terminally ill patients and their families.

Nursing home beds can be initially divided into two broad categories: 1) Sheltered beds, which are attached to life care facilities; and 2) Community care beds, which are not attached to life care facilities. There are currently 220 sheltered beds in Lee County, with certificate of need approval for an additional twenty. Residents, or their families, contract for nursing services, usually with a substantial down payment and monthly billing. Sheltered nursing beds do not necessarily belong to conventional nursing homes; they are often a part of retirement centers which offer nursing care along with a comprehensive package of other services. Under certain circumstances, Medicare can be used as a source of payment for sheltered bed service. Life care centers may offer their services to the general public and may accept Medicaid or other public assistance when they do, but they are not required to do so.

Nursing home beds not located within a life care facility are community care beds. Both types require certificates of need and state inspection standards are identical. There are cur-

rently six community care nursing homes in Lee County--five in Fort Myers (628 beds) and one in Cape Coral (120 beds) and certificates of need have been issued for four others with a total of 332 additional beds--two facilities in Cape Coral, one in Fort Myers, and a 110 bed facility at East Pointe Hospital extending nursing services to Lehigh Acres.

Current statewide guidelines recommend a maximum of 27 community care beds per 1,000 persons aged 65 and older. The District VIII Health Council has adjusted this maximum downward to a maximum of 23.15 beds/1,000 elderly. The Council further recommends an occupancy rate of at least 90 percent in any area before new licenses are approved. The ratio may soon be revised downward again. However, the District Council has projected a need for 391 new beds in Lee County by 1986, taking into account the 332 beds at facilities which have received certificates of need, but are under construction or still in litigation. This situation contrasts with substantial overbuilding in other counties, notably Sarasota and Charlotte. The need for more nursing home beds is likely to continue as long as Lee County maintains its phenomenal growth, and alternative methods of care are not implemented, public policy notwithstanding.

As in other institutional uses, more explicit yet more flexible standards appear to be required for locating and specifying minimum services for nursing homes. Further, the evolving "life care" institution, which is more residential than institutional, but which is encumbered with accessory uses more of a commercial or institutional nature, bears some scrutiny. It may

be suggested that such facilities be regulated through special planned developments with a relatively broad and discretionary mix of permitted uses.

MENTAL HEALTH

Long term inpatient mental health services for Lee County residents are provided at the G. Pierce Wood Hospital in Arcadia, one of four public mental hospitals in the state. Acute care long-term hospitalization is available from the private Charter Glade Hospital in Fort Myers, a 108 bed, four unit (Substance Abuse, Gerontology, Childrens', and General Psychiatric) hospital which opened in 1983.

The Lee County Mental Health Center is the county's only comprehensive mental health service, offering services from the most restrictive (i.e. crisis stabilization) to the least restrictive (i.e. out-patient and therapeutic foster care). The Center operates a 20 bed inpatient drug abuse treatment program for adult males. Another 30 beds are available through the foster care program. Additional beds are under consideration to provide Baker Act services in the community.

The 1984 District Eight Health Plan cites the problems of mental health care under the 1972 Baker Act: " . . . the District Eight Health Council recognizes the limited funding for Baker Act patients and encourages the State of Florida to fund the program more appropriately. Meanwhile, the need for a receiving unit in Lee County for servicing Baker Act patients within Southwestern Florida has been identified as a long standing concern." The

Council urges the establishment of an inpatient receiving unit in Lee County to serve area Baker Act patients. The need for such a facility appears to be Lee County' greatest need for an additional mental health facility.

OTHER SERVICES

All five acute care hospitals in Lee County provide some form of rehabilitative services. Charter Glade provides only psychiatric therapy; the others provide some combination of respiratory, physical, occupational, and speech therapy. Historically, inpatient beds available for persons requiring extended therapy have been counted in the "Medical/Surgical/Other" (MSO) category. A special Certificate of Need designated for Comprehensive Medical Rehabilitative Care beds is now emerging in Florida. District VIII Health Plan predicts the need for 20 beds in Lee County holding this designation by 1988.

Inpatient stays for persons receiving rehabilitative care tend to be lengthy (28 days is the official average used for projecting future bed need). Outpatient care is typically provided outside the institutional environment by private physicians and therapists.

Hospices, facilities that care for and comfort the terminal-ly ill and their families, are a new feature in health care which has developed in recent years. They require Certificates of Need, but they are non-institutional by design. Although physicians are often present at hospices, they are typically managed by nurses, clergy, and volunteers whose aims are to relieve the

emotional and physical suffering of the terminally ill through home care, homelike inpatient care and outpatient care with 24-hour support services. The Certificate of Need process particularly considers local cancer rates, as cancer patients are among the most numerically significant hospice clients.

No realistic estimate can be made for future hospice demand. Indeed, its future is uncertain as the hospice movement is of too recent origin to determine the preference by patients and their families for hospice services as opposed to the traditional institutional methods for treating the terminally ill. It has also not been fully accepted by Medicare and other hospitalization insurance providers as an alternative to institutional care.

EMERGENCY MEDICAL SERVICES

Lee County, through its Emergency Services Department, operates a state-of-the-art emergency medical and rescue service. From nine stations scattered throughout the County, ambulances carrying a paramedic and an emergency medical technician provide Advanced Life Support response to all areas except Fort Myers Beach, Lehigh Acres, Pine Island and Gasparilla Island (Boca Grande). In these relatively isolated areas, the local fire district provides first response emergency medical services with backup from Lee County EMS (excepting Boca Grande, where backup is provided by Englewood Fire Department in Charlotte/Sarasota Counties). In addition, Lee County EMS operates a helicopter ambulance for emergency evacuation, particularly for barrier and bay islands or where ground evacuation is difficult.

In FY 1982-83, Lee County EMS responded to approximately 15,000 calls of which 62% required a hospitalization. Response times average approximately 4 minutes. No screening is done by dispatch and an Advanced Life Support Unit responds to every call (except where Fire District units without a paramedic, a Basic Life Support System, responds).* While this is an expensive strategy of service provision, it is difficult to criticize on a fiscal basis assuming that it does save lives. Costs of this service are budgeted in FY 1983-84 at about \$2.5 million with a substantial revenue from user fees.

The one feature lacking in this system is a consolidated communication/dispatch system centered on the 911 telephone emergency code. 911 systems vary widely in sophistication, ranging from the Basic System, in which an operator relays the message to the appropriate response unit (i.e. fire department, EMS, law enforcement agency), to the electronic alley advanced Selective Routing System, which is not currently available in Southwest Florida.

Lee County can develop an Enhanced (E-911) system with Automatic Number Indicator (ANI), Automatic Location Indicator (ALI), and Emergency Service Number (ESN), three electronic aids which give dispatchers the telephone number from which the call originated, cross referenced to the location and the names and

*Advanced Life Support = licensed paramedic and a 4 minute response time; Basic Life Support = paramedic not provided, 8 minute response time.

telephone numbers of all appropriate response agencies. The enhanced 911 system could eliminate much of the confusion currently experienced by Lee County residents in times of emergency. Tourists and newcomers can use the 911 system with ease. Unfortunately, the E-911 system requires as much as two years' lead time before it can be used, and it is not cheap. Telephone directory addresses must be converted to specific streets and numbers. Systems corrections of this sort require a conversion period of approximately twenty-four months. As it has potential for saving lives, however, it appears that serious consideration should be given to the 911 concept.

ENVIRONMENTAL HEALTH

Lee County, in collaboration with the Florida Department of Health and Rehabilitative Services (DHRS), operates a county health unit (CHU) which provides a unique body of public health services in addition to a conventional clinic heavily patronized by low and moderate income households. These services fall into three main realms. First is the traditional activity of records keeping and statistical compilation and reporting. These statistics form the heart of the epidemiological reporting system that is monitored by state health officers as well as the U.S. Public Health Service. The second service is a set of special clinical programs including oncological (cancer) screening, postpartum maternal health, home health care, and, of course, low cost immunizations. The third program is enforcement of the state health code including inspections of institutions, food service

locations and general sanitation of regulated facilities. Also, engineering review and inspection of water and wastewater systems, including septic tanks, is provided.

POLICE AND JUSTICE

The public safety in Lee County is insured by the Board of County Commissioners through their support of various law enforcement agencies [and the state and county judicial system]. As a non-charter home rule county, Lee County is limited generally to providing and maintaining facilities and providing services to the constitutional officers, State and municipal agencies and officers of the various courts.

The criminal (and civil) justice system consists of law enforcement agencies, the Lee County Sheriff's Department*, the police departments of Cape Coral, Fort Myers, Sanibel and the Southwest Florida Regional Airport, and officials of the courts system, justices and administrators, State's Attorney*, Public Defender, Clerk of Court*, Medical Examiner, and probation officers. With the exception of the municipal and airport police departments, and the medical examiner, these officials occupy a complex of buildings in downtown Fort Myers including the six story 350,000 square foot Justice Center completed and occupied during the 1983-84 Fiscal Year. The Justice Center contains a 310 bed jail, courtrooms, offices and records storage, and the central communications, and dispatch center for the Sheriff's Department. The jail can be expanded to 750 beds and is supple-

*Indicates "Constitutional Officer".

mented by a 120 bed minimum security stockade, itself expandable to 400 beds. The Justice Center is operated by a public buildings authority. The County's role in the system is in providing the facilities, communications and utilities and capital equipment.

Planning for the Justice Center was performed in 1978-79 based on a number of parameters including an estimated population for the year 2000 of 430,500 (residential only). Under the assumptions of this plan and the extended time line to 2005 there should be sufficient capacity in this building for the life of this general plan. However, since population is not the only determining factor for space requirements for justice and law enforcement agencies, good planning practice indicates a need for continuous evaluation and review of this facility plan with revisions of this program as necessary. It is therefore recommended that a continuous facilities planning process be maintained and the results be incorporated in some detail in subsequent iterations of this general plan.

General responsibility for law enforcement in the unincorporated county lies with the Sheriff's Department. However, enforcement of traffic regulations and accident investigation are generally carried out by the Florida Highway Patrol. This permits the Sheriff to allocate his resources mainly to security patrol, auxiliary services, criminal investigation, and court service.

As of December, 1983, the Sheriff's Department employed approximately 400 persons. Thirty four percent (34%) of these are officers on security patrol, 26% operate the jail and stock-

ade, 21% are administrative/support personnel and 9% are involved in criminal investigation. Growth in personnel has generally paralleled growth in population. Departmental policy emphasizes increased numbers of patrolmen and investigators over support personnel and other overhead. At the present time, the Sheriff operates from the main station located in the Justice Center in downtown Fort Myers and four substations: North Fort Myers/Cape Coral, Bonita Springs, Lehigh Acres and Fort Myers Beach. The substations, Lehigh Acres excepted, are on County park land, are mainly vehicle parks and refueling depots and carry minimum administrative overhead as they are not used as precinct stations. The Sheriff's Department anticipates no need for additional substations for at least the immediate future.

Planning for law enforcement is hampered by a lack of relevant standards for various classes of officers and support personnel required to provide an adequate level of service. There does not appear to be any generally accepted standard for defining an "adequate level of service." Standards borrowed from other jurisdictions must be used with care. In a growing community, particularly one with few constraints on the geographic extent of settlement, direct costs and response time for a critical service can rise to unacceptable levels very quickly. The costs of providing law enforcement services should become a consistent factor in evaluating development proposals. In order to do this, some standards are required, in turn requiring a planning process in which all interested parties participate.

Data Base and Methodology

Libraries

This account of existing conditions and assessment of services for libraries was based on statistical data from The Florida Statistical Abstract and information from the American and Florida Library Associations. This was augmented with direct communication with the Director of the Lee County Library System and various budget documents.

Fire Protection

This account of existing conditions and assessment of needs for fire protection was based on information from the following sources: Lee County Fire Official, interviews with chiefs and fire officials of several districts, Insurance Services Office of Florida (Jacksonville), State Fire Marshall's Office (Tallahassee), Lee County Tax Collector, The Fire Chief's Handbook, and the office of (Fla.) Senator Frank Mann.

Education

This account of existing conditions and assessment of needs for education was based on statistical data from The Florida Statistical Abstract, from the Lee County District Board of Education, and from the Florida (State) Department of Education. Additional information was obtained from various school officials, the Edison Community College and University of South Florida at Fort Myers. Data concerning schools such as storm shelters is from SWFRPC, Southwest Florida Regional Hurricane Evacuation Plan (1980) and Update (1983).

Health Care

This account of existing conditions and assessment of needs was based generally on the 1982 Health System Plan, the draft 1984 District Eight Health Plan, Florida Administrative Code, Florida Statistical Abstracts, and personal communications with the Lee Memorial Hospital Administration.

Police & Justice

This account of existing conditions and assessment of needs for police and justice was based on data published in The Florida Statistical Abstract and personal communication from the Lee County Sheriff's Office. Additional information was obtained from the 1983-84 Lee County Program Performance Budget and personal communications from Watson and Company and the Lee County Special Projects Coordinator.

NEEDS

The fundamental need is to ensure the proper conditions for the provision of an adequate level of service, by whatever agency, but also:

- to ensure that service provision by any agency is consistent with this general plan and does not create negative spill-overs or other avoidable costs to the County or any other agency;
- to facilitate the achievement of the provider agency's goals; and
- to provide a basis for cooperation between the County and the agency charged with primary responsibility for service provision.

The service specific needs for the future community as assessed from existing conditions and assumptions concerning the future are:

Libraries

To establish a consensual definition of an acceptable level of library services and to set forth a specific program of achieving that level of service.

Fire Protection

To ensure acceptable levels of fire service including fire prevention and inspection services; and

- to increase the general effectiveness and efficiency of fire services provision; and
- to improve ISO ratings and thereby reduce fire insurance rates; and
- to ensure the coordination of land development and expansion of fire services.

Education

To ensure improved coordination between the development of education facilities and the development of all other public facilities and services; and

- (for the County) to assume a greater role in preparing school facilities for disaster shelters.

Health Care

To ensure improved coordination between the development of health care facilities and the development of all other public facilities and services.

Police & Justice

To ensure improved coordination between the development of police facilities and services and justice facilities and the development of all other public facilities and services.

GOALS, OBJECTIVES AND POLICIES

Goal VII.T.1: To improve the overall level of service throughout the county system and to increase the size and quality of the collection.

Obj. VII.T.1: To avail the County of all resources and opportunities to raise the standards of library service to correspond to that of other Florida communities of comparable size, demographic characteristics, and financial resources.

Policy VII.T.1 The County may provide the budgetary authority necessary to increase the number of items per capita in the Lee County Public Library System collection to 1.5 by 1989.

Policy VII.T.2 The County may provide budgetary support for acquisitions and the addition of full-time professional personnel at levels equal to that of other Florida communities of comparable size, demographic characteristics, and financial resources.

Policy VII.T.3 Prior to the next iteration of this element, the County shall apply to the State Librarian for funds to underwrite a thorough survey of Lee County's library services, conducted by a qualified independent authority, and execute this

program. This survey shall include as a minimum the identification of specific needs, the identification of community preferences, particularly of specialized service, and an analysis of costs and funding alternatives.

Goal VII.T.2: To ensure that library services are provided in a manner that is responsive to the needs of the community and of specific targeted constituencies.

Obj. VII.T.2: To establish a system of accurately assessing the information needs of the various identifiable constituencies in the community.

Obj. VII T.3. To adjust acquisitions and personnel allocations so as to provide optional service for both the system as a whole and for each neighborhood branch.

Policy VII.T.4 The County Library System shall periodically survey the information needs of the business community, government, the media, and the general public, adjusting acquisitions and personnel assignments accordingly.

Policy VII.T.5 The Fort Myers-Lee County Main Library shall be the central focus of reference facilities and services, such services and facilities to be extended to branches as demand requires.

Policy VII.T.6 The County may provide budgetary support for reference acquisition and services equal to that devoted by other Florida communities of comparable size, economic structure, and financial resources.

Policy VII.T.7 The County shall establish a special fund to solicit and receive donations from the local business community to assist in providing augmented reference services.

Policy VII.T.8 The County shall periodically canvass the patrons of branch libraries to determine their reading and service needs and preferences and to adjust acquisitions and personnel assignments accordingly.

Policy VII.T.9 The County shall ensure that programs of cooperation and collaboration between the County Library system and the libraries of Edison Community College and USF-Fort Myers are established and carried out.

Goal U:

Insofar as possible to ensure the provision of high yet cost-effective levels of fire suppression and prevention services throughout the unincorporated county.

Objective U.1:

To support or facilitate the maintenance or improvement of the present level of fire service in the unincorporated county.

Policy U.1.:

Through interlocal agreement, the County shall make available to the various fire districts such services as the districts could not duplicate individually at similar or lower cost.

Policy U.2.:

With the advice and cooperation of the fire districts and the potable water utilities, the County shall establish a standard for water facilities and services, relating to fire flow and pressure, including a latest date for compliance with said standard.

Policy U.3.:

Where cost-effective and technically feasible, existing potable water systems will be refitted to current fire flow standards.

Policy U.4.:

The County shall cooperate with the fire districts in establishing a single county wide communications system that will enable the dispatch of fire and rescue personnel to an emergency without second phone calls.

Policy U.5.:

The County shall explore the feasibility of a "911" emergency telephone system with central dispatch of public safety and EMS units.

Policy U.6.:

The County, in cooperation with the various fire districts and the area's legislative delegation, shall establish contingency plans to ensure continuity of service in the event of the dissolution of a district by referendum in 1986.

Policy U.7.:

The County shall investigate and monitor the feasibility of alternate organizations of fire protection service for the various communities of the unincorporated county.

Objective U.2.:

To insure the consistent and uniform enforcement of the Lee County Fire Code.

Policy U.8.:

The County shall renegotiate the memorandum of agreement with the various fire districts concerning the Fire Code to either:

- a) set clear and unequivocal standards for enforcement of the Code by those districts which accept the delegation of the County's responsibility (including provisions for the resolution of questions of interpretation), or
- b) commit the responsibility for enforcing the Lee County Fire Code to the building inspection section of the Division of Code Enforcement.

Policy U.9.:

Where a fire district does not choose to accept the delegation of the responsibility of enforcing the Fire Code, the County may establish an assessment district to fund the service provided by a County Fire Marshall to another fire district through interlocal agreement.

Objective U.3.:

To provide procedures which coordinate land conversion and development with the requisite expansion of fire services and facilities.

Policy U.10.:

The County shall require that all new development be located in an established Fire District. Lacking an established Fire District, prior to the issuance of

permits an otherwise approved developer must arrange for the extension of the service area of an existing district, obtain a charter for a new district, or petition for the erection of a Municipal Services Taxing Unit (MSTU) or Community Development District (CDD) for the provision of fire suppression and prevention services.

Policy U.11.:

The County shall require that new development pay for that additional fire equipment, apparatus and facilities for which it creates a demand. This may be accomplished through mandatory dedications or fees in lieu of dedication, or the County may establish impact fees for fire service capital equipment and facilities.

Policy U.12.:

The County shall exercise every opportunity and device to insure that the interests of each independent fire district are represented in the zoning and development review processes.

Policy U.13.:

The County, with the advice and cooperation of the fire districts and other interested agencies, shall establish standards for establishing, equipping and locating new fire stations.

Goal VII.V:

To ensure that physical plant investments of educational institutions are consistent with the policies of this plan as well as with good planning principles.

Objective VII.V.1:

To establish standards and enforcement mechanisms to ensure the protection of the general welfare in the provision of educational facilities.

Objective VII.V.2:

To establish a program and allocate responsibility for supporting the use of schools as emergency shelters.

Policy VII.V.1.:

The County shall, in collaboration with the Lee County District Board of Education, representatives of private and parochial school associations and other interested institutions, develop and adopt standards for the location and development of educational institutions consistent with Chapter 235, F.S.

Policy VII.V.2: The County shall require that all educational institutions comply with local zoning and land use regulation where not pre-empted by State statute or administrative code.

Policy VII.V.3: The County shall provide information and services to public educational institutions to enhance interjurisdictional cooperation and the achievement of mutual goals.

Policy VII.V.4 The County shall encourage programs of collaboration between economic development agencies and the local Board of Education, the Community College District, and USF at Fort Myers to ensure their support of local economic development goals.

Goal VII.W.1: To ensure the efficient provision of public services to health care facilities.

Objective VII.W.1: To establish and enforce standards of design, utility provision, and location for health care facilities that enhance their provision of service while minimizing negative impacts on surrounding properties and the general welfare.

Policy VII.W.1: The County shall review, revise, and readopt as necessary the standards for locating and providing water, wastewater, solid waste, and transportation services to hospitals and nursing homes. Any new standards shall recognize in detail the different facility and service needs of different types and levels of care.

Policy VII.W.2: The County shall review, revise, and readopt as necessary standards for the mix of land uses comprising health care facilities and the zoning classifications permitting those uses.

Policy VII.W.3: The County shall revise zoning and development regulations to provide for the Life Care Facility concept (a residential use with various levels of nursing care as an accessory use) while preserving the public interest.

Goal VII.W.2: To maintain and enhance the quality of Emergency Medical Services in Lee County.

Objective VII.W.2: To create a single county-wide communications system to receive medical emergency and fire calls, and to dispatch rescue and EMS personnel to the scene without transferring calls.

Policy VII.W.4: The County shall continue to explore the feasibility of establishing a "911" emergency telephone system coupled with centralized dispatch of Emergency Medical Service and fire units.

Policy VII.W.5: Where communities are adjacent to other jurisdictions and opportunities exist for cooperative service extension across jurisdictional boundaries, the County shall encourage and facilitate the inclusion of other jurisdictions in systems of centralized communication and dispatch.

Goal VII.X: To ensure the effective and efficient provision of facilities and services in support of law enforcement and justice for the growing population of Lee County,

Objective VII.X.1: To establish goals and standards by which both private development and public service provision and their mutual effects can be gauged in the area of law enforcement.

Policy VII.X.1: The County in collaboration with the Lee County Sheriff shall establish a planning process to set forth measurable goals and standards for law enforcement planning and budgeting.

Objective VII.X.2: To establish an ongoing facilities planning program for justice and law enforcement agencies.

Policy VII.X.2: The County shall commence to evaluate the planning program for justice and law enforcement facilities, and review and revise as necessary plans for such facilities with each reiteration of this plan.

STANDARDS

Specific standards for the implementation of the Community Services Sub-element shall be developed and adopted by ordinance after the adoption of this general plan. Said standards shall be incorporated here in subsequent interation of this plan.

An exception to the above is:

Libraries: the aggregate collection of the Lee County Library system shall equal or exceed 1.5 items per capita resident population by September 30, 1989.

CAPITAL IMPROVEMENTSA. LibrariesPriorities - General

Over the time horizon contemplated in the plan, the principal priority for investments in capital facilities for library services will be the improvement and expansion of existing facilities. The next priority will be the establishment of new facilities in areas of high growth of population and service demand.

Costs

Cost estimates for capital improvements for library services are subject to a high level of variability depending upon the sources relied upon and the "package" of improvements sought. Achievement of the augmentation of the collection standard alone is expected to cost from \$8.6 to \$10.7 million. Facilities and equipment estimates are relatively sensitive to the organization of the library system and the services provided at each branch. Costs for facilities demanded by the additional population expected by 2005 range from \$3 million to \$8 million.

Proposed Funding Sources

Several sources of funds or resources for library facilities exist or have been relied on historically. These include:

- 1) Capital Improvement Fund based on ad valorem revenues;
- 2) Grants from Federal, State and private sources as available;
- 3) Private donations; and
- 4) Assessment Districts.

Priorities - Specific

Within the first five years of this plan, four library facilities have been designated for construction, their priority illustrated by the years of construction activity. These are:

1) Cape Coral Library

Construction of a 15-20,000 square foot library on eleven acres of land donated for the purpose. Replaces an existing unserviceable structure. Project is ongoing and will be completed in 1984-5, paid for from general Capital Improvement Fund.

2) Pine Island Library

Construction of a 5,300 square foot library on public park land. Replaces existing facility judged inadequate. Project is ongoing and will be completed in 1984-5, paid from general Capital Improvement Fund.

3) East Fort Myers Library

Construction of a 5,000 square foot library. Assumes no land cost. Funded from Capital Improvement Fund and built in 1986-7 and 87-8.

4) South Fort Myers Library

Construction of a 5,000 square foot library in conjunction with community center (see Parks & Recreation). To be built on public land at Rutenberg Park in 1986-7 and 1987-8. Funded from Capital Improvement Fund.

B. Emergency Medical ServicesPriorities - General

Capital investments for County emergency medical services will principally be for equipment. Advanced Life Support Units will usually be stationed at firehouses under interlocal agreements with fire district boards. Where this is not feasible, leased commercial space at appropriate locations will be used.

Maintenance of adequate response time (4 minutes or less) as a function of call frequency and geographic constraints is the measure of need on a day by day necessity. Evolving patterns of urban development often require relocating existing equipment and personnel as well as procurement of new equipment.

None of this discussion deals with the provision of Basic Life Support or Advanced Life Support teams by those independent fire and rescue districts which choose to provide either service.

Costs

It is estimated that the total growth to 2005 will require 6 2/3 additional ambulance units and that each fully equipped vehicle will cost \$70,000 each (reuse of equipment reduces the cost of replacement vehicles considerably). If free standing ambulance stations were to be provided, it is suggested that they would add \$375,000 to each unit (in 1984 dollars).

Funding

The sources of funds for the capital equipment for this service is the County general fund. Operating expenses are defrayed in part from user charges and from the general fund. A future option may be the use of assessment districts.

Priorities - Specific

During the first five years of this plan, the programmed capital equipment requirements for EMS are three ambulances; two replacements for worn out vehicles and one for an additional level of service.

CONSISTENCY

Good planning practices, as well as State statutes, demand internal consistency of any comprehensive plan. The relation of this Community Services Subelement to the remainder of this general plan is indicated mainly by indirect means. As services by their nature are intangible, their provision effects or is effected materially through the facilities constructed to support their provision. Generally, these facilities are tied to the standards of development created by the Land Use and Conservation/Coastal Zone Elements and utility sub-elements, just as would be any development. Locational standards required in this sub-element will supplement and expand upon those established under these others. And lastly, to a substantial degree, they are to ensure coordination of this plan with development plans of independent agencies and other service providers.

(217-DD)

VIII. PARKS, RECREATION, AND OPEN SPACE ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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I. INTRODUCTION

A. Purpose

The Parks, Recreation, and Open Space Element provides direction for Lee County officials and citizens to serve the needs of permanent residents, seasonal residents, and visitors for leisure activities, facilities, and spaces. It is intended to guide the development of recreational programs and acquisition of facilities by setting objectives and strategies.

Several documents have been prepared in support of the Parks, Recreation, and Open Space plan element. The Comprehensive Parks Development Program, covering the five year period from 1978 to 1982, has guided the Lee County Parks Department in a short range program of land acquisition and capital improvements. The Southwest Florida Regional Planning Council issues Support Services, which includes a detailed listing of parks and recreation areas serving the County. These documents and the objectives and strategies set forth in this element provide a sound basis for directing decisions regarding recreational services for Lee County.

Lee County will continue to provide activities and acquire space and facilities to meet the passive and sports-oriented recreational interests of the County. The relationship of population density and the accessibility of parks and land will remain an important determinant of programmed capital improvements. The parks classification system, consisting of Neighborhood Parks, Community Parks, Regional Parks, Nature Preserves, and Special Areas provides guidance concerning size, service

area, and uses for existing parks or those proposed in the capital improvements program. The policies set forth following the goal and objectives for this element provide a strategy for implementing and financing Lee County's parks, recreation, and open space programs.

B. Existing Conditions

The physical location of Lee County affords permanent residents, seasonal residents, and visitors with a variety of leisure opportunities. Natural amenities such as the Caloosahatchee River, the Gulf of Mexico, barrier islands with beautiful beaches, warm climate, and tropical breezes are foremost among our resources. Lee County is fortunate because the quality of our scenic spaces has not yet been overshadowed by rapid development. The threat to the amount, availability, and accessibility of open space and recreational resources is real and imminent. Without adequate prior designations of parks and open space, the reservation or acquisition of suitable sites and spaces becomes increasingly difficult as land costs rise and other uses are established.

The parks and recreation program is administered by the Lee County Division of Community Services, and includes responsibilities for the acquisition of park sites, the construction and maintenance of facilities, the program development and supervision of recreational activities. Initially, the Parks and Recreation Department had only one large site at Terry Park, which consisted mostly of ballfields and fairgrounds. There were very few other parks and their facilities were limited. The distribution of the limited number of parks was not systematic or

orderly. In 1971, there were 49 park areas, many with severe site limitations and some no larger than a ballfield or lot. There are now 62 parks and other recreational facilities covering over 2,900 acres (see pages VIII 6-10): The County continues to improve the utilization of its available recreational facilities, services and spaces. (See Illustration #13).

Table 1 identifies existing levels of public parkland provision by Lee County. With the development of the five-year work program in 1978 and the adoption of the Comprehensive Plan in 1979, the framework for a continuing and systematic parks, recreation, and open space planning process was established. This includes a park classification scheme and standards for the development of park facilities. The classifications serve as a guide for planning and programming improvements and locating new sites as warranted by population growth and changing service demands. The integration of long-range planning and capital improvements programming will ensure that an adequate level of service is provided to equitably meet our recreational and open space needs.

Recreational opportunities provided in the private sector abound in Lee County. In addition to the traditional condominium recreational amenities (i.e. tennis courts and swimming pools) there are over 26 private golf courses, 70 marinas and 35 campgrounds and travel trailer parks. In a recreationally oriented county such as Lee, these privately operated facilities play a major role in serving the residents as well as the tourist population.

NEIGHBORHOOD PARKS	Planning District	Acreage	REST ROOMS	RECREATION BLDG.	POOL	BOAT RAMP	PLAYGROUND EQUIP	PICNIC AREA	BASKETBALL	TENNIS	SOFTBALL	BASEBALL	FOOTBALL/SOCCER	SWIMMING	FISHING	SHELTER	DOCK
AVOCADO PARK	1	2						X								X	
CHARLESTON PARK	5	4		X			X	X	X							X	
DUNBAR NBHD PK	1	3	X						X		X	X					
FT. MYERS SHORES (CYPRESS) PK	5	7					X										
HUNTER PARK	2	9													X		
J COLJN ENG. PARK	4	3								X							
OLGA NGBHD PK.	5	2		X			X	X	X	X						X	
PAGE PARK (COMM.)	2	2									X	X					
PINE IS. ELEM. SCHOOL PK.	12	5					X										
ROYAL PALM PARK	1	1						X							X		X
RUSSELL PARK	1	1		X													
ST JAMES CITY	12	1					X								X		
SAN CARLOS ELEM SCHL. PARK	9	3 5						X			X	X					
VILLAS ELEM. SCHL. PARK	2	3					X			X							
BONITA SPRINGS																	

	Planning District	Acreage	REST ROOMS	RECREATION BLDG	POOL	BOAT RAMP	PLAYGROUND EQUIP.	P/CNIC AREA	BASKETBALL	TENNIS	SOFTBALL	BASEBALL	FOOTBALL/SOCCER	SWIMMING	FISHING	SHELTER	DOCK
MATLACHIA PARK	3	6	X	X		X	X	X	X						X	X	X
N FT MYERS COMM H S. PARK	4	10															
N FT MYERS SENIOR CENTER	4	w 1	X		X									X			
TURNER BEACH	13	2.5	X					X						X	X		
JERRY BROOK SPORTS COMPLEX	2	17	X					X		X	X	X	X				
PHILLIPS PARK	12	4	X		X		X		X	X		X		X			
PINE ISLAND ELEM. SOUTH PARK	12	5					X		X								
RIVERDALE H.S COMM PARK	5	40	X		X				X	X		X		X			
RUTENBERG PARK	2	40	X				X	X		X			X		X		
SCHANDLER HALL PARK	1	4		X	X		X	X			X	X	X				
SCHULTZ FARM	1	17		X							X		X				
SUNCOAST COMM. SCHOOL PARK	4	40							X	X	X	X					
TARPON BAY RD	3	1								X	X			X	X		
TICE ELEM SCH. COMM. PARK	1	5					X		X	X							
TURNER BEACH	13	3	X					X						X	X		
WATERWAY PARK	3	6	X	X			X	X	X	X						X	
SANIBEL/CAPTIVA SPORTS PARK	13	27								X	X						
BAY OAKS	10	7						X			X	X					

	Planning District	Acreege	REST ROOMS	RECREATION BLDG.	POOL	BOAT RAMP	PLAYGROUND EQUIP.	PICNIC AREA	BASKETBALL	TENNIS	SOFTBALL	BASEBALL	FOOTBALL/SOCCER	SWIMMING	FISHING	SHELTER	DOCK
COMMUNITY PARKS																	
ALVA COMMUNITY PARK	5	10	X	X			X	X		X	X	X				X	
BOCA GRANDE BALLFIELDS	15	8									X						
BOCA GRANDE BEACH	15	1.5	X					X									
BOCA GRANDE COMMUNITY CENTER	15	5		X			X		X	X						X	
BONITA BEACH	10	2	X											X	X		
BONITA COMMUNITY PARK	8	2	X	X			X	X									
BONITA SPRINGS RECREATION PARK	8	60	X	X			X	X		X	X	X	X		X		
BUCKINGHAM SCHOOL	6	1		X			X	X									
CALOOSA COM. SCHOOL PARK	3	40					X		X	X	X		X				
CAPE CORAL COMM H S. PARK	3	10	X		X									X			
CARL JOHNSON WAYSIDE	10	11.5						X								X	
CLEMENTE PARK	1	5		X			X	X	X	X							
CYPRESS LAKE COMMUNITY PARK	2	40	X		X					X		X	X	X			
FLORIDA POWER & LIGHT PARK	5	7				X		X									
FT MYERS SHORES PARK	5	7					X										
HANCOCK PARK	3	17	X					X		X	X	X	X				
HIGHLANDS E. COMMUNITY PARK	1	11	X	X				X	X		X	X					
SCHULTZ FARM	1	11		X							X		X				
SUNCOAST COMM SCHOOL PARK	4	40								X	X	X					
TARPON BAY RD BEACH	13	1												X	X		
TERRY PARK	1	36	X									X	X				
TICE ELEM S. COMMUNITY PARK	1	5					X		X	X		X	X				
WATERWAY PARK	3	6	X	X			X	X	X	X	X					X	
SANIBEL/CAPTIVA SPORTS PARK	13	27								X	X	X					
BAY OAKS	10	7						X			X	X					
HARLEM HEIGHTS	11	50					X	X	X		X					X	
HUNTER PARK	2	9													X		
JUDD PARK	4	14	X			X	X	X		X	X				X	X	X
LYNN HALL PARK	10	4	X				X	X						X	X	X	X
LEHIGH COMMUNITY PARK	6	20	X				X	X		X	X	X	X		X		
LEHIGH COMMUNITY CENTER	6	3		X													
LEHIGH SENIOR CENTER	6	1		X													

	Planning District	Acres	REST ROOMS	RECREATION BLDG.	POOL	BOAT RAMP	PLAYGROUND EQUIP.	PICNIC AREA	BASKETBALL	TENNIS	SOFTBALL	BASEBALL	FOOTBALL/SOCCER	SWIMMING	FISHING	SHUTTER	DOCK
<u>REGIONAL PARKS</u>																	
BOWMAN'S BEACH	13	196												X	X		
CARL JOHNSON PARK	10	278	X				X	X						X	X	X	X
CAYO COSTA LAKES	14	640	X					X						X	X		X
LAKES	2	276	X				X	X						X	X	X	X
<u>UNDEVELOPED</u>																	
NALLE GRADE PARK	4	80															
BUCKINGHAM LAND FILL	7	70															
ORANGE RIVER PARK	7	15															
BUCKINGHAM RD EXT PARK	6	5															
HANCOCK CRK PARK	3	10															
IDALIA	5	10															
HICKEYS CREEK	5	10															
GREENDRIER	6	12 6															
EISENHOWER BLVD	6	12 14															
PERSIMMONS RIDGE RD.	5	40															
<u>SPECIAL AREA</u>																	
ALVA BOAT RAMP	5	1				X											
CAPE CORAL BRIDGE PARK	3	3													X		
C JOHNSON BOAT RAMP	10	1				X											X
FT MYERS SHORES BOAT RAMP	5	1				X											
LEE COUNTY CIVIC CENTER	5	1	X	X				X						X			

C. DATA BASE/METHODOLOGY

Classification System

Planning and programming for the provision of new facilities, and maintenance of existing ones, require consideration of the unique and specialized recreational needs of the population to be served. The inventory of parks and recreational facilities should be kept current as this information is essential for a responsive and responsible parks and recreational facilities system. The following classifications are intended to guide the provision of adequate facilities and services. It should be noted that not all service areas are similar in location, form, appearance, or population served. The typical facilities and services set forth for each classification will be adapted to suit the community in which they are located. The selection and siting of suitable facilities must be done carefully to insure that each will become an asset to the county.

1. Neighborhood Parks

One of the most easily identified and smallest planning units of an urban area is the neighborhood. Such areas are generally bordered by major streets which experience medium to high traffic volumes. Within the confines of these bordering streets, children are generally able to walk with a degree of safety from their homes to a park. Neighborhood parks are therefore designed as "walk-to" parks serving people in the immediate neighborhood and without barriers inhibiting safe movement.

The recreational facilities provided in neighborhood parks should be scaled to the needs and desires of the neighborhood citizens, taking into consideration their age, income and social background. Park facilities can include a multi-purpose play area, a playground for school children, free play area, a landscaped, shaded picnic area, a small activity shelter, informal sports fields and some minor provision for off-street parking. Bicycling or walking should be encouraged as the primary means of access by the provision of pedestrian and bicycle paths.

2. Community Parks

A community park is designed to serve the active, sports oriented recreation needs of a specific, defined community, or from four to six neighborhoods. Since teenagers and young adults utilize this type of park quite extensively, extra area is needed to permit activities which require large open areas and substantial facility development.

Community park facilities may include buildings suitable for meetings, indoor sports, and arts and crafts. In addition to indoor facilities, outdoor areas for active sports such as swimming, tennis, softball and open play should be provided along with extensive green areas, attractively landscaped for passive recreational pursuits. In order to create a "park-like" atmosphere, scenic qualities are desirable but not absolutely necessary. It is recommended that approximately one-fourth of the total area be undeveloped and landscaped open space.

In increasing the utility of the park to the immediate area it serves, selected areas and facilities should be lighted for night use. Adequate off-street parking should be provided. Recreational programs and facilities should reflect the needs and preferences of the community the park serves. The site should be easily accessible to bicycle and automobiles, and consideration should be given to access by public transportation. Community-wide access can be assisted by park location on collector roads near major arterials. The community park should be well buffered by space or vegetation from adjacent residential areas since they attract fairly large numbers of people.

3. Regional Parks

Regional or county-wide parks (designated by Florida Department of Natural Resources as Urban-District) are large acreage, resource-based parks. The primary purpose of this type of park is to provide access to specially attractive natural resources for the recreational enjoyment of all ages.

The actual location of this park type is dependent upon the availability of superior natural resource areas which are capable of being developed for outdoor recreation activities. In Lee County, regional parks should be located in areas that have water resources readily available--such as the Gulf of Mexico, rivers, creeks or lakes--because of the highly desirable recreational opportunities these features afford. Activities such as camping, boating, hiking, swimming, fishing, nature study and appreciation, picnicking, and some organized sports can all take place in regional parks.

Facilities within the regional park should promote both active and passive pursuits conducive to the enjoyment of nature. All facilities developed should harmonize with the natural character of the regional park. There is occasionally pressure to locate facilities in a regional park that are not in keeping with the purpose or design of the park. This can be avoided if the remainder of the county park system is developed to adequately meet these specialized needs.

Since regional parks are normally located outside the urbanized area, access is typically by automobile or public transit via a regional thoroughfare. Bicycle access should be provided for when feasible. Adequate parking is a necessity and should be designed to minimize adverse effects upon the natural environment.

4. Nature Preserves

The uniqueness of nature preserves makes it difficult to express an overall space or need standard which would facilitate analysis or to justify for preserving natural areas. The nature preserve areas in Lee County serve the dual purpose of combined water conservation and game management areas while serving the recreational needs of the region. Due to the primary function of these natural resource areas, emphasis is normally placed on resource oriented activities. (See Illustration #14).

Access to the fringe of the nature preserve is usually by automobile or bicycle paths, and access to the interior is provided by a variety of conveyances such as "wet" trails, boardwalks, observation towers, etc. There is a close relationship

between regional parks and nature preserves, since the location of available open space in the interior of the County indicates that preserve areas must serve a major segment of the total recreation needs of the regional park classification. The majority of areas classified as nature preserves in Lee County currently have areas designated for recreational use, and most have plans for expanded recreational uses which will be compatible with their natural character.

5. Special Areas

Special areas do not fit conveniently into any of the previously described categories. Included in this category are highway rest stop areas, greenways and landscaped median strips. Single purpose areas such as beach access and historic sites, boat ramps and fishing piers are also included in the category, but due to their widespread clientele are considered to be similar to a regional park resource. Special areas are necessary to serve special needs. They can take advantage of unusual physical sites and provide specialized opportunities which are beyond the scope of general purpose parks. Another advantage of special areas is that they supplement general purpose recreation areas where space is at a premium or recreational development is otherwise limited.

Special areas satisfy a variety of purposes. They may be aesthetic as well as functional. The Special Area category includes beach access points, boat ramps, fishing piers, bicycle paths, roadside parks and open space areas. Because of their multiple functions, the special areas are difficult to classify,

but they are still vital components of a parks and recreation program.

Therefore, it is important that these areas and auxiliary facilities are incorporated into the parks and recreation classification system.

Open Space areas are among the most difficult to define. A precise definition of the term "open space", as used for comprehensive planning purposes is not easily determined. It is difficult to find an exact accepted definition for open space and it remains one of the most elusive terms in modern planning literature. Even the State of Florida's guidelines for the parks and open space elements of the comprehensive planning process do not offer a precise definition of open space. Open space means many things to many people, and among these are many of the features we enjoy about Lee County as a place to live and work:

- The green, undeveloped countryside which is desirable for preservation in its natural state for ecological, historic, or recreational purposes;
- Agricultural lands used for crops, pastures, or groves;
- The Gulf beaches, the mangrove islands, bayous, and their associated tidal marshes; and
- The major and minor rivers and creeks that provide meandering flows of water for our use as well as our aesthetic enjoyment.

These various forms of open space serve to supplement the more "organized" recreational opportunities available at public parks and private amenities.

The value of open space to Lee County's residents and visitors has been demonstrated by the commitment to and usage of existing parks and residential facilities. Programs should be developed to help communicate the open space concept and its tremendous importance to the future rural and urban population of Lee County. Open space should be one of the main tools for balancing the unique rural/urban blend so highly prized and characteristic of Lee County today. An emphasis in public information and education on open space, as an aspect of the land use planning program, will result in an understanding of the need for the preservation of these areas in the years ahead.

D. STANDARDS

In order to insure adequate park provisions for present and future citizens, the County has adopted Florida Department of Natural Resources recommended park acreage standards for Community and Urban-District (or regional and county-wide parks as classified by Lee County Parks Department) parks. These standards are 2.00 park acres per thousand population and 5.00 park acres per thousand respectively. Table 2 outlines relevant data with regard to the current level of park provision by classification present in Lee County.

TABLE 2
LEE COUNTY PARKS/RECREATION

PLANNING DISTRICT	COMMUNITY PARKS (ACRES)	REGIONAL PARKS (ACRES)	UNDEVELOPED PARKLANDS (COUNTY OWNED)
1	59		
2	97	276	
3	75		10
4	91		80
5	59		60
6	25		30
7			85
8	62		
9			
10	28	278	
11	50		
12	4		1
13	30	196	
14		640	
15	22.5		

POPULATION	TOTAL	TOTAL	TOTAL
235,465*	Acres = 602.5	Acres = 1,390	Acres = 265.0
58,866 (25%)	Acres/1,000	Acres / 1,000	Acres /1,000
294,331	Total Pop. 2.04	Total Pop. 4.72	Total Pop. 1.10

* 1983 Figure - University of Florida estimate for April 1, 1983

E. NEEDS

The combination of rapid population growth and general inflation has resulted in a rapid increase in park land acquisition costs. Consequently, the county has attempted to acquire land for park development in anticipation of future need. As Table 2 shows, the county currently has 265 acres of undeveloped park land. At a ratio of 7.00 acres per 1,000 population to be served, these undeveloped acres will meet the park needs of an additional 70,000 people. This inventory of undeveloped park land is not sufficient to meet the needs of the projected population growth during the planning horizon of the Comprehensive Plan. During the planning horizon the Lee County Plan is being designed to accommodate a population increase of approximately 241,914 (includes 25%). At a ratio of 7.00 acres per 1,000, Lee County will need to add a total of 1,694 acres of parks. Given the present inventory of park land of 265 acres, approximately 1,429 acres of parks will have to be acquired and developed in the next 20 years.

F. CAPITAL IMPROVEMENTS

Priorities - General

Generally, the County will limit its responsibility to the provision of Community and Regional Parks and Special Recreational Facilities. The acquisition and development of community and regional parks are to a large degree a function of demand. The ratio between a planning area's current population and available park and recreation facilities can effectively measure demand when compared to adopted park standards. Functional thresholds

which trigger expenditures for park acquisition and development can thus be developed. In this manner a detailed and specific priority system can be established for park and recreation facility investments. The current thresholds for parks are:

- 1) a Community Park for each 4,000 resident population,
and
- 2) a Regional Park to each 27,000 resident population.

This index of demand should also be weighed together with other important park acquisition and development factors such as:

- a) valuable and significant natural or environmental features of significant benefit to the public, and
- b) special recreational needs or opportunities for the entire community.

Identification, acquisition and development of these latter must follow an opportunistic course.

Costs

Costs for parks are highly dependent upon the vagaries of land costs and the particular mix of facilities and recreational opportunities sought. Historical analysis demonstrates the following average costs of park acquisition by type over the last twelve years:

		<u>Land (\$/ac.)</u>	<u>Development</u>
Community Park	-	\$69,425	\$ 32,991
Regional Park	-	\$ 9,930	\$ 1,128
Special Area (Facility)	-	\$ 8,752	\$123,598

NOTE: All costs in 1984 dollars.

Current per capita costs for Community and Regional parks are about \$260. These costs are assumed to be consistent with those faced in the future.

Funding

While consistent with the general strategy of placing the burden of financing new facilities on new population, a broad and opportunistic strategy for funding capital investments in park and recreation facilities is recommended. The sources of funds include:

- 1) Impact fees (or dedication of suitable land in lieu thereof)-earmarked for the purpose and limited to benefit district (Policy VIII.A.10);
- 2) General funds (based on ad valorem taxes and other general revenues);
- 3) Special levies ad valorem (by referendum);
- 4) User charges and fees;
- 5) Federal and State grants (as available) and philanthropic gifts; and
- 6) Private ownership in favor of the public's interest (particularly of natural areas, wildlife sanctuaries, etc. providing open space and passive recreation and education).

In addition, there is expected mandatory provision of development specific and neighborhood parks by large scale developments (Policy VIII.A.1).

Priorities - Specific

Within the first five years of this plan, the County has identified a number of projects entailing capital investment in improvements of existing parks or recreation facilities or the development and construction of new. The detailed priority of each item is illustrated by the order in which construction is begun. These are set forth in Table 3.

TABLE 3
PARKS, RECREATION AND OPEN SPACE

CAPITAL IMPROVEMENTS

1984-5 - 1988-9

<u>Project</u>	<u>Year Construction Begins (Continues)</u>	
Bowmans Beach Park (Improvements)	1984-5	
Highlands East Park (Improvements & Equipment)	1984-5	
Caloosa (Middle School) Park (Improvements)	1984-5	
Rutenberg Park (Improvements)	1984-5	(1986-7)
Nalle Grade Park (initial plan and design, basic construction)	1984-5	(1985-6)
Lakes Park (Improvements)	1984-5	
Boating Improvement Projects	1984-5	
Pelican Park (Improvements)	1984-5	(1985-6)
Civic Center Parking	1984-5	(1985-6)
Boca Grande Lighthouse restoration & renovation	1985-6	
Bay Oak Park (Improvements & Equipment)	1985-6	
Bonita Springs Park (Improvements and Equipment)	1985-6	(1986-7)
Lehigh Acres Park (Improvements & Equipment)	1985-6	
Terry Park (Improvements)	1985-6	
Horton Boat Ramp	1985-6	
Fort Myers Beach Park (Improvements and Equipment)		1986-7
Bonita Springs Park (Swimming Pool)		1986-7
San Carlos Community Park (Swimming Pool)		1986-7
Harlem Heights Recreation Center		1986-7
Miner's Corner Sr. Center		1987-8
Rutenberg Park (Community Center--see also Libraries)		1988-9
Bonita Springs/Ft. Myers Beach Sr. Center		1988-9

SOURCE: Capital Improvement Program 1984-5--1988-9, Lee County Board of County Commissioners, no date (1984).

G. GOALS, POLICIES AND OBJECTIVESGENERAL GOAL

To provide diverse parks, recreational facilities and activities, and open spaces of high quality for Lee County residents and visitors.

A. PARKS AND RECREATION FACILITIES

Goal VIII.A: To supply sufficient parks and recreational facilities to meet County needs, according to the Standards established in Section G in this Comprehensive Plan.

Objective VIII.A: Coordinate efforts/programs with all levels of government in providing recreational opportunities for all residents of Lee County, as provided for in the Intergovernmental Element of the Lee County Comprehensive Plan.

Policy VIII.A.1. The County shall require, through its development regulations, the provision of sufficient neighborhood parks designed to meet the recreational needs of the occupants for all new residential developments via land dedications, fees in lieu, the provision of common areas, or other innovative means. In addition, the County development regulations shall require that the maintenance of these neighborhood parks be the responsibility of the developer or development.

- Policy VIII.A.2. The County shall identify significant cultural and historical sites and acquire identified sites, as feasible, to insure the availability of cultural enrichment and recreational benefit.
- Policy VIII.A.3. The County shall upgrade existing parks and recreational facilities, as needed, to maintain a high level of service.
- Policy VIII.A.4. The County shall seek additional funding sources to augment ad valorem tax revenues for acquisition, capital improvements, and maintenance of parks and recreational facilities.
- Policy VIII.A.5. The County shall provide for the means for the allocation of sufficient funds to adequately supervise and maintain for existing and future County parks and recreational facilities in order to protect the public investment.
- Policy VIII.A.6. The County shall consider the policies and actions of the Land Use and Conservation and Coastal Zone Management elements along with other appropriate plans, when recommending acquisition of environmentally sensitive or critical areas for parks, open space, and recreational areas.

Policy VIII.A.7. The County shall insure that any development of recreational facilities in environmentally sensitive areas, as identified in the Land Use Element, be of a compatible nature. The recreational development shall maintain or improve the existing environmental quality.

Policy VIII.A.8. The County shall consider, but not be limited to, the following criteria when determining the acquisition potential of environmentally sensitive lands for parks, recreation, and open space:

1. unique features, such as plant communities, wildlife populations, sand dune and dune lines and geological formations,
2. critical ecological functions, such as protecting surface or groundwater quality and supply,
3. relatively undisturbed examples of native biological communities, and
4. locations and features suitable for outdoor education programs.

Policy VIII.A.9.: Land development shall not be permitted unless adequate parks exist or are assured. Land development shall bear a proportionate cost of the provision of new or expanded parks required by such development. The

imposition of impact fees and dedication requirements are the preferred methods of insuring that land development bears a proportionate share of the cost of parks necessary to accommodate that development and to promote the public health, safety, and general welfare.

Policy VIII.A.10.: Within one year after the adoption of this plan, the County shall adopt and implement an equitable system of impact fees for community and regional parks based on the proportionate cost of the provision of new or expanded parks required by new development in order to provide sufficient park acreage to maintain standards adopted in Section D.

B. LOCATION AND ACCESS

Goal VIII.B: To provide park and recreational opportunities to all residents regardless of age, sex, income, race, handicap, or interest.

Objective VIII.B: Provide parks and open spaces with equitable access and distribution among the population of the Planning Districts, as defined in the introduction of the Lee County Comprehensive Plan.

Policy VIII.B.1. Lee County shall strive to locate parks and recreation areas with access to urban service area residents.

Policy VIII.B.2. Lee County shall require that buffering be provided to avoid conflicts between different recreational uses and between recreational and adjacent uses.

Policy VIII.B.3. Lee County may utilize County school sites as locations for neighborhood and community parks, where determined appropriate and feasible by the Department of Parks and Recreation.

Policy VIII.B.4. Lee County shall guarantee the availability of beach recreational areas equipped with sufficient parking facilities to insure user convenience and to avoid unnecessary disruption of adjacent neighborhoods. In addition, Lee County shall secure and maintain adequate and environmentally responsive public beach access, through the maintenance of a beach access program which shall include:

1. acquisition of suitable beach properties for public use and enjoyment in accordance with the Standards addressing beaches and beach access;
2. assurances that beach access acquisition is coordinated and has equal priority with beachfront acquisition;
3. assurances that no present public access be infringed upon or vacated;

4. assurances that an ongoing program of beach access maintenance and upkeep is carried out in accordance with jurisdictional authority over the particular beach access. This maintenance program will encompass: 1) adequate provision of trash removal; 2) placement of beach access markers at visible points along its intersection with a major thoroughfare; 3) designating beach access areas with parking restrictions by providing adequate regulatory signs; 4) continued enforcement of parking restrictions at beach accesses that have such limitations by the proper law enforcement authorities; 5) development of native beach vegetation, landscaped entryways at access points where space allows; and 6) coordination of this program with the intent and aims of the Coastal Zone and Conservation Element as it applies to beach preservation and public access; and,
5. coordination of present and future locations of parks and recreational facilities with existing and proposed transportation systems (including public transit where feasible) and that

6. private property rights are not infringed upon by the improvement of access and expenditure of County funds to specific beach areas under private ownership.

Policy VIII.B.5. Lee County shall consider when determining the need for additional parks, recreational facilities, and open space and locations the population density and socioeconomic characteristics, location of other recreational and open space areas in the vicinity, and access to private recreational lands and facilities. County recreational funds, excluding accrued impact fees, shall be allocated on a fair and equitable basis with those planning demonstrating the most need having priority.

Policy VIII.B.6: Lee County shall inventory existing public beach acreage and determine its adequacy in order to develop standards to be used to establish a beach acquisition program to ensure sufficient beach acreage for future populations.

C. OPEN SPACE AND AESTHETICS

Goal VIII.C: To establish and preserve sufficient open space areas to provide for aesthetic and

environmental values the public health, safety, and welfare by preserving aesthetic and environmental amenities.

Objective VIII.C: Protect public parks, easements, and open space from conversion to incompatible public or private uses.

Policy VIII.C.2. Lee County shall make available public open space areas, such as the Six Mile Cypress Preserve, for limited and compatible recreational uses, where feasible.

Policy VIII.C.3. Lee County shall designate and evaluate open space areas in a manner consistent with other applicable Comprehensive Plan Elements.

D. PROGRAMS AND ACTIVITIES

Goal VIII.D: To promote recreational programs and services to enrich the lives of residents and visitors.

Objective VIII.D: To periodically review existing and proposed recreational facilities and activities in order to identify needed improvements, and to insure the delivery of responsive and appropriate services.

Policy VIII.D.1. Lee County's Department of Parks and Recreation shall provide for, through Florida Boating Improvement Program grants and all other means, navigational improvements, boat launching facilities and other recreational boating activities.

- Policy VIII.D.2. Lee County, upon adoption of this Plan, shall adopt an Impact Fee program to assist in the provision of Community and Regional Parks.
- Policy VIII.D.3. Lee County shall maintain a continuing program of open space protection and preservation for Areas in Lee County which are essential for maintaining an ecological balance, the public safety and welfare, natural resources, and historic and scenic values.
- Policy VIII.D.4. Lee County shall maintain and improve the aesthetic quality of parks and recreational facilities through a comprehensive beautification program, including innovative and appropriate landscape design.
- Policy VIII.D.5. Lee County shall provide leisure activity opportunities to County residents to enhance their health and well being.
- Policy VIII.D.6. Lee County shall promote enrichment programs to acquaint residents and visitors with the unique, natural, historical and cultural assets of Lee County.
- Policy VIII.D.7. Lee County shall offer environmental interpretive programs and facilities in coordination with the Lee County School Board Environmental Education Center and the Department of Parks and Recreation.

Policy VIII.D.8. Lee County shall determine and program appropriate public recreational uses for historic and cultural sites, consistent with the Historic and Scenic Preservation Element of the Comprehensive Plan.

Policy VIII.D.9. Lee County shall provide current information concerning the availability of recreational program activities throughout the County, in coordination with other recreational service providers.

E. ADMINISTRATION AND COORDINATION

Goal VIII.E: To administer the parks and recreation programs and services, in coordination with other public and private efforts, to efficiently and effectively provide facilities and activities for recreational pursuits.

Objective VIII.E: Encourage the use of public and private properties, where appropriate, as supplemental areas for park and recreational use.

Policy VIII.E.1. All persons shall submit proposed conversions from public parks and open space lands to other land uses to Lee County for review and approval. Approval shall be granted only if the proposed conversion is consistent with the requirements of the comprehensive plan.

Policy VIII.E.2.

Lee County's Department of Parks and Recreation will enter into joint-use agreements with the Lee County School Board for maintenance and operation of school sites for park and recreation uses whenever feasible.

Policy VIII.E.3.

Lee County's Department of Parks and Recreation shall encourage cooperation among other local governments, private utilities, and regulatory agencies for the purpose of exploring the feasibility of using rights-of-way, easements, and vacant land for public recreation.

Policy VIII.E.4.

Lee County's Department of Parks and Recreation shall monitor the efficiency, responsiveness, and success of its recreational programs by conducting assessments of recreation preferences, program participation, and attendance.

Policy VIII.E.5.

Lee County's Department of Parks and Recreation shall prepare and update on an annual basis a five-year Comprehensive Park Development Program. The park development program shall be consistent with the County Comprehensive Plan and capital improvements program.

H. CONSISTENCY WITH OTHER PLAN ELEMENTS

The Parks, Recreation, and Open Space Element serves as a framework to guide the County's efforts in providing adequate public recreational opportunities for an ever expanding population. In order for this to be a workable framework, consistency with the goals, objectives, and policies of all other Plan elements is essential.

Public parks are an integral urban service, and should be appropriately located so as to primarily serve the urban population. Locational criteria for future parklands as included in the Land Use Element serve to supplement, as well as qualify, the goals, policies, and objectives included herein. These locational criteria are consistent with the Traffic Circulation and Mass Transit Elements by virtue of access, rights-of-way, routing, and circulation system commitments. Furthermore, the County's efforts to implement the conservation of bona fide historic/ archeologic and environmentally significant sites can be assisted by the public acquisition of parkland and open space.

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IX. CONSERVATION AND COASTAL ZONE MANAGEMENT ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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IX. CONSERVATION AND COASTAL ZONE MANAGEMENT ELEMENTINTRODUCTIONA. Purpose

The quality of the environment, both natural and built, is of most significant concern to the residents of Lee County. Unless locally responsive and responsible resource development and conservation practices are implemented, resources will continue to be degraded and used inefficiently. The existing and potential problems of degradation are most critical in the coastal zone and estuarine systems. The relationship of coastal and estuarine systems to the wetlands, waterways and uplands of the remainder of the county must be recognized, and the cumulative effect of all development considered and addressed. Comprehensive planning, sound conservation and development practices, and the proper implementation of both, are necessary to ensure the preservation, enhancement, and restoration of the natural environment in balance with the built environment.

Since the Coastal and Conservation elements address many interrelated concerns, and are to be consistent and coordinated according to the state statutory language, these elements have been combined in the Lee Plan.

For Lee County, the coastal zone includes natural communities of the marine/estuarine and terrestrial ecosystems.

The marine/estuarine ecosystem is characterized by the subtidal, intertidal and supratidal zones of the Gulf of Mexico, coastal bays, lagoons, and tributaries, landward to the point at

which seawater becomes significantly diluted with freshwater in flow from land. The highly productive seagrass beds are sparsely distributed in the open gulf but form extensive submarine communities within the coastal bays and lagoons. Turtle Grass (Thalassia testudinum) and Manatee Grass (Cymodocea filiformis) and Shoal Grass (Halodule wrightii) are the local seagrasses. The forested and non-forested saltwater wetlands occupy the low energy shoreline of the estuarine system including coastal tributaries. The wetland-hardwood forest is dominated by a mangrove community consisting of Red Mangrove (Rizophora mangle), Black Mangrove (Avicennia germinans), White Mangrove (Laguncularia racemosa), Buttonwood (Conocarpus erecta), Saltwort (Batis maritima) and Glasswort (Salicornia virginica). The tidal marshes include such typical plants as Cordgrass (Spartina spp.), Needle-rush (Juncus roemerianus), Saltgrass (Distichlis spicata) and Sea Oxeye (Borrichia frutescens).

The Coastal terrestrial ecosystem includes beaches, dunes, coastal ridge, overwash plain and shell mound. Some beaches and dunes fringe the estuarine system but are predominant along the edge of the Gulf of Mexico. The beach-dune system extends landward from the open sandy foreshore to the vegetated dunes dominated by low growing plants such as Sea Oats (Uniola paniculata), Railroad Vine (Ipomoeae pes caprae), Beach Berry (Scaevola plumieri), Sea Purslane (Sesuvium portulacastrum) and Sand Spurs (Cenchrus sp.). The stabilized sand substrate of the coastal ridge is slightly higher and inland of the beach-dune system. Vegetation characteristic of the coastal ridge includes Bay Cedar

(Suriana maritima), Wild Olive (Forestiera segregata), Marsh Elder (Iva imbricata), Spanish Bayonets (Yucca sp.), Prickly Pear Cacti (Opuntia sp.), Sea Grape (Coccoloba uvifera), and Cabbage Palm (Sabal palmetto). Overwash plains such as those found at the southern end of Gasparilla Island and at Lovers Key are not common to the landscape of Lee County. The flat sand substrate of the overwash plains are tidally influenced by a combination of heavy seasonal rains and high spring tides or major storms. Salient vegetation includes Buttonwood (Conocarpus erecta), Saltgrass (Distichlis spicata), Sea Oxeye (Borrichia frutescens) and some mangrove. Indian middens with shell substrate, characteristically described as shell mounds, are found along the coastal ridge of the mainland and barrier islands and on small isolated islands. Typical vegetation found on shell mounds includes Gumbo Limbo (Bursera simaruba), Strangler Fig (Ficus aurea) and the Mastic Tree (Mastichodendron foetidissimum).

B. Data Base; Methodology

The data base supportive of the natural resource management guidelines set forth in this element was derived from state land classification inventories and County-wide surveys and study reports. The definition of the coastal zone for Lee County was based on natural resource communities selected and consolidated from the Florida Natural Areas Inventory (1983) and the Florida Land Use and Cover Classification System (1976).

Significant inland water resource systems were identified, assessed and mapped by the South Florida Water Management District Lee County Water Resource Mapping Program (1982), Camp Dresser and McKee special area study (1984), and The Lee County Master Water Plan prepared by Hole, Montes and Associates, Inc., (1981). Environmentally critical lands delineated in the Land Use Plan include the designated Resource Protection Areas and Transition Zones. (See Illustration #15).

The designated Resource Protection Areas and Transition Zones were identified in accordance with the South Florida Water Management District Land Use and Land Cover Classification System (1977), the Lee County Water Resource Mapping Program (1982), and the U.S. Fish and Wildlife Service Wetlands Inventory (1977). Soils criteria from the U.S. Soil Conservation Service National Soils Handbook (1980) was also used to evaluate Resource Protection Areas (Appendix 1).

SECTIONS - GOALS, OBJECTIVES AND POLICIES

This element is divided into seven sections which address development as it relates to the conservation and stewardship of the natural resources of Lee County. Goals, objectives and policies consistent with the Charlotte Harbor Management Plan have been developed for Water Resources, Water Quality and Wastewater, Floodplain and Drainage, Wetlands, Coastal Zone and Estuaries, Air Quality, and Resource Conservation and Development.

IX.A. Water Resources

Effective water resource management is becoming more difficult as a result of increased population and accompanying urban growth. During the summer months, the area receives most of its rainfall, which was formerly retained in lakes and wetland areas and then slowly released throughout the drier months via sheet flow and infiltration to underground aquifers. When the area began to be settled in greater numbers, water was regarded as a "common enemy" under legal doctrine wherein each landowner had an unqualified right to fend off or dispose of surface waters without being required to take into account the consequences to other landowners, who enjoyed the same right. With the desire to remove water from the land by the quickest means possible began the practice of dredging and filling which continues to the present day.

Large canal networks and drainage systems were excavated to drain off standing water and the excavated material was deposited alongside to create higher, more buildable land. While this method did succeed in reducing flooding, the combination of increased impervious surfaces and extensive drainage systems resulted in shortages of water during the dry season. The existing ecological balance which had evolved in the area was altered, increasing the flow of freshwater to the estuaries in the summer while reducing it in the winter, and thus changing plant and animal populations.

One critical result of the widespread dredging and filling of the freshwater wetlands has been the partial loss of aquifer

recharge. Beneath the surface of Lee County are several aquifers--permeable, water-bearing geologic strata. These begin with the water table, which is closest to the surface, and include the sandstone, upper and lower Hawthorn, and Suwanee aquifers layered between other strata down to a depth of greater than 700 feet. These aquifers supply a large portion of the freshwater needed for human use. Another source of freshwater in the County is the Caloosahatchee River. The protection and maintenance of natural water resource systems including but not limited to lands of the designated Resource Protection Areas and Transitional Zones are essential to insure water supplies of sufficient quantity and quality for projected population growth.

Goal IX.A: To conserve, manage, and protect the natural hydrologic system of Lee County to insure continued water resource availability.

Obj. IX.A: Insure water supplies of sufficient quantity and quality to meet the present and projected demands of all consumers and the environment, based on the capacity of the natural system.

Policy IX.A.1. Natural water system features which are essential for retention, detention, purification, runoff, recharge and maintenance of stream flows and groundwater levels shall be identified, protected, and managed.

Policy IX.A.2. The County shall recognize and encourage water and wastewater management, provided that such management does not exceed the natural assimilative capacity of the environment or applicable health standards. Appropriate water and wastewater management includes, but is not limited to, groundwater and aquifer recharge, spray or drip irrigation, gray-water systems, agricultural production and other recycling techniques.

Policy IX.A.3. Freshwater resources shall be managed in order to maintain adequate freshwater supplies during dry periods and to conserve water.

Policy IX.A.4. Development designs shall provide for maintaining surface water flows, groundwater levels, and lake levels at or above existing conditions.

Policy IX.A.5. Development affecting coastal and estuarine water resources shall maintain or enhance the biological and economic productivity of these resources.

Policy IX.A.6. The County shall assess available water resources data and prepare an areawide water resource plan.

Policy IX.A.7. The County shall cooperate with the United States Geological Survey, South Florida Water Management District and State agencies to develop an areawide water resources plan emphasizing planning and management of water resources on the basis of drainage basins; and addressing the needs of the existing and potential built environment, natural hydrologic system requirements, and freshwater flow impacts on estuarine systems.

Policy IX.A.8. The County shall establish a monitoring program of existing baseline conditions of water resources and discharges into ground and surface waters.

IX.B. Water Quality and Wastewater

The continual movement of water interconnects with the air, the ground, and the open waters. These interconnections collectively constitute the hydrologic cycle. The cyclical nature of the hydrologic system necessitates prudent management and treatment of water that affects the integrity of the environment and health and safety of Lee County residents.

The maintenance of high quality water for use by natural systems and human consumption becomes increasingly difficult due to the impact of development on ground and surface water. The Caloosahatchee River has an excess of nutrients, especially nitrogen and phosphorus contained in the low quality water flowing from Lake Okeechobee. Surface water runoff that drains urban

and agriculture areas is often laden with nutrients, pesticides, herbicides, fertilizers and other deleterious substances as it flows towards freshwater and estuarine systems. Inadequately treated sewage effluent discharged from wastewater treatment facilities adversely impacts the water resources of Lee County. Increased numbers of septic tanks in the vicinity of Matlacha and Estero Bay threaten estuarine water quality in these areas. Sub-surface aquifers have been contaminated by saltwater intrusion -- a result of the loss of hydrostatic freshwater pressure due to excessive pumping, extensive drainage and canal systems, the drainage of wetlands, and improperly cased or deteriorated wells. The lower the quality of raw water, the more costly treatment becomes to achieve potable standards.

Water is an essential requirement for all living things and water of poor quality is a serious threat to the health and vitality of any area. All development should be required to provide retention and detention ponds and vegetated swale systems that trap and remove suspended solids and pollutants contained in surface water runoff. Natural systems including forests and wetlands help to purify and filter surface water runoff. Natural vegetated systems should be included in water quality control programs planned in designated Rural Areas, Open Lands, Transition Zones and Resource Protection Areas.

The quality of surface and ground water is inextricably linked to the standard of treatment of sewage effluent. County regulatory authority of wastewater services should insure adequate and properly designed sewage collection systems for the

treatment and discharge of any liquid or solid wastes so as not to contribute to the pollution of estuarine and freshwater systems. It is imperative that any development in the cone of influence of natural recharge areas including, but not limited to, the Six Mile Cypress Watershed Basin and the designated Resource Protection Areas and Transition Zones of southeast Lee County provide for the most advanced wastewater treatment available.

Goal IX.B: To ensure that water quality is maintained or improved for the protection of the environment and people of Lee County.

Obj. IX.B.1.: Maintain the best possible water quality, meeting or exceeding State and Federal water quality standards.

Obj. IX.B.2.: Sources of water pollution shall be identified, controlled, and eliminated wherever feasible.

Policy IX.B.1. New developments shall not degrade surface and ground water quality.

Policy IX.B.2. The design, construction and maintenance of artificial drainage systems shall provide for retention and detention areas and vegetated swale systems that minimize nutrient loading and pollution of freshwater and estuarine systems.

Policy IX.B.3. The County shall cooperate with the South Florida Water Management District, local utilities, and other appropriate agencies for monitoring and review of freshwater discharges affecting estuarine areas, in order to maintain the biological and chemical balances necessary for optimum productivity.

Policy IX.B.4. Developments which have the potential of lowering existing water quality below state and federal water quality standards shall provide standardized appropriate monitoring data.

Policy IX.B.5. New developments shall demonstrate compliance with all applicable Federal, State and local water quality standards.

Policy IX.B.6. No garbage or untreated sewage shall be discharged into coastal and interior surface waters.

Policy IX.B.7. The County shall cooperate with the Florida Marine Patrol, U.S. Coast Guard, U.S. Army Corps of Engineers and the Florida Department of Environmental Regulation in the enforcement of pollution control standards for marinas, marine dumping, and illegal discharges from water craft.

Policy IX.B.8. Installation of shoreside pumpout stations at marinas that serve live-aboards shall be required to provide adequate facilities for subsequent transfer and treatment of boat sewage.

Policy IX.B.9. The County shall initiate a wellfield protection program to prevent the contamination of shallow wells by pollutant generating development including surface water runoff.

Policy IX.B.10 Valid permits and inspections shall be required prior and subsequent to drilling operations for wells, elevator shafts, foundation holes and test borings.

Policy IX.B.11 The County shall participate in a program to plug improperly constructed wells which are detrimental to ground water resources.

IX.C. Floodplain and Surface Water Management (See Illustration #16).

Development in coastal and interior flood prone areas places lives and property in immediate danger from flooding and storm surge and results in severe alteration of natural drainage systems. Future development in flood hazard areas as determined by the South Florida Water Management District and the Federal Emergency Management Administration should comply with sensitive performance and design standards protective of the function of flood plains which ultimately contribute to the protection of

human life. The preservation and maintenance of floodplain drainage systems allows for flood water from severe storms and sheet flow from seasonal rains to spread overland resulting in slow rate of runoff. Decreasing the rate and volume of surface runoff reduces the threat of flooding and sedimentation build-up of downstream areas. In addition, slow flow of runoff enhances water storage, recharge and purification.

Artificial drainage systems can be patterned to simulate the natural function of floodplain drainage systems. Development that makes use of retention and detention ponds for the collection and storage of surface water and the subsequent release into vegetated swales, provides a system that allows for runoff to approximate the natural flow prior to development.

Goal IX.C 1: To ensure the continuation of the natural floodplain drainage systems.

Goal IX.C 2: To ensure that surface water runoff from land altered by development approximates the total characteristics of the natural flow prior to development.

Obj. IX.C 1: Provide sufficient performance and design standards for development in floodplain areas protective of the function of natural drainage systems.

Obj. IX.C 2: Provide sufficient performance and design standards to require post development runoff to approximate the natural flow prior to development.

Policy IX.C.1. Floodplains shall be managed to minimize the potential loss of life and damage to property by flooding.

Policy IX.C.2. Floodways should be kept as unobstructed as possible.

Policy IX.C.3. Natural flow patterns shall be publicly restored where such action is of significant public benefit, and feasible.

Policy IX.C.4. Surface water management systems shall demonstrate adequate operation and maintenance programs.

Policy IX.C.5. The County shall adopt regulations which provide for the management and protection of floodplains, consistent with regulations of State and Federal regulations.

Policy IX.C.6. Future development shall be consistent with the master surface water management plan, which shall be adopted by the County.

Policy IX.C.7. Developments shall have and maintain an adequate surface water management system, provision for acceptable programs for operation and maintenance, and post-development runoff conditions which approximate the natural surface water flow in terms of rate, quality, hydroperiod and drainage basin.

Policy IX.C.8. Artificial channelization of natural watercourses shall be discouraged.

Policy IX.C.9 The banks of wet retention and detention areas shall be sloped to promote growth of vegetation and safeguard against accidents.

Standard IX.C.1. New artificial drainage systems shall not channel runoff directly into waterbodies.

Standard IX.C.2. Runoff shall be routed through retention and detention ponds and vegetated swales in order to reduce flow velocity, allow for percolation and trap and remove suspended solids and pollutants.

Standard IX.C.3. Installation of erosion and sedimentation control devices for development activities adjacent to waterbodies, water courses and

wetlands shall be required. Such control devices shall be maintained to insure operational effectiveness.

Standard IX.C.4. Artificial watercourses shall be designed so as to reduce velocity of runoff and prevent erosion.

Standard IX.C.5. The design of shorelines of retention and detention areas and other excavations shall be sinuous rather than straight.

IX.D. Wetlands

Fresh and saltwater wetlands provide economic and environmental values to Lee County residents as well as valuable habitat for fish and wildlife and should be incorporated in the designated Resource Protection Areas.

The topography of freshwater wetland systems is suited to the collection and storage of surface water runoff and infiltration of surficial and deepwater aquifers. Filtration of suspended solids and pollutants occurs as runoff flows through vegetated areas, and percolates to the ground water table. The marsh and slough systems of freshwater wetlands together with adjacent uplands creates a heterogeneous environment that supports a diversity of plant and animal species.

The saltwater wetland system provides for storm protection, flood attenuation, filtration that improves water quality of estuarine systems and the detritus base of the marine food web.

The diverse plant communities ranging from the *Spartina-Juncus* marsh to the mangrove forests provide food and cover for animal life.

Adjacent to freshwater and saltwater wetlands are transition zones. These zones are slightly higher and drier and characterized by a mixture of plant species typical of uplands and major wetland systems. The contiguous nature of transition zones and major wetlands serve to expand land area suitable for dispersion of surface water runoff and infiltration to ground water systems. Support buffering protects major wetlands from fire and invasion of exotic vegetation and provides for filtration of pollutants and excess nutrients. The interconnection of transition zones to major wetlands and uplands creates an edge effect which allows for a high diversity of flora and fauna. Transition zones and major wetland systems are integral components of natural water resource areas and should be conserved and managed as environmentally sensitive lands.

Goal IX.D: To conserve, manage and protect the natural ecological function of wetlands.

Obj. IX.D: Provide for density, performance and design standards for development in wetlands sensitive to the fragile environmental characteristics of wetland systems.

Policy IX.D.1. The County shall require land uses and development designs which protect the values and functions of wetlands, and, to the maximum extent possible, avoid the drainage, filling or excavation of wetlands.

Policy IX.D.2. Restoration or mitigation programs shall be required for development which causes destruction or functional degradation of wetland areas.

Policy IX.D.3. The Division of Community Development shall prepare and maintain an inventory of typical plant species characteristic of fresh water and salt-water wetlands and transition zones and shall prepare and maintain maps identifying significant wetland systems of Resource Protection Areas and Transition Zones which specify appropriate uses in these areas.

Policy IX.D.4. The County shall insure through appropriate regulations the management and protection of transition zones, in recognition of their function as protective buffers for wetlands.

Policy IX.D.5 All lands exhibiting soil types, hydrologic and vegetation characteristic of freshwater and salt-water wetlands, are classified as Resource Protection Areas.

IX.E. Coastal Zone and Estuaries

The coast of Lee County comprises a significant part of one of the most vital and productive coastal areas in the United States. Its 590 miles of shoreline is the fourth most extensive in the State of Florida, and there are over 50 miles of sandy beach. The beaches are not stable, and shift configuration in response to the dynamic action of the wind and waves. They are not suitable for permanent construction, which causes irreparable alteration. Protection of beach stabilizing native vegetation will help prevent excessive erosion. The many barrier islands known widely for their beauty and recreational value, buffer the coastal mainland from destructive tropical storms. These islands have experienced a wide variety of development, from the almost pristine splendor of Cayo Costa to the energy and activity intensive resort areas on Estero Island. It is now an established national and State policy, as recognized in the Federal Coastal Zone Management Act and supported by the Charlotte Harbor Management Plan and by a consensus of governmental policies and expert opinion, that barrier islands are not appropriate locations for intensive development, considering environmental and public safety reasons.

Among the most productive resources in the coastal zone are the mangrove forests, tidal marshes, and submerged marine grass beds. These communities perform several vital functions, including provision of fish and wildlife habitat and forming the basis of some of the food chain hierarchy. The second most extensive marine grass beds and fourth largest mangrove forest coverage in

Florida are located in Lee County. Mangroves are also essential for shoreline stabilization and storm protection. Perhaps the most tangible product of the coastal zone comes from the commercial fishing industry, which ranks second among all Florida counties. The economic contribution of sport fishing is estimated to be at least two to three times as large, and the two industries together add well in excess of \$200 million annually to Lee County's economy.

Abundantly productive in a natural state, the forested and non-forested saltwater wetlands have eminent ecological value and minimal development value. The ecological value is reversed when the land is drastically altered by the dredging and filling necessary to create development. Development landward of the County and the Department of Natural Resources Coastal construction control line along the coastal ridge is possible, but will result in environmental degradation unless special care is taken. The most critical requirement of the coastal zone is that it be understood and managed as a complete system. Beaches, dunes, coastal ridge, mangroves, tidal marshes, marine grass beds and estuaries -- important as they may be individually -- derive their full significance as integral components of the coastal zone.

One of the most important physical factors affecting the coastal estuaries is the amount, rate, and quality of freshwater runoff flowing from the uplands. The character of the runoff is in turn affected by the upland land use, with freshwater wetlands and open space being the most important. This runoff is vital to

the continued high productivity in the estuaries and is a primary reason why concern for the health of the natural systems in the coastal zone must not stop at the beaches, but extend to the intensity and location of all land use in the county.

The recreational amenities of the coastal zone are highly valued by the tourists and residents of Lee County. Current available public beach and boating accesses are heavily used and will not meet the demands of an expanding population. There is an urgent need for the County to address the problems of public beach and boating accesses as well as providing for adequate parking and restroom facilities at appropriate access points. The construction of elevated walkways will minimize degradation of the beach-dune system at the selected beach access points.

Goal IX.E: To preserve, restore, and enhance the natural balance of ecological functions in the coastal zone.

Obj. IX. E: Manage the coastal zone to provide a balance among conservation of resources, public safety capabilities and development.

Policy IX.E.1. The Lee County coastal zone shall include, at the minimum, the following natural systems:

- (1) Marine - Gulf of Mexico

- (2) Estuarine - Coastal Bays
 - Coastal Lagoons
 - Coastal Tributaries
 - Forested Saltwater Wetlands
 - Non-Forested Saltwater Wetlands
 - Sea Grass Beds

- (3) Terrestrial - Beaches
 - Dunes
 - Coastal Ridge
 - Overwash Plain
 - Shell Mound

Policy IX.E.2. The coastal zone, with significant public value for water retention and purification, wildlife habitat, primary productivity, and dynamic geology shall be protected through the development permitting process and enforcement of appropriate codes and regulations.

Policy IX.E.3. Development within the coastal zone shall be compatible with protection of natural systems and in accordance with applicable coastal construction codes.

Policy IX.E.4. The County shall provide for adequate public beach and boating access to accommodate the demands of an expanding population.

Policy IX.E.5. Further development on barrier islands shall be discouraged and construction of vehicular access to, and paved roads or commercial marinas on, undeveloped barrier islands shall be prohibited, as mandated by the Charlotte Harbor Management Plan.

Policy IX.E.6. Lee County shall protect, and conserve through regulation, incentives, acquisition, and sound policy guidance, the following environmentally sensitive coastal areas: wetlands, estuaries, floodplains, mangrove stands, barrier islands, beach and dune systems, aquatic preserves and wildlife refuges, undeveloped tidal creeks and inlets, critical wildlife habitats, benthic communities, and marine grass beds.

Policy IX.E.7. Future development in flood prone areas shall be compatible with evacuation and public safety capabilities, including policies of the Disaster Preparedness sub-element of this plan.

Policy IX.E.8. All developments shall adhere to coastal construction control line criteria, as established by Lee County and the State, to prevent or reduce beach erosion, property damage and human injury.

Policy IX.E.9. Construction of environmentally compatible shoreline stabilizing systems shall be allowed along the active gulf beach where necessary for the protection of shorelines from erosion.

Policy IX.E.10 Vertical seawalls should not be constructed along natural water bodies except where no reasonable alternative exists, and seawalls without an adequate littoral zone should not be constructed along artificial canals although seawalls along artificial canals where 50% of the canal or greater is seawalled, or for seawalls of less than 300 feet where both adjoining properties are seawalled, will be exempt from this requirement.

Policy IX.E.11 The County shall encourage planting of mangroves or placement of rip-rap in artificial and natural canal systems to replace existing seawalls in need of repair.

Policy IX.E.12 The County shall gather and utilize available technical criteria and supporting information necessary to guide the formulation of plans,

ordinances, and regulations to insure that development in the coastal zone is compatible with the functioning of the natural coastal systems.

Policy IX.E.13 The County shall adopt regulations protective of the archeological resources within the coastal zone.

IX.F. Air Quality

Air quality is generally very good in Lee County. The main air pollution problem is a result of vehicular traffic, which does not always flow or consume fuel in an efficient fashion. This problem is exacerbated during the peak tourist season when there is an increase in the level of ozone measured. Open burning of debris from land clearing and particulate matter from development activities poses an additional threat to air quality.

Goal IX.F: To ensure that air quality is maintained or improved for the protection of the environment and people of Lee County.

Obj. IX.F: Maintain the best possible air quality, meeting or exceeding State and Federal air quality standards.

Policy IX.F.1. Development shall maintain existing air quality and prevent significant emissions of air pollution.

Policy IX.F.2. The County shall support enforcement of applicable standards for air quality to control significant emissions of pollutants.

Policy IX.F.3. The County shall encourage resource recovery alternatives to open burning of debris from land clearing.

IX.G. Resource Conservation and Development

Lee County is part of the Florida peninsula which is underlain by the crystalline rock of the Florida plateau. This geologic formation extends ten or more miles off the west coast of Southwest Florida and is covered by the shallow, warm water of the Gulf of Mexico. The peninsula is composed primarily of marine and freshwater sediments consisting of limestones; mixtures of shell, clay and sand called marls; and unconsolidated sands. The present area of Lee County is geologically very young and is characterized by broad, flat, gently sloping and poorly drained plains with extensive wetlands, numerous lakes and a complex drainage system. The County is part of one of the most diverse and productive land and water interfaces in the United States where the dynamic and complex geologic features of the barrier islands, bays, estuaries and wetlands are connected to the Gulf of Mexico.

There are eight major soils associations in Lee County: Pomello, Immokalee - Myakka - Pompano, Adamsville Pompano, Felda High - Wahasso - Pineda, Kerit - Fort Drum - Hallandale, Pompano - Charlotte, Medisaprista - Anclote, and Saltwater Marsh and Swamp.

These soils and the various subcategories of each have different capabilities, suitabilities, and carrying capacities. The use limitations are quite severe in many parts of the County, in particular for septic fields. Sound planning is necessary to discourage inappropriate uses of various soils. Agriculture is an important County industry which is directly dependent on soil productivity in terms of yields by crop type, fertility, topography, and available moisture. While the County does not contain any soils classified as "prime agricultural," there are some which are "unique" because of the climate and the investments made in them. These soils are deserving of protection and conversion to urban uses should be discouraged.

Lee County enjoys a moderate subtropical climate, with an average annual temperature of 74° F. and monthly averages ranging from a low of 64° F. in January to a high of 83° F. in August. Average annual precipitation is 54 inches. However, the rainfall is not evenly distributed, with two-thirds of the total received in the summer months from June through September. Prevailing winds average about eight miles per hour from the southeast. The County is subject to periodic tropical storms and hurricanes which can be a serious threat to property and public safety, especially to the barrier islands and low-lying coastal areas.

The plant associations of Lee County can be easily identified by type of location. Pine (Pinus spp.) and Saw Palmetto (Serenoa repens) are predominant on the uplands. Willows (Salix spp.) and Dahoon Holly (Ilex cassine) are common in the freshwater transitional zone between upland and freshwater wetland. In

the coastal transition zone Seashore Saltgrass (Distichlis spicata) and Sea Grape (Coccoloba uvifera) are often present, while the coastal wetland is dominated by mangrove and cord grass (Spartina spp.). The wetlands and associated vegetation perform vital ecological functions; for example, the mangrove system supplies the basis of detrital food web which is an absolute necessity for continued estuarine productivity.

There is a serious problem with exotic plant species dominating and supplanting native species. These imports include the Melaleuca or Punk Tree (Melaleuca quinquenervia), Brazilian Pepper (Schinus terebinthifolius), Australian Pine (Casuarina equisetifolia), Water Hyacinth (Eichornia crassipes) and Hydrilla (Hydrilla verticillata). Australian Pines are shallow rooted trees that easily topple over from wind and wave action in the coastal zone. These poorly-secured trees represent a public safety hazard and destroy beach nesting habitat of sea turtles. Melaleuca and Brazilian Pepper displace native plants rapidly, prevent the natural recovery of disturbed ecosystems and are extremely difficult to eliminate. The Hyacinth and Hydrilla are aquatic plants which can be a nuisance to boaters and water management channels with characteristically dense surface growth.

Preventative measures to minimize the threat of aquatic weed problems requires careful regulation of available control techniques. Chemical application methods for treatment of noxious aquatics may adversely impact the natural biota and ground and surface waters. Toxic insecticides including the organophosphate

chemicals used in the local mosquito control program represents another potential source of contamination to the natural resources.

The County still has a diversity of wildlife, especially the marine and avian species. Shrimp, crabs, mullet, grouper and other species support a multi-million dollar commercial fishing industry. The installation of additional artificial fishing reefs will help to support the fisheries resource for expanding commercial and sport fishing demands. The evident increase of population growth will result in the need for more public fishing piers and boating facilities. Development of new marinas shall be regulated and managed in accordance with the siting and development policies of the Blue Ribbon Marina Committee, Charlotte Harbor Aquatic Preserve Management Plan and the Estero Bay Aquatic Preserve Management Plan (Appendix 2). Lee County is home for significant populations of many endangered wildlife species including the Manatee (Trichechus manatus), Florida Panther (Felis concolor coryi), Brown Pelican (Pelecanus occidentalis), Loggerhead Turtle (Caretta caretta caretta), Southern Bald Eagle (Haliaeetus leucocephalus), and Red Cockaded Woodpecker (Pendrocopos borealis). One important reason for the abundance of wildlife are the several wildlife refuges and nature preserves located in the County and considerable privately-owned land in its natural state.

Resource conservation should be inherent in development designs. The use of native vegetation in private and public areas, including County rights of way should be encouraged in all

landscape designs. The County should require that development designs promote energy efficiency and that water conservation practices conform with the State Water Conservation Act. Resource recovery is essential to an expanding population and provision for recycling of products, including paper, metals and glass, should be implemented.

Growth in the energy intensive coastal zone should be discouraged and shifted to the interior where growth can be more evenly distributed and impact of the natural resources minimized. Access roads and land development in the interior should be confined to areas suitable for development and directed away from environmentally sensitive lands including the designated Resource Protection Areas and Transition Zones. Adequate safe passage for wildlife should be provided in all new and reconstructed county roads. Vegetated buffer zones should separate all environmentally sensitive lands from development. The clearing of land for development should require the protection of trees as well as understory vegetation. Provision must be made to insure that agriculture lands exempt from the tree ordinance are regulated prior to and in accordance with any zoning change to residential use.

Goal IX.G: To conserve, manage, and protect the natural and environmental resources of Lee County to insure continued resource availability.

Obj. IX.G: Manage the natural resources to provide a balance between irreversible commitments and conservation of resources, based on sound ecological planning principles and the public interest.

Policy IX.G.1. The County shall identify, inventory and protect endangered and rare plant and animal species.

Policy IX.G.2. Critical habitat of rare and endangered plant and animal species shall be protected and conserved through development review, regulation, and incentives.

Policy IX.G.3. Development designs submitted to the County shall promote energy efficiency.

Policy IX.G.4. The County shall support management and education programs on energy efficiency and conservation, resource conservation and recycling, appropriate community technology, and environmental protection.

Policy IX.G.5. The County shall emphasize the use of native species of vegetation for landscaping and shall formulate a program for the control and management of Brazilian Pepper, Melaleuca and Australian Pine.

Policy IX.G.7. Development adjacent to aquatic and other nature preserves, wildlife refuges, and recreation areas shall protect the natural character and public benefit of these areas including, but not limited to, scenic values for the benefit of future generations.

Policy IX.G.8. Restoration of resource extraction land that includes mining operations to standards suitable for future development or to wetland reclamation shall be required.

Policy IX.G.9. The planting of Brazilian Pepper, Melaleuca, and Australian Pine shall be prohibited in order to prevent the spread of these noxious species.

Policy IX.G.10 The County shall support State and Federal fisheries management programs that protect and enhance the long term biological and economic productivity of coastal and estuarine waters for commercial and sport fisheries.

Policy IX.G.11 The County shall maintain and improve marine fisheries productivity, and promote the conservation of fishery resources through the protection and restoration of finfish and shellfish habitat.

Policy IX.G.12 Non-water-dependent uses of shoreline lands shall be discouraged.

Policy IX.G.13 The County shall develop an artificial reef program in coordination with the Florida Department of Natural Resources, the County Marine Advisory Board, the University of Florida's Marine Advisory Program, and appropriate public organization.

Policy IX.G.14 The location and construction, or rejuvenation, of artificial reefs and fishing piers shall meet the needs of the fishing community.

Policy IX.G.15 Unmarked channels or passages that have been used to traverse shallow in-shore waters should be marked to reduce injury to marine seagrass beds.

Policy IX.G.16 The County shall support the identification and marking of areas frequented by manatees.

Policy IX.G.17 The siting and development of marinas shall be consistent with the management policy of Blue Ribbon Marina Committee, or Charlotte Harbor Aquatic Preserve Management Plan or the Estero Bay Aquatic Preserve Management Plan, whichever is applicable.

Policy IX.G.18 Lee County shall cooperate with the Southwest Florida Regional Planning Council, Marine Resource Advisory Council and other appropriate agencies in the preparation and implementation of a long-range boating facilities plan and capital improvement program.

Policy IX.G.19 The County shall prepare and adopt regulations to control the clearing of natural vegetation except where and when needed for permitted development.

Policy IX.G.20 Adequate corridors for safe passage of wildlife across new and reconstructed County roads shall be encouraged, where appropriate.

Policy IX.G.21 The County shall, through regulation, provision of incentives to the private sector and capital investment, promote the use of energy efficient transportation systems, solar energy technology applications for new and existing development, solid waste resource recovery systems, and other appropriate technologies.

Policy IX.G.22 Absent overriding public concerns, access roads and land development in the coastal zone and designated Resource Protection Areas and Transition Zones shall be strongly discouraged.

Policy IX.G.23 Lee County shall protect its natural resources by encouraging and cooperating with the local Mosquito Control District to employ the maximum feasible use of natural biological agents to control injurious insects.

Policy IX.G.24 Consideration should be given to avoid needless destruction of upland vegetation communities including coastal and interior hammocks through the site plan review process.

CONSISTENCY WITH OTHER PLAN ELEMENTS

Each of the elements in the Comprehensive Plan must be consistent with the Conservation and Coastal Zone Management Element.

Because the Land Use Element is the foundation to the Comprehensive Plan, its relationship to the Conservation and Coastal Zone Management Element is based on the management of population and urban growth, which allows for the protection of critical environmental areas and resources. The low density requirements of the designated Resource Protection Areas and Transition Zones are compatible with desired resource protection.

The Community Facilities and Services Element and the Conservation and Coastal Zone Management Element overlap in the protection of freshwater and estuarine systems. Both elements require the preservation of natural drainage systems that allow for filtration of surface water runoff and ground water recharge.

The Community Facilities and Services Element requires regulatory control of water and wastewater services. County control of these two services will ensure water of sufficient quantity and quality for the consumer and the environment and will minimize source pollution from wastewater facilities.

The Traffic Circulation Element is compatible with the Conservation and Coastal Zone Management Element in the regulation of road systems. New roads will be prohibited within the designated Resource Protection Areas and Transition Zones. In addition, new and reconstructed County roads will provide for adequate corridors for safe passage of wildlife.

The preservation of parks and scenic resources including beaches, wetlands, mangrove forests and barrier islands as provided for in the Parks and Recreation and Historic and Scenic Preservation Elements is inherent in the Conservation and Coastal Zone Management Element.

Compliance with the Charlotte Harbor Management Plan and the Charlotte Harbor and Estero Bay Aquatic Preserve Management Plans provides the consistent link between the Ports, Aviation and Rail Element and the Conservation and Coastal Zone Management Element.

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APPENDIX I

SOIL TYPES CHARACTERISTIC OF FRESHWATER
PONDED OR SALTWATER WETLANDS--LEE COUNTY
ACCORDING TO THE USDA/SOIL CONSERVATION
SERVICE SOIL SURVEY OF LEE COUNTY

FLOODING

<u>FIELD SYMBOL</u>	<u>FIELD MAPPING UNIT NAME</u>
8	Hallandale fine sand, tidal
15	Estero muck
16	Peckish mucky fine sand
23	Wulfert muck
24	Kesson fine sand
56	Isles muck
57	Boca fine sand, tidal

PONDING

<u>FIELD SYMBOL</u>	<u>FIELD MAPPING UNIT NAME</u>
19	Gator muck
20	Terra Ceia muck
27	Pompano fine sand, depressional
39	Isles fine sand, depressional
40	Anclote sand, depressional
41	Valkaria fine sand, depressional
44	Malabar fine sand, depressional
45	Copeland sandy loam, depressional
49	Felda fine sand, depressional
51	Floridana sand, depressional
53	Myakka fine sand, depressional
62	Winder sand, depressional
73	Pineda fine sand, depressional
78	Chobee muck

DEFINITIONSFLOODING

Soil flooded by moving water from stream overflow, runoff or high tides.

PONDING

Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

APPENDIX II
BLUE RIBBON MARINA COMMITTEE REPORT

APPENDIX III
CHARLOTTE HARBOR AQUATIC PRESERVE MANAGEMENT PLAN
(See Illustration #17)

APPENDIX IV
ESTERO BAY AQUATIC PRESERVE MANAGEMENT PLAN
(See Illustration #17)

APPENDIX V
LEE COUNTY BEACH ACCESS SURVEY

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X. HOUSING ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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INTRODUCTION

Purpose

This element provides guidance for County officials and citizens concerning public decisions affecting one of the most basic needs -- shelter. Local governments in Florida are required by law to address several housing issues. These include provision of adequate sites for new or rehabilitated dwellings to serve all existing and anticipated residents, regardless of income or special needs. Local plans should also address the identification of housing conditions, conservation, replacement, and improvements of existing stock, relocation, and elimination of substandard conditions. Implementation programs to respond to these issues are to be set forth as well.

Existing Conditions

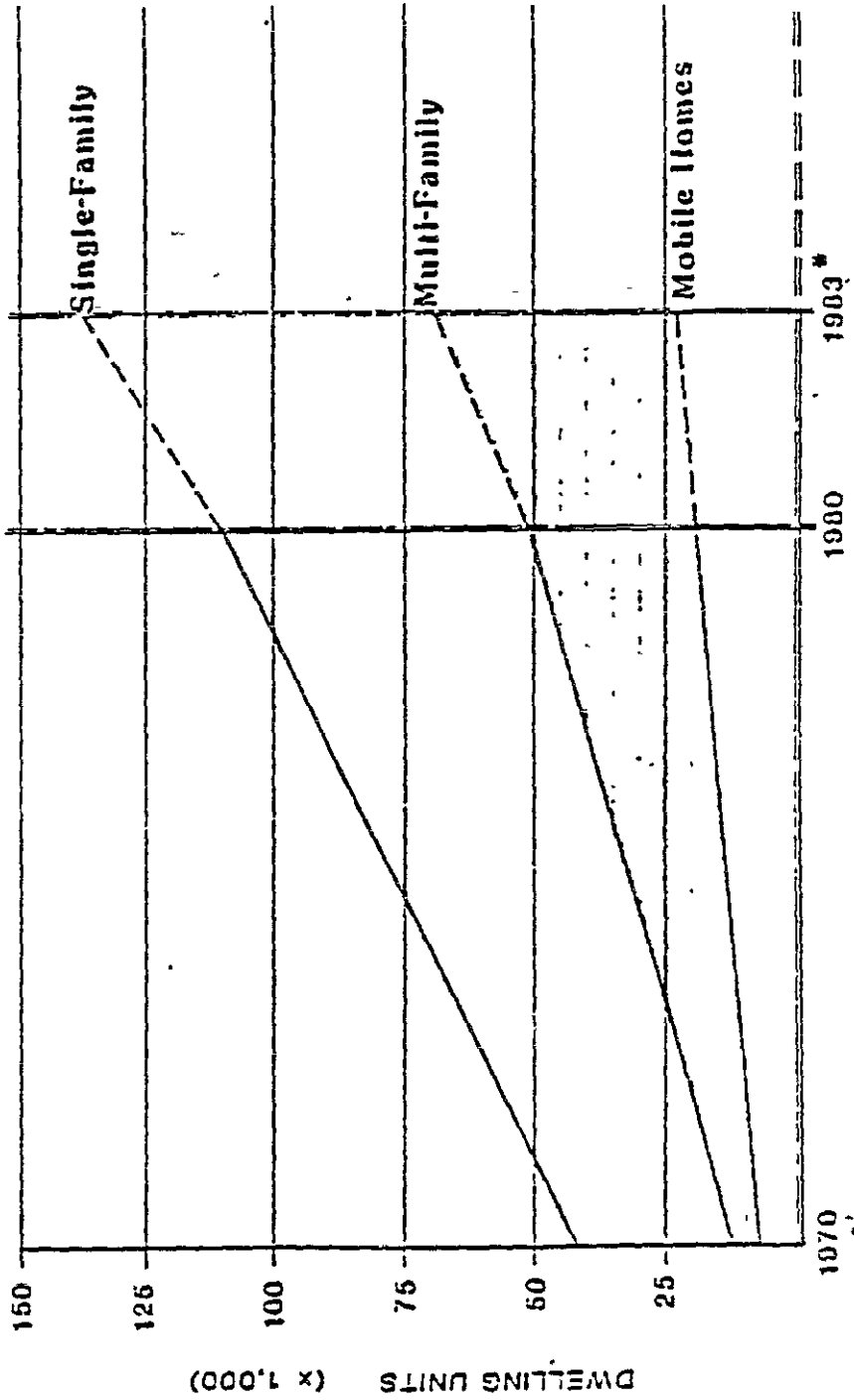
A. Existing Housing Supply

Lee County has experienced a very high level of housing construction through the 1970's and into the 1980's (See Figure 1). In November, 1982, Lee County issued the largest number of building permits for any month of record.¹ According to the 1980 Census, Lee County had 111,013 housing units, an increase of 67,502 units or 155% more than the 43,511 units reported in 1970.

Recent construction has occurred primarily in the unincorporated areas of Lee County. Multiple family housing has com-

¹ Lee County Building Department.

FIGURE 1 GROWTH IN HOUSING STOCK (By Type of Structure) 1970-1983



* Estimated from Building Permit Activity

Prepared by Information Services Dept.
11/10/84

prised the largest proportion of residential development. In the latter part of 1982 a gradual increase in single family construction was accompanied by a decrease in multiple family starts, but multi-family units continued to become a larger proportion of the total housing stock. (See Table 1). As of April 1, 1980, the unincorporated area of Lee County had 72,407 permanent (year-round) units. Of this total, 53,612 were occupied on a year-round basis. The numerical increase in year-round housing stock in Lee County, on a county-wide basis, is categorized by structure type in Table 2:

TABLE 1

Type of Structure as % of County-wide Housing Stock	1970, 1980, 1983		
	<u>1970</u>	<u>1980</u>	<u>1983*</u>
	Single family	71%	52%
Multi-family & Duplex	17%	30%	35%
Mobile Home	12%	18%	16%

*Estimated from permit activity.

SOURCE: 1970 and 1980 Census; 1983 volumes were estimated from permit activity published by University of Florida, Bureau of Business and Economic Resources ; See Figure 1

TABLE 2

Additions to Housing Stock
Lee County, 1970-1980

Single family units:	26,745
Multiple family units*	25,881
<u>Mobile home units:</u>	<u>13,811</u>
Total units added:	66,437

*Includes duplex and single family attached.

SOURCE: 1970 and 1980 Census

Absent any substantial annexations by the municipalities within the County, the distribution depicted above is not expected to change dramatically during the time frame of the Plan.

B. Owner vs. Renter Occupied Units

On a county-wide basis in 1980, a total of 82,509 units were occupied, 61,217 by owners and 21,292 by renters. (See Table 3). Given a total year-round housing stock of 108,598 units (1980), this yields a county-wide total of 26,089 vacant units or an overall vacancy rate of 24% (Table 4). Occupancy/vacancy rates represent an indication of the degree to which the housing supply is being utilized. Total saturation occupancy (100%), while theoretically possible, is not desirable since a certain amount

TABLE 3

EXISTING HOUSING SUPPLY, 1980

	Total Housing Units	-	Vacant Seasonal, Migratory	=	Total Year- Round Units	-	Vacant Units	=	Total Year- Round Occupied	=	Total Owner Occupied	+	Vacant Renter Occupied
Cape Coral	15,942		314		15,628		2,669		12,959		10,148		2,811
Fort Myers	16,336		258		16,078		1,665		14,413		6,998		7,415
Label	4,491		6		4,485		2,960		1,525		1,144		381
inc.	74,244		1,837		72,407		18,795		53,612		42,927		10,685
Total	111,013		2,415		108,598		26,089		82,509		61,217		21,292

SOURCE: "1980 Census of Population and Housing. Census Tracts: Fort Myers-Cape Coral, Fla."
U. S. Bureau of the Census

TABLE 4

OWNER VS. RENTER OCCUPIED UNITS
(COUNTY-WIDE)

UNIT TYPE	TOTAL YEAR-ROUND UNITS	TOTAL OCCUPIED UNITS	NO. OWNER-OCCUPIED	NO. RENTER-OCCUPIED	TOTAL VACANT UNITS	VACANCY RATE
Single Family (Attached & Detached)	65,587	55,740	45,693	10,047	9,847	15%
Multi-Family (2+ Units/ structure)	24,410	14,545	4,907	9,638	9,965	40%
Mobile Home	18,601	12,224	10,617	1,607	6,377	34%
Total	108,598	82,590	61,217	21,292	26,089	24%

^Vacancy rates include units held for "seasonal/occasional" use.

SOURCE: "1980 Census of Housing, General Housing Characteristics" Florida"
U. S. Bureau of the Census

of vacancy is necessary to facilitate efficient operation of the market. A county-wide vacancy rate of 24% is deceiving unless further qualified by the fact that approximately 15,098 units are held for "occasional" use (1980 census). By deducting this figure from the county-wide vacancy total of 26,089 units, a more reasonable rate of 10% (10,991 units) can be derived (Table 4).

C. Replacement and Rehabilitation

Lee County is committed to an ongoing effort for the identification, rehabilitation and/or replacement of substandard housing units. The County's Dec. 1983 Florida Small Cities Community Development Block Grant Application designated as its Target Area the Ben-David neighborhood (which is part of the larger Dunbar Community and located in designated U.S.A. Land Use Map). Thirty-four (34) of this neighborhood's forty-three (43) houses are substandard (80%). The County seeks to rehabilitate twenty-three (23) structures while demolishing nine (9) dilapidated units, and in addition will upgrade water lines, street, and drainage facilities.

An effective neighborhood revitalization program is critical to promoting housing rehabilitation in Lee County. Housing rehabilitation and replacement represents a significant opportunity for sheltering future population. Although most of the County's housing stock is relatively new in comparison to other metropolitan areas, dilapidation is a serious problem which merits public intervention and assistance. According to data provided by the Lee County Housing Assistance Office, unincorpor-

ated Lee County had approximately 1,606 units which were dilapidated or lacked all or some plumbing facilities in 1970. Table 5 demonstrates the status or extent of substandard housing in 1980. It is estimated that 4,445 poverty level households resided in substandard housing units in 1981.³

TABLE 5

EXTENT OF SUBSTANDARD HOUSING

LEE COUNTY, 1980

(Categories are not mutually exclusive)

# of Units	Deficiency
1519*	Without Complete Bathroom
1512	Without Complete Kitchen Facilities
1976	Without a Source of Heat
2725**	Overcrowded
1328	Without a Septic Tank or Access to Public Sewer

*Owner Occupied, 886; Renter occupied, 633.

**Per census definition.

SOURCE: U.S. Census of Housing, 1980

³Lee County Housing Assistance Office

Through a combination of Block Grant funds and related Federal programs, it is the County's initial responsibility to systematically identify and improve existing substandard neighborhoods. Additionally, the County is committed to developing joint funding applications with municipalities to maximize the local redevelopment effort.

D. Plans and Programs

Local government has a primary role in a community's housing market. Without supporting urban facilities and services, the housing industry would be unable to respond to residential needs. Where the marketplace does not meet housing needs, it is the responsibility of local government to take appropriate actions to promote residential opportunities. The serious shortage of sound housing at prices affordable to persons of low and moderate income must be solved by cooperation and programs between the public and private sectors. The adequate provision of housing for low/moderate income families is a primary goal of this Plan through density and development incentives reflected in the Land Use Element. The County can and must play a significant role in the supply of housing for low/moderate income individuals.

Government housing subsidies play an important role in providing shelter for Lee County's low- and moderate-income households (Defined in Table 6). To date, 1,197 public and HUD Section 8 housing units have been constructed, all within the City of Fort Myers. Of these units, 873 are family units and 324 are for the elderly. Federal subsidies from the Community Devel-

opment Block Grant program have also been awarded to Lee County. Rental assistance is also being offered to qualified residents; to date, 540 families are receiving assistance in the unincorporated areas. In addition, State funds have been successfully utilized to construct 166 (60 for HUD, 106 for Lee County Housing Assistance) homes in East Fort Myers for low- and moderate-income households.⁷

TABLE 6

DEFINITIONS FOR LOW INCOME FAMILIES

<u>Very-Low Income Families</u>			
<u>1 Person</u> \$7,950	<u>2 Persons</u> \$9,100	<u>3 Persons</u> \$10,200	<u>4 Persons</u> \$11,350
<u>5 Persons</u> \$12,250	<u>6 Persons</u> \$13,150	<u>7 Persons</u> \$14,050	<u>8 Persons</u> \$15,000
<u>Lower Income Families</u>			
<u>1 Person</u> \$12,700	<u>2 Persons</u> \$14,500	<u>3 Persons</u> \$16,350	<u>4 Persons</u> \$18,150
<u>5 Persons</u> \$19,300	<u>6 Persons</u> \$20,400	<u>7 Persons</u> \$21,550	<u>8 Persons</u> \$22,700

SOURCE: U.S. Dept. of Housing & Urban Development, Region IV, April 1983.

The median household income for Lee County was \$14,612 in 1979 (Table 7). Planning District #13 (Sanibel) held the highest median income (\$22,840) while Planning District #8 (Bonita) held the lowest (\$11,983) (Table 8). While the provision of low/

⁷ Ibid.

moderate income housing is a county-wide concern, a Planning District-specific approach allows for a more area-sensitive treatment. Obviously, an effort to provide housing for low/moderate income families would address varying income thresholds depending upon geographic location of potential sites. Currently recognized practices for calculating income level indicators for low and very low income families assumes low income to be 80% or less of the median and very low to be 50% or more of the median. This method establishes a county-wide median low income to be \$11,690 and median very low income to be \$7,306. By recognizing these standards and applying them on a Planning District basis, the goals, objectives and policies of this Plan can be implemented.

TABLE 7

MEDIAN HOUSEHOLD INCOME

LEE COUNTY

All Households	\$14,612
Owner Occupied Household	\$15,767
Renter Occupied Household	\$11,666
Median Family Income	\$16,757
Median Income for Unrelated Individuals 15 and Over	\$ 7,077

SOURCE: "1980 Census of Population-General Social and Economic Characteristics: Florida" U.S. Bureau of the Census
"1980 Census of Population and Housing-Census Tracts: Fort Myers-Cape Coral, Florida" U.S. Department of the Census

TABLE 8
 MEDIAN HOUSEHOLD INCOME
 BY PLANNING DISTRICT

Planning District	Median Household Income	Low Income (80% of Median)	Very Low (50% of Median)
Fort Myers	\$12,789	\$10,231	\$ 6,395
South Ft. Myers	17,691	14,153	8,846
Cape Coral	16,046	12,837	8,023
N. Ft. Myers	14,669	11,735	7,335
Alva	13,739	10,991	6,870
Lehigh	14,034	11,227	7,017
East Ft. Myers	17,273	13,818	8,637
Bonita	11,983	11,983	5,992
San Carlos	14,803	11,842	7,402
Ft. Myers Beach	17,086	13,669	8,543
Iona-McGregor	14,122	11,298	7,061
Pine Island	12,605	10,084	6,303
Sanibel	22,840	18,272	11,420
Captiva	14,926	11,941	7,463
Gasparilla	16,205	12,964	8,103
County-wide	\$14,612	\$11,690	\$ 7,306

SOURCE: "1980 Census of Population and Housing Census Tracts: Fort Myers - Cape Coral, Fla" U.S. Bureau of Census Summary Tape File 3A printout.

E. Special Issues

Resort and vacation destinations such as Lee County have special housing issues which are represented by 1) hotels, motels, and kindred services and 2) recreational vehicles. The number of hotel/motel units had grown steadily (30%) from 1970 to 1979 when the number began to decline. This was probably due to conversion of hotels to condominiums and also to unrealistic and uneconomical regulation of this kind of development. In July, 1981, there were 199 motels or hotels with 6,145 units. How this number relates to optimum needs of a growth tourist economy is not clear. In both cases, there is not sufficient information for policy development at this time. There are several classes of hotels/motels: those that serve a transient market only, those that have convention and meeting facilities, and those which, by their location and amenities, cater to vacationers. Each may have different needs and produce different impacts on the public interest. The data are insufficient to do more than logically distinguish them at this time.

Also, within the past decade, the small house trailer (250 - 300 or so square feet) has reappeared as the "park model" recreational vehicle. While RV's were conceived of as a way of camping in comfort, it is suspected that they are creating a new opportunity for low and moderate price housing for small permanent or long term seasonal households. Again, the data do not yet support policy formulation.

In both these instances it is more useful to treat the few obvious issues as relating to land use and community facilities. When better data are available, more explicit policy can be generated for subsequent plans.

Needs

A. Existing and Projected Housing Demand

With the tremendous growth rates Lee County has experienced to date, housing demand has increased accordingly. New housing units must accommodate the future population, projected at 536,250 total persons, or 264,163 total permanent households by the year 2005. Thus, an estimated 175,000 additional dwelling units will be needed by the year 2005 to accommodate future permanent and seasonal households. In addition, an estimated 44,855 units will require either replacement or rehabilitation by the year 2005, based on existing calculations. In summary, Lee County (on a county-wide basis) will need at least 175,000 additional housing units between 1980 and 2005 to accommodate future population growth and replacement units.⁴

B. Affordability

The cost of new housing -- land costs, financing charges -- land costs, and increases in construction prices, the cost of new housing is pricing many families out of the market. According to the 1980 Census, the median value of an owner-occupied home in

⁴Housing Report, Update 1980, June, 1980 (Southwest Florida Regional Planning Council).

Lee County was \$52,200, while the median contract rent was \$231. Estimates by the Five County Builders Association in December of 1982 revealed the average costs of two-bedroom homes to exceed \$50,000 and three bedroom homes to be over \$60,000.

Due to these prices, ownership alternatives are being sought by prospective buyers in the form of condominiums and mobile homes. While condominium prices also remain quite high (averaging between \$60,000-\$70,000), they offer amenities which are particularly suited to the retired person. However, mobile homes have proven to be the most affordable, at least initially. New mobile homes can be purchased for anywhere from \$20,000-\$40,000, somewhat less than a site-built home or condominium unit. A drawback is that mobile homes are financed through consumer loans, which carry higher interest rates than conventional mortgage loans. Table 9 identifies unit value of owner-occupied housing based upon the 1980 census and contrasted to similar statistics from 1970. During this ten year period, median value of owner occupied housing increased from \$17,500 (1970) to \$52,200 (1980).

When compared to State and national figures, Lee County's median price for owner-occupied housing was similiar in 1970 and relatively higher in 1980 (Table 10). However, this should not

TABLE 9

Unit Value of Owner Occupied Housing

<u>Value of Units</u>	<u>Owner Occupied Housing</u>		<u>Owner Occupied Condo.</u>
	<u># of Units</u>		<u># of Units</u>
	<u>1980*</u>	<u>1970**</u>	<u>1980*</u>
Total Units	40,699	21,427	5,367
Less than \$10,000	496	3,448	3
10,000-14,999	725	4,900	8
15,000-19,999	1,077	4,245	19
20,000-24,999	1,743	3,315	95
25,000-29,999	2,124		181
30,000-34,999	2,848	3,558	320
35,000-39,999	3,101		508
40,000-49,999	6,658		1,248
50,000-59,999	5,869		1,031
60,000-79,999	8,321		1,112
80,000-99,999	3,650	1,961	460
100,000-149,999	2,852		267
150,000-199,999	746		62
200,000 +	488		53
Median Value	\$52,200	\$17,500	\$52,400

*Complete Count Data

**Sample Data

SOURCE: "1980 Census of Housing-General Housing Characteristics: Florida" U.S. Bureau of the Census; and

"1970 Census of Housing-Detailed Housing Characteristics: Florida" U.S. Bureau of the Census

TABLE 10

MEDIAN PRICE OF OWNER-OCCUPIED HOUSING

COMPARISON

	<u>Owner-Occupied</u>		<u>Owner-Occupied</u>	<u>Renter-Occupied</u>	
	<u>Housing Unit</u>		<u>Condo Units</u>	<u>Units-Contract</u>	
	<u>1980</u>	<u>1970</u>	<u>1980</u>	<u>Rent</u>	
	<u>1980</u>	<u>1970</u>	<u>1980</u>	<u>1980</u>	<u>1970</u>
Lee County	\$52,200	\$17,500	\$52,400	\$231	\$88
Florida	\$45,100	\$15,000	\$49,600	\$208	\$92
USA	\$47,200	\$17,000	\$59,600	\$198	\$89

SOURCE: "1980 Census of Housing - General Housing Characteristics: United States Summary" U.S. Bureau of the Census

"1970 Census of Housing - General Housing Characteristics: Florida Summary" U.S. Bureau of the Census

"Florida Statistical Abstract 1972" University of Florida Press

be considered extraordinary given the tremendous growth in the County's housing stock over the ten year period. Rather it is apparent that newly constructed units and resort units comprise a significant portion of the County's stock, thereby substantially affecting median prices.

The households with special needs, including the elderly, minorities and female-headed, are finding it increasingly difficult to afford decent, safe housing. In fact, only 10.1% of all Lee County households were capable of affording the median

new single family detached unit home in 1978. On the other hand, 73.9% could afford a new mobile home unit. Aside from income levels, other factors such as building industry practices, governmental regulations, financial restrictions and social constraints contribute to the lack of affordable housing.⁵ Those households unable to afford safe and sanitary shelter are in need of assistance. According to the 1978 Housing Assistance Plan, such households numbered 1,507 in Lee County. Of these families, about 31% were minorities and 57% were female-headed. Nearly one-half of all needy households are renters.⁶

⁵ Ibid.

⁶ Lee County Housing Assistance Office via Information Services Dept.

Data Methodology

A majority of data represented in this element was taken from the "1980 Census of Population and Housing" generated by the U.S. Bureau of the Census. Other sources of projections and data included the University of Florida Bureau of Economic and Business Research (BEBR), the Southwest Florida Regional Planning Council, Florida Statistical Abstract, Lee County Housing Assistance Office, and the U.S. Department of Housing and Urban Development.

The Planning Department, using the data mentioned above, first established a generalized housing inventory depicting type, condition, and location of units. A market profile (i.e. available units and price) was then compared with Lee County median household income statistics in order to establish preliminary housing trends within individual planning sectors. These trends compiled with housing projections can then be analyzed to develop specific housing plans which include the goals, objectives, and policies of this element for localized planning sections.

ECONOMIC ASSUMPTIONS

While housing is an integral part of the overall Comprehensive Planning process, the Plan does not foresee an inordinate amount of local government financial participation, but primarily assumes the continuation of the current housing-related level of public funding. Rather, the economic assumptions that follow serve to support the relevant housing-related policies for this plan element.

-- The unincorporated County will continue to provide a disproportionate share of low and moderate income housing for members of the work force in adjacent jurisdictions who are priced out of the housing market in those adjacent jurisdictions.

-- Housing affordability will be maintained by reduction in size of units, reduction in accessories and amenities, and reduction in costs per unit through higher densities.

-- Certain economic goals can be best achieved by eliminating discrimination against families in housing.

-- The major Federal subsidy to consumers of housing through home or apartment ownership and reduction of taxable income through interest payments, will continue for the foreseeable future.

-- The private sector will continue to play a major role as the supplier of housing for all segments of society. Public intervention will focus primarily on programs that are supported by intergovernmental transfer payments (grants etc.). Therefore, in an effort to successfully compete and attract additional housing related grants, Lee County will seek the maximum coordination of the municipalities in submitting joint county-wide application for funding.

-- Public intervention will be financed by the following state and federal programs.

- 1) Community Development Block Grants, U.S. Department of Housing and Urban Development
- 2) Section 8 Rental Assistance Funds, U.S. Department of Housing and Urban Development
- 3) Florida Rural Housing Land Acquisition and Site Development Assistance Trust Funds
- 4) Rural America Loan Funds
- 5) Section 312 Housing Rehabilitation Loan Funds, USHUD

- 6) Florida Department of Community Affairs Weatherization Loan Funds
- 7) Farmer's Home Administration (Federal)
- 8) Federal Housing Administration
- 9) Lee County Housing Finance Agency
- 10) Urban Development Action Grants (Pockets of Poverty)

-- Grants may also be received for historic preservation, relocation necessary due to transportation problems, removal of architectural barriers, and establishment of data systems through other Federal or State programs. It is also desirable that the private development and financial concerns in Lee County offer their support for programs such as housing assistance, construction of modest-cost dwellings, and below-market-rate interest loan funds to benefit minorities and low or moderate income persons.

HOUSING ELEMENT

GOALS, OBJECTIVES, AND POLICIES

GENERAL HOUSING GOAL

To assure the availability of a sound, affordable, safe, healthful, and diverse residential environment for all Lee County existing and anticipated residents.

A. LOCATION

Goal X.A: To ensure that housing is located in a manner consistent with the Land Use Plan and the urban public services and facilities, with the local environment, and with the policies of this Plan.

Objective X.A: Administer the planning, zoning and development review processes in such a manner that proposed land uses acceptably minimize adverse drainage, environmental, spatial, traffic, noise, and glare impacts upon adjacent residential properties while maximizing aesthetic qualities.

Policy X.A.1. The County shall encourage residential developments to include a variety of housing types which are properly related to existing and planned community facilities and services, employment, access, and other land uses.

Policy X.A.2. In order to serve persons with special needs, disabilities, or handicaps, the County shall provide for the location of adequate sites for group homes and foster care facilities through the designation of zoning districts dispersed among the residential neighborhoods of Lee County

in which such facilities are considered to be permitted uses as long as such locations are consistent with all elements of this Plan.

Policy X.A.3. The County shall support the provision of reasonably located standard housing for persons experiencing displacement due to public actions.

Policy X.A.4. The County shall provide for the location of adequate sites for low and moderate-income residential development including mobile homes and migrant worker housing.

Policy X.A.5. The County shall require that new development adjacent to areas of established residential neighborhoods be compatible with or improve the area's existing character.

Policy X.A.6. The County shall provide for the location of low and moderate-income residential development on a project specific basis through density incentives and regulatory actions in those planning districts experiencing growth and/or increasing employment.

B. NEW HOUSING

Goal X.B: To provide consistent policies for guiding residential development which ensure that future housing needs are anticipated, and assuring that housing production is stabilized in order to promote an adequate supply while protecting construction trades employment.

Objective X.B: Promote housing development that results in safe, energy efficient, convenient, affordable, and attractive residential environments.

Policy X.B.1. The County shall encourage a mix of residential types and designs on a county-wide basis by providing for a variety of allowable housing densities and intensities.

Policy X.B.2. The County shall coordinate residential development within urban areas to coincide with existing or planned and programmed services and facilities so as to avoid premature or non-contiguous urbanization, the use of septic tanks, and the use of private wells for potable water within developed areas.

Policy X.B.3. The County, recognizing that financing represents the greatest percentage of housing costs, shall improve government regulations and procedures when feasible to assist in the lowering of costs for residential development and the provision of more affordable housing.

Policy X.B.4. The County shall improve the local regulatory process to reduce delays and provide incentives for lower-cost and energy efficient design, consistent with this Plan and the County's economic and administrative capabilities.

Policy X.B.5. County land development regulations shall establish standards to protect aesthetic qualities and the physical natural environment, while providing incentives for residential development designs which emphasize energy efficient construction, appropriate solar exposure, air circulation, and the use of natural shading.

Policy X.B.6. The County land planning and zoning process shall ensure the availability of adequate sites for future housing, including low and moderate-income housing and mobile homes.

Policy X.B.7. The County shall develop mechanisms such as density bonuses and reduced lot sizes in order to encourage the provision of low-and moderate-income housing in a manner consistent with the Land Use Element.

Policy X.B.8. The County shall provide density bonuses above base density to those developments which commit to the construction of 10% of their total units (on or off-site) for low-and moderate-income occupancy.

Policy X.B.9. The County shall provide height, bulk and/or floor area ratio incentives to nonresidential developments which construct and/or fund low and moderate-income housing.

C. IMPROVEMENT AND REHABILITATION

Goal X.C: To promote conservation and rehabilitation of existing housing in Lee County as a means of maintaining or improving neighborhood character and reducing the waste of resources.

Objective X.C: Support, through financial and tax incentives within statutory powers, programs which facilitate public and private efforts at housing and property maintenance, rehabilitation, and preservation.

Policy X.C.1. The County shall operate a comprehensive housing program to be administered by the Housing Assistance Office which includes community and neighborhood improvement or redevelopment programs directed at correcting substandard housing conditions, blighting influences, and incompatible land usage.

Policy X.C.2. The County shall support and promote housing rehabilitation programs which use energy conservation practices for the improvement and reuse of existing residences as a means of conserving and preserving existing housing stock.

Policy X.C.3. Weatherization programs provided by State and Federal agencies shall be incorporated into the County's comprehensive housing effort as a means of encouraging housing maintenance and preservation by both the public and private sectors.

Policy X.C.4. The Division of Code Enforcement and Housing Assistance Office shall take the lead in County efforts to identify homes eligible for various rehabilitation programs.

Policy X.C.5. Conservation of existing residential areas shall be supported by enforcement of existing codes, public improvements, and the provision of information on the availability of housing programs to promote rehabilitation and improvements.

Policy X.C.6. Within eighteen (18) months of the adoption of this Plan, the County shall develop, adopt, and enforce a housing code to assure that housing shall remain habitable. Administration of this program shall be by the Housing Assistance Office and administration with inspection responsibility by the Division of Code Enforcement.

D. AVAILABILITY AND ACCESSIBILITY

Goal X.D: To ensure that the opportunity for adequate housing is available and accessible to all Lee County residents.

Objective X.D: Support a comprehensive county-wide housing program which will promote equal housing opportunities for all persons.

Policy X.D.1. The County shall encourage the provision of a variety of rental and ownership housing opportunities for all income groups.

Policy X.D.2. The County shall not knowingly approve any development which discriminates against housing availability or opportunities on the basis of race or other legally prohibited distinctions.

Policy X.D.3. The Lee County Housing Assistance Office shall use available rental subsidies and Community Development funds for programs designed to provide sound, safe, and healthful housing and related community services and facilities for low and moderate-income residents.

Policy X.D.4. Lee County shall provide counseling services to low- and moderate-income residents which may include financial guidance, housing maintenance tips, and consumer advice to assist these households in securing affordable and sound housing.

Policy X.D.5. Housing plans prepared by County agencies shall address the provision of low- and moderate-income housing, quality residential environments, and accessibility to employment and community services and facilities.

Policy X.D.6. The provision of adequate housing for migrant farm labor families and other low income households shall be addressed in housing development plans and ensured by code enforcement.

Policy X.D.7. The availability of housing to suit the special needs of the elderly and handicapped shall be addressed in all official housing plans and new or rehabilitated housing shall be encouraged to provide access for these persons in sufficient units to meet their needs.

Policy X.D.8. Self-help housing programs shall be used by the County as a means of reducing housing costs for low- and moderate-income households.

Policy X.D.9. The Division of Human Services and Community Relations shall cooperate with other public agencies for the enforcement of anti-discrimination laws.

Policy X.D.10. The County shall cooperate with appropriate agencies in order to provide adequate sites for congregate living facilities, including group and foster care homes, to meet the requirements of persons with special needs, disabilities, and handicaps for a community residential environment and deinstitutionalization.

Policy X.D.11 The policies of the Lee Plan should encourage full housing opportunities for all income groups.

E. PLANS AND PROGRAMS

Goal X.E: To promote the effective use of public and private resources to provide below market rate housing through official plans, programs, and incentives.

Objective X.E: Maintain a continuing effort to improve conditions for residential development including the refinement and updating of codes, regulations, and enforcement activities in order to promote housing opportunities for all residents without sacrificing minimum quality standards.

Policy X.E.1. The County shall seek a coordinated redevelopment effort through interlocal agreements allowing for joint plans, programs, and funding applications by Lee County and its three municipalities.

Policy X.E.2. The County shall consider, as an integral part of all official plans and housing programs, the housing and related community services and facilities needs of rural residents.

Policy X.E.3. The County shall continue to support an effective code enforcement program.

Policy X.E.4. Lee County shall foster meaningful participation in the housing planning process by both the consumers and producers of housing in the County to better provide and encourage housing construction suited to the needs and affordability of residents.

Policy X.E.5. The County shall assure that existing and new housing meet minimum standards of livability and design through programs for regulation and review, including code enforcement.

Policy X.E.6. The County shall strive to ensure that a minimum of 10% of all new and existing housing units are attainable to low- and moderate-income families.

Policy X.E.7. The County shall maintain an ongoing research and information effort on housing and related issues, including State and Federal legislation affecting housing, county-wide housing needs, and the provision of advice regarding assistance programs.

Policy X.E.8. The County shall participate in State and Federal housing assistance programs to aid the elderly, migrant, and other low- and moderate-income households to secure suitable, affordable housing, including Housing and Community Development programs, rental assistance, and new construction home ownership programs.

Policy X.E.9. The Division of Code Enforcement shall establish and enforce minimum standards of housing and sanitation and require prompt action in the identification of abandoned or dilapidated property which may need demolition, including mobile homes and migrant worker housing.

Policy X.E.10. All County agencies and departments performing housing planning and program activities shall coordinate their activities and cooperate with other relevant public and private interests to ensure effective participation in the housing planning process regarding local and regional housing-related issues and developments.

Policy X.E.11. The County shall update local regulations affecting residential development, as practical, to reflect changing household preferences, community needs, and housing industry economics.

Policy X.E.12. Lee County shall investigate the development of a special building code for structures proposed to be located in vulnerable coastal areas.

CONSISTENCY WITH OTHER PLAN ELEMENTS

The goal of providing sound, affordable, safe, and healthful housing for the citizens of Lee County will be greatly enhanced by the urban service area concept by the provision of building sites which include adequate and efficient urban services. Planned growth management will also promote affordable housing by eliminating the higher costs of providing basic services generally associated with urban sprawl.

Housing sector plans along with the policies contained within the element will contribute to the local economy by assisting the private sector in delivering housing consistent with demand. Additional revenues for County builders can also be expected through the attraction of Federal Housing Grants for new construction.

Policies contained within the other elements which also contribute to the urban service concept will insure that the Lee County resident in the year 2005 will live in a neighborhood conveniently located to parks and schools and connected to other portions of the County by an efficient transportation network. Services such as police and fire will also insure their safety.

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XI. HISTORIC PRESERVATION ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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INTRODUCTIONPurpose

The Historic Preservation element is designed to allow Lee County and its citizens to identify, preserve and protect historic sites which have scientific, historical, or cultural value.

Although the Local Government Comprehensive Planning Act provides that the Historical Preservation element is optional, it is an important element for Lee County. This element sets forth plans and programs for those structures or lands in the community which have historical, archaeological, architectural, or similar significance.

Existing Conditions

Lee County's existing and past plans and programs for the preservation of historic sites have been narrow in scope. Affirmative action has consisted primarily of the adoption of the Historic and Scenic Preservation Element in the 1979 Lee County Comprehensive Plan and site specific efforts by various groups of private citizens to preserve structures from demolition.

The County's efforts in implementing the Historic and Scenic Preservation element of the 1979 Plan were meager. The County started an inventory designated as the Lee County Master Site File. This consisted primarily of a data compilation and an inventory of archaeological sites, but failed to identify historical and scenic sites.

Since adoption of the 1979 Plan, various citizen's groups have espoused the historic, architectural and archaeological significance of such areas as Port Boca Grande, The Orange River, McGregor Boulevard, the Caloosahatchee River, Pine Island, Cayo Costa, Galt Island, Lover's Key/Black Island, and many others. The Board of County Commissioners has publicly acknowledged the significance of these areas and lent at least some public support to protecting or preserving these areas.

Needs

If this element is going to be successful, sites must be identified. All available sources of State and Federal funds must be pursued to assist in the preservation of sites and structures. A trust fund should be established by Lee County for the preservation of historic structures to enable private persons and organizations to make charitable contributions for site preservation. Once appropriate sites are identified and designated, the regulatory efforts should ensure the protection and preservation of sites and structures, and that development surrounding designated sites and structures is consistent and harmonious.

Lee County must aid the efforts of private citizens to list historical sites on the National Register of Historic Places. Since Lee County is relying heavily on Federal assistance to bring the goals expressed herein to fruition, it will be necessary to have sites in Lee County registered.

The National Historic Preservation Act Amendments of 1980 established a certified local government program. To be certified under the program, the government must enact a local Historic Preservation Ordinance. Lee County needs to establish uniform criteria and standards by which sites are to be identified and designated. The standards for designation and identification should be set forth in an ordinance thereby satisfying the County's need for consistent implementation of this element as well as satisfying one of the prerequisites to establishing a certified local government program for Lee County.

An effective historic board or commission is necessary. The board should be qualified and aggressive and should assume the forefront in identifying and designating sites as well as monitoring the protection and preservation of sites once designated.

The County needs to identify and maintain historic sites to provide a sense of community identity and heritage. They are an invaluable resource that is forever lost once destroyed.

ECONOMIC ASSUMPTIONS

Although Lee County will not be making any capital expenditures on historic preservation, Lee County will receive an economic benefit as the preservation of historic resources enhances the quality of life for all citizens of Lee County. The preservation of historic areas and structures in Lee County also preserves important amenities which can be enjoyed by the tourist population recognizing the importance of the tourism industry to Lee County's economy.

The Plan recognizes that there may be an overlap between those sites and structures that are historic and those areas of the County that are suitable for use as a county park. To the extent that a historic site or structure is also a meritorious park site, the funding mechanisms delineated in the parks element will be applicable.

If a site is listed in the National Register, certain tax provisions may apply. The Economic Recovery Tax Act of 1981, which revised the historic preservation tax incentives authorized by Congress in the Tax Reform Act of 1976, the Revenue Act of 1978, and the Tax Treatment Extension Act of 1980, provide for a twenty-five percent (25%) investment tax credit for rehabilitating historic commercial, industrial and rental residential buildings instead of a fifteen (15) or twenty (20) percent credit available for rehabilitation of non-historic buildings more than thirty years old. This can be combined with a fifteen (15) year cost recovery period for the adjusted basis of the buildings. Certified structures with certified rehabilitations receive additional tax savings because owners are allowed to reduce the basis by one half (1/2) of the amount of the credit. The Tax Treatment Extension Act of 1980 provides Federal tax reductions for charitable contributions for conservation purposes of a partial interest in historically important land areas or structures.

The 1982 Tax Equity and Fiscal Responsibility Act (TEFRA) allows a twenty-five percent (25%) income tax credit for the cost of rehabilitating structures listed individually or as portions

of a historical district listed on the National Register of Historic Places. Structures not on the National Register are eligible for credits of twenty percent (20%) for structures forty years or older or fifteen percent (15%) for structures thirty to thirty-nine years old.

GOALS, OBJECTIVES AND POLICIES

General Goal

Sites and properties which have significant scientific, historical, archaeological, or architectural value to the public should be identified, designated, preserved, protected, rehabilitated and restored in order to protect such sites from drastic alteration in order to retain a sense of community identity and history.

Identification and Designation

GOAL XI.A. To establish a standard method, plan or program for the identification and designation of sites and properties of historic significance.

Obj. XI.A. To encourage the private sector and other public agencies to identify sites and properties which should be designated as historical sites or properties.

Obj. XI.B. To obtain public and private funding for the identification and designation of sites and properties.

Policy XI.B.1 Lee County shall enact a local historic preservation ordinance.

Policy XI.B.2 Lee County shall establish a Historic Preservation Board or Commission to be responsible for the identification and designation of historic sites and properties.

Policy XI.B.3 The Historic Preservation Board or Commission shall be appointed from among professionals in the disciplines of architecture, history, architectural history, planning, archaeology or related disciplines, to the extent that such professionals are available in the community. Additionally, Board or Commission members shall include other persons who have demonstrated a special interest, experience, or knowledge in Lee County history, architecture or related disciplines.

Policy XI.B.4 The Historic Preservation Board or Commission shall meet at regular intervals, but no less than four times a year.

Policy XI.B.5 Once sites are identified by the Historic Preservation Board or Commission, they should be submitted to the Board of County Commissioners for local designation as an historic site at a public hearing after notice to the affected property owner.

Policy XI.B.6 The Division of Community Development shall maintain an official list of all identified and designated historic sites and properties in Lee County, and all Federal and State locally designated sites and other sites of architectural and cultural significance.

Standard XI.B.1 A historic site or property should be associated with events that have made a contribution to the broad pattern of our history, and should be associated with the lives of persons significant in our past, or should embody the distinctive characteristics of a type period or method of construction, or that represent the work of a master or that possesses high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or that should have yielded, or may be likely to yield, information important in prehistory or history.

Preservation and Protection

GOAL B To protect designated sites and properties from destruction, and to preserve the site or property in its original or natural character.

Obj. XI.C. To encourage the private sector and public agencies to actively pursue the preservation, protection and enhancement of designated sites and properties.

Obj. XI.D. Obtain public and private funding for the identification, preservation, protection and enhancement of sites.

Obj. XI.E. Promote educational programs and the dissemination of public information on the protection and preservation of historical sites and properties.

Policy XI.E.1 Lee County shall landscape, preserve and protect County-owned and maintained historic sites and properties.

Policy XI.E.2 The Historic Preservation Commission or Board shall review all proposals to demolish or partial-

ly destroy a designated site prior to demolition and make recommendations to the Board of County Commissioners as to the propriety and effect of the demolition.

Policy XI.E.3 The Commission or Board shall provide assistance in the coordination of preservation activities among the community, to include preservation groups, citizens groups, the development community, and governmental entities.

Policy XI.E.4 Commission shall establish a Historic Marker Program.

Policy XI.E.5 The Board or Commission shall accumulate and disseminate information on Federal and State grants, funds, and incentives for historic preservation including, but not limited to, information on tax incentives, investment tax credits, tax preferences, and depreciation for qualified historic structures.

Policy XI.E.6 The Board or Commission shall recommend ordinances, permit application procedures, and land use regulations to the Board of County Commissioners for adoption to further the goals of historic preservation and protection.

Policy XI.E.7 Lee County shall exert every effort to enter into an interlocal agreement with the municipalities within Lee County to establish a City/County Historic Preservation Commission or Board.

Policy XI.E.8 Lee County shall establish an Historic Preservation Trust Fund, to be administered by the Board of County Commissioners after recommendation of the Historic Preservation Commission or Board. The Trust Fund shall consist of all monies received from Federal and State sources, all monies appropriated, if any, by Lee County, and monies contributed to the Fund from any other source.

Policy XI.E.9 Lee County shall provide the necessary staff personnel to the Historic Preservation Board or Commission to assist them in all duties.

Policy XI.E.10 Lee County shall protect and preserve designated sites and properties from destructive, detrimental or incompatible uses by regulating such land uses and developments in the area of the designated sites or properties. This policy is referring to Federal, State and locally designated sites and properties.

Restoration and Rehabilitation

GOAL C: To restore and rehabilitate identified and designated historical sites and properties which due to their current state of repair are in need of affirmative action to insure their preservation.

Obj. XI.F Obtain public and private funding for the restoration and rehabilitation of identified and designated historic sites and properties.

Policy XI.F.1 Lee County shall support a program to rehabilitate and restore structures of historic, architectural, or cultural significance.

Policy XI.F.2 Lee County shall support a program to rehabilitate and restore structures so that the buildings may be suitable for reuse, or uses other than the original use.

CONSISTENCY

The Historical Preservation Element blends in with several of the other elements to provide greater definition and responsiveness. The Land Use Element seeks to protect existing development from incompatible development, and seeks to permit the diversification of the community's economy, housing and commercial endeavors, while retaining those resources that initially

attract persons to the Lee County area. Historic sites and properties are specific resources of the County that add to the quality and character of the Lee County life style which attract persons to the area.

The Parks and Recreation and Open Space Element, and the Conservation and Coastal Zone Element recognize the need to maintain unique environmental areas, as well as the need to provide adequate areas to provide for the leisure time demands of a growing community. The Historic Preservation Element is harmonious with the goals and ambitions of the Parks and Recreation and Open Space Element and the Conservation and Coastal Zone Element, and these elements, along with the Land Use Element form a cohesive unit as they interface with each other.

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XII. INTERGOVERNMENTAL COORDINATION ELEMENT
LEE COUNTY COMPREHENSIVE PLAN

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INTERGOVERNMENTAL COORDINATION ELEMENTIntroduction

As the population of Lee County continues to grow and urban development intensifies, the number of governmental agencies exercising some measure of authority or influence within the County also increases. Policies contained within the Lee County Comprehensive Plan, especially the Land Use Element, also impact County incorporated areas and neighboring county governments. Coordination and cooperation within and between these governmental units to avoid duplication and promote optimal performance is needed on a daily basis. The Local Government Comprehensive Planning Act (LGCPA) provides for this by requiring that an Intergovernmental Coordination Element be included in all comprehensive plans. Section 163.3177(6)(h), Florida Statutes specifically requires that the Element show relationships and state principles and guidelines to be used in the accomplishment of coordination of the adopted comprehensive plan with the plans of other inter- and intra-governmental entities at the local, regional and State Level. Further, in order to foster and promote initial coordination, Florida Statutes also require the element to include specific policy statements indicating the relationship of the proposed development of the area to the comprehensive plans of adjacent municipalities and counties.

The purpose of the Lee County Intergovernmental Coordination Element is thus threefold. First, to outline governmental relationships both within and outside the county; second, to depict the impact, if any, the Comprehensive Plan shall have on these governments; and finally, to establish mechanisms to ensure continued cooperation and coordination.

PERMANENT INTERGOVERNMENTAL
COORDINATION FORUMS

Cooperation and coordination between governments must not terminate with the adoption of the Lee County Comprehensive Plan. Intergovernmental coordination must continue on a daily basis. Forums to promote and insure this coordination and communication should be established and maintained.

County-wide transportation planning has been coordinated and conducted through the Metropolitan Planning Organization. The M.P.O. has been the primary vehicle for getting elected representatives from the County and the three municipalities together to discuss not only road needs, but also various related issues of mutual concern and benefit. The Technical Advisory Committee to the M.P.O. (TAC/MPO) has served as an excellent vehicle for bringing together technical staffs of the four local jurisdictions to discuss mutual traffic improvement issues and programs. The personal contacts established through the TAC/MPO have led to a better working relationship among staffs of the four local governments within Lee County.

The Executive Advisory Committee (E.A.C.) is a permanent committee of the chief executive officers (or their designees) of the County, the municipalities, the Regional Planning Council, the School Board and the South Florida Water Management District. This committee has met periodically as situations and issues have dictated, and has proven to be an effective mechanism for promoting the flow of information and dialogue among its represented agencies/governments.

In addition, land use and planning issues of the Southwest Florida region have been discussed and reviewed by local governments via participation with the Southwest Florida Regional Planning Council. Major concerns calling for intergovernmental coordination, such as a hurricane evacuation plans and Developments of Regional Impact, have been addressed on a regional planning level.

Lee County will continue to participate in and support these forums described above in order to promote and insure intergovernmental coordination.

RELATIONSHIPS AND IMPACTS

ON OTHER GOVERNMENTS

The Lee County Comprehensive Plan contains policies and objectives which may impact other governmental units. In order to understand these relationships and facilitate communication, the development plans within the Lee Plan were compared to those of other governmental units for possible conflict. Particular

emphasis was placed on proposed land uses for abutting jurisdictions, as well as the policies and objectives contained within the Fort Myers, Cape Coral, and Sanibel plans.

I. COUNTY GOVERNMENTS

A. Collier County

Land Use

The Collier-Lee border west of I-75 to the Gulf of Mexico is designated in Collier as Urban and in Lee as Urban Community. The Collier Plan describes the Urban designation as the area with the greatest residential densities or expected to receive future urban services resulting in rapid urbanization. In addition to residential uses, the Collier Plan allows recreation and open space uses, community facilities and institutions, utilities, communications facilities, convenience and neighborhood commercial uses, and certain kinds of extractive industries.

East of I-75, there appears to be a difference between the Lee and Collier plans. Lee County designates the area east of I-75 as "Open Lands" with some interspersed "Resource Protection" and "Transitional Zones". Collier County has continued its "Urban" designation for approximately two (2) miles to the east of I-75. Past this area, the Collier Plan designates the Lee/Collier boundary as either "Rural" or "Parks or Preserves". The Lee Plan lists the primary purpose of the "Open Lands" category as being for the utilization of agricultural-rural pursuits

(grazing, farming, etc.) with residential densities to range from one (1) unit per one (1) acre to one (1) unit per five (5) acres. "Transitional Zones" are viewed as being important areas for the future water resources and as buffers for "Resource Protection" areas. Residential densities would not exceed one (1) unit per twenty (20) acres. Areas designated as "Resource Protection" areas are environmentally critical, and residential densities would be limited to one (1) unit per forty (40) acres.

The "Rural" designation in the Collier County Comprehensive Plan is not intended for intensive urban uses. Maximum residential densities would be one (1) unit per five (5) acres with other allowable uses being agriculture, preserves and open spaces, utilities and communications facilities, mining and extraction, and recreational vehicle parks that are compatible with surrounding land uses and have access to an arterial road. The "Parks and Preserves" category, specifically the Corkscrew Swamp Sanctuary, was established to protect and preserve native Florida wildlife and their habitats.

A basis for mutual agreements regarding development along the Lee/Collier boundary exists, but a potential for some conflict also is present. Given the relatively undeveloped nature of the lands east of I-75, it appears that the two counties could resolve any conflicts through mechanism of an interlocal agreement which would provide for review and comment on proposed projects.

Other

1. Collier County's Comprehensive Plan includes overall goals and objectives and recommendations from which to achieve these future goals and objectives. Upon review of this County's Comprehensive Plan, it is evident that Lee County's Plan is consistent.

2. Coordination between Lee and Collier Counties should be utilized to determine the feasibility of Lee County to serve Collier County with a method of solid waste disposal.

3. Coordination between Lee and Collier County is also important with respect to the common objective of protecting and upgrading the commercial fisheries resources of the coastal area.

B. Hendry CountyLand Use

Hendry and Lee Counties abut in a north/south alignment, for approximately 18 miles, to form the northeastern border of Lee County. The Land Use Element of the Hendry County Comprehensive Plan, written in 1979, characterizes the generalized existing land use along its westernmost section as "Agricultural Conservation". In terms of a two (2) mile wide perpendicular corridor nearest Lee County, the existing land use is almost entirely pasture, rangeland, and citrus-production; such uses are generally consistent with those found nearby in Lee County. Extremely limited growth is expected in this area except along State Road 80 where the Hendry County Generalized Existing Land Use Map depicts an area one (1) mile (north/south) by two (2) miles (east/

west) as "Residential (low density)" development. Such a category allows for one (1) dwelling unit per "gross area". A gross area is defined as an area consistent with prevailing lot sizes and with the applicable zoning requirements. This definition is used to mitigate the substantial numbers of platted lots (subdivisions) created years ago, much like that which occurred in Lee County. Rather than opting for assemblage of lots, the Element simply legitimizes those which currently exist. The character of this area will therefore depend upon buyer preference and the availability of lots; the latter topic is not addressed in specific numbers.

The corridor widens as it nears LaBelle and, at about four miles inside the County, a "Residential (medium density)" designation begins and continues to the eastern outskirts of the city. Medium density allows one (1) to five (5) dwelling units per gross acre and includes all existing subdivisions without any qualifying text as found in the low density areas. While a range is given, there is no mechanism or criteria to determine the allocation of units within the range.

The remaining lands near the Lee County border are seen as "Agricultural-Conservation" which preclude residential development entirely except for that which has a direct relationship with the principal use (agriculture); even suburban residential development is not permitted. This is contrasted with Lee County's designation of "Open Lands" which begins at the County line and extends westwardly for about three (3) miles interrupted only by the "Urban Communities" of Alva and Lehigh. These areas

form pockets within the "Open Land" category approximately two (2) miles and one-and-one-quarter (1-1/4) miles, respectively, west of Hendry County. "Open Lands" does not specifically prohibit residential use, although it is predicted that these areas will remain rural in character and receive minimal or no infrastructure improvements; densities ranging from one (1) dwelling unit per one (1) acre to one (1) dwelling unit per five (5) acres have been projected. The "Urban Communities" of Alva and Lehigh exhibit an emerging urban configuration and have a recognizable community character. Capital improvements are projected, shopping and employment centers will likely emerge, and the base density range extends from .5 dwelling unit per acre to six (6) dwelling units per acre. Planned Developments meeting performance criteria could obtain as many as 10 dwelling units per acre.

No real conflict appears evident between the respective Land Use plans of the counties. The built-in safeguards of the DRI process coupled with a mechanism for inter-governmental cooperation (e.g., the sharing of information on a formal basis) for the LaBelle, Alva, and Lehigh communities ensures that neither County should be adversely affected by development activity for the foreseeable future.

Other

1. The Hendry County Comprehensive Plan is basically a policy plan which illustrates general goals and objectives of the County. However, the specific means by which these goals and objectives are to be accomplished are not included.

2. The future inadequacy of State Road 80 is addressed in the Traffic Circulation Element of the Hendry County Plan. The need to widen State Road 80 to produce a four-lane divided highway from Ft. Myers east to the intersection of State Road 80 and Highway 27 is discussed. Coordination between Lee and Hendry County should be utilized in the attempt to meet this common objective.

3. Lee and Hendry Counties should investigate the feasibility of Lee County's proposed future solid waste resource recovery facility to provide the means for solid waste disposal for Hendry County.

4. The issues and concerns addressed in Hendry County's Plan are fundamentally the same as those expressed in Lee County's Plan.

C. Charlotte County

Land Use

Lee and Charlotte Counties share a common east/west border for approximately 42½ miles. A two (2) mile wide corridor, on either side of the boundary, has been examined for comparison of future land uses in an attempt to identify potential problem areas.

In terms of existing land use, development is minimal from the eastern boundary to U.S. 41 with agriculture the dominant economic pursuit in both counties. There is, however, a small, suburban enclave about one-half (1/2) mile south of the County line and east of U.S. 41 in Lee County. Moving westerly, some

development is found west of S.R. 765 (Burnt Store Road) and is increasing which is a reflection of Punta Gorda Isles' activity. Commercial endeavors, including a marina and warehousing are also found in the area. Continuing westward to the Gulf, Gasparilla Island shows limited development consisting almost entirely of seasonally-occupied, conventional homes.

The present land use along the entire corridor can best be characterized as "emerging" with a pattern for increasing intensities. A comparison of land use plans was made in the same directional manner and within the above described corridor.

Lee County proposes an "Open Lands" designation almost exclusively from the eastern border to Interstate 75, interrupted only by two comparatively small "Resource Protection Areas". "Open Lands" are considered "very rural" in nature and permit a density range from one (1) dwelling unit per one (1) acre to one (1) dwelling unit per five (5) acres whereas "Resource Protection Areas" are ecologically "incompatible with development" and allow for maximum density of one (1) dwelling unit per forty (40) acres.

The Charlotte County Plan exhibits more diversity in the distribution of land use categories within the adjacent area: "Agriculture I, Agriculture I - Special Treatment, Residential Estate Lands, and Commercial and Industrial". The latter three (3) categories comprise an extremely small portion of the total acreage.

Comparative analysis of the adjoining areas shows four (4) use districts in Lee County each permitting only low density development, i.e., rural, open lands, transitional, and resource protection areas. Charlotte County, on the other hand, addresses six (6) Districts which, in terms of density, vary from two (2) units per acre to one (1) unit per ten (10) acres. Also included are industrial and commercial pockets while Lee has none. Charlotte's map is quite sectionalized in that districts vary frequently and many are small tracts as opposed to the few, large classifications in Lee County.

Continuing west from I-75 to Burnt Store Road, Charlotte County has designated almost all areas as "Agriculture I", with its potential one (1) unit per acre density, contrasted by Lee County's use of "Open Lands" with a projected density range of one (1) unit per one (1) acre to one (1) unit per five (5) acres. Lee's Plan predicts more limited development south of the County line near Burnt Store Road where rather large tracts have been designated as "Resource Protection Areas" and "Transitional Zones". In Charlotte, a "Mobile Home" usage is projected abutting the County line at U.S.41. This category has a density range from one (1) unit per acre to six (6) units per acre. Two (2) miles north on U.S. 41 areas have been set aside for "Residential Estates" (density range: one (1) unit per five (5) acres to two (2) units per acre), "Low Density" (density range: one (1) unit per acre to five (5) units per acre) and a small "Commercial" node. "Agriculture I" is predominant east of Burnt Store Road, except for the northern section which shows a mix of

"Low Density", "High Density" (density range: 11 units per acre to 15 units per acre), "Commercial" and "Park/Open Space". The "Park/ Open Space" is an amenity of the P.G.I. development and is essentially open space rather than a traditional park.

West of Burnt Store Road the land usage intensifies in Lee County with the introduction of the "Urban Community" designation. "Urban Community Areas" are identified as having an emerging, recognizable community character. Capital improvements would be directed to these areas along with shopping and employment centers. A base density of .5 unit per acre to six (6) units per acre has been projected along with a maximum density of 10 units per acre contingent upon meeting certain criteria established for a Planned Development. The "Urban Community Area" abuts a relatively small "Resource Protection Area" adjacent to Charlotte Harbor. Charlotte County contains a rather narrow "High Density" corridor along Burnt Store Road and similar elongated segments to the west abutting another District identified as "Preservation". Charlotte's "Preservation" areas, similar to Lee's Resource Protection Areas, consist of "environmentally sensitive lands and should be protected from urban type development. They are major water recharge areas, lands of significant ecological value and/or wildlife and vegetative habitats."

The "Preservation" classification of Charlotte County extends to Gasparilla Island interspersed with a "Limited Development" category which is "generally associated closely with preservation land. Development should take place only in those areas that ensure the long term functioning of the natural hydrologic

and ecological systems". Development is proposed at a maximum ratio of one (1) unit per ten (10) acres. Also, east of S.R. 771 (Gasparilla Road) exists a "Commercial" node and an "Industrial" node. This is contrasted by Lee County's use of "Resource Protection" for a like distance south and east of S.R. 771. On the Gulf side, Lee County has assigned an "Urban Community Area" designation while, to the north, Charlotte exhibits a variety of districts beginning with "Low Density", then "Medium Density" (six (6) dwelling units per acre to 10 dwelling units per acre), then "Commercial" and another "Medium Density" tract. The peninsular shoreline shows a narrow strip of "Limited Development" serving as a buffer zone.

Land use inconsistencies do exist within the joint corridor, but it is believed that there will be no impact on either County during the interim between any subsequent Plan updates. This is particularly true from the eastern border to Burnt Store Road wherein very little development is likely to occur. There are instances of Charlotte County projecting higher density land usage than does Lee in an adjacent area. A bilateral effort at resolving these instances should be instituted before the next update. The area adjacent to Burnt Store Road is generally consistent between Counties insofar as density allocation is concerned. Development here may accelerate, and could conceivably necessitate cooperative effort. Finally, Gasparilla Island presents a continuing mutual need to protect its delicate environmental and topographical constraints through prudent land use policies.

Other

1. The remaining policies contained within the Charlotte County Comprehensive Plan (i.e. environmental, housing, etc.) correspond closely to those found within the Lee County Comprehensive Plan.

2. Potential future land use conflicts exist for the Burnt Store area necessitating continued monitoring and communication between each county's respective planning department.

3. Interlocal agreements to provide joint urban services for the emerging Burnt Store area could be economically beneficial for Charlotte and Lee County in the future.

II. CITY GOVERNMENTSA. Cape CoralLand Use

Because the majority of Cape Coral is currently zoned and platted for development, the timing and location of public capital improvements serves as an important guidance mechanism for future development. The area delineated for the planned placement of all public improvements is termed the Capital Improvement Investment Area. The City concentrates on the improvement, extension, and provision of services and facilities within the Capital Improvement Investment Area and therefore provides development incentives within a concentrated land area. The placement of public water lines is probably the greatest incentive for development within the City of Cape Coral. The groundwater

throughout most areas of the City is undesirable for domestic use due to high chloride, sulfur, or iron content. The planned placement of public sewer lines, construction of a new school, bridge, hospital, or park can also serve to stimulate development. Thus, within the City of Cape Coral, future land use and development is directed by the provision of urban services.

The land use designations depicted on the proposed Future Land Use Map for Lee County within the incorporated area of Cape Coral are consistent with the current and proposed zoning. The future capital improvement investment areas of Cape Coral are included entirely within the designated Lee County 2005 urban service boundaries.

B. Sanibel

Land Use

Analysis of the Sanibel Comprehensive Plan reveals an approach to the planning process which is significantly more site specific than Lee County's Plan. The Sanibel Plan provides that both the type and intensity of use shall be determined by the capacity of the island to accommodate development with minimum negative impacts. Development areas such as the Gulf Beach Ecological Zone, the Gulf Beach Ridge, Interior Wetlands, Mangrove Forest, the Bay Beach Ecological Zone, etc., are identified and allowable uses, including densities and intensities, are assigned to each area. An analysis of the annual growth rate is included as a part of the Sanibel Plan and serves as a guide for the number of development permits issued each year. The number

of permits allocated are based upon projected population growth anticipated for the coming year. Location of the permits is based largely upon the availability to provide services for the projected population increase. The Sanibel Plan also includes a set of very specific use regulations.

Limitations of space, access, water, wastewater treatment, and the other urban services have combined with ecological constraints to produce a maximum carrying capacity. Given that maximum, Sanibel has outlined, in their Plan, the exact mechanisms which will work, including performance criteria, to achieve that ultimate figure.

Lee County, however, has quite a different problem in that its land area, relative to Sanibel, has constraints on a different order of magnitude. The ultimate carrying capacity cannot readily be determined at this time. Instead, growth must be predicted over the next twenty years along with provisions to service that growth and preserve those environmental qualities deemed critical to the overall economy and lifestyle of the County.

While the goals of the Sanibel Plan are fundamentally different from the Lee County Plan, it does not mean they are conflicting or exclusive of one another.

Other

The Sanibel Plan evidences a concern with the ecological balance of the natural systems found in the Island. Commitments are made to conserve environmentally sensitive areas, as defined

by hydrology, geology, flora, and fauna, as well as recognizing the critical water management values inherent in the wetland ecosystems prevalent in many parts of the island.

These policies are also reflected in the Lee County Plan. The Conservation/Coastal Zone Element sets up an inventory of soils, vegetation, and wildlife critical in the determination of resource protection areas which is similar to Sanibel's approach. Further, current Lee County regulations require post development stormwater runoff to replicate pre-development stormwater runoff and flows. Also, the Wastewater Subelement mandates that growth may not proceed faster than the ability to provide adequate disposal facilities.

Evacuation is also a major concern of the Sanibel Plan. Because egress from the Island is limited by the Causeway, it is critical that no additional limitations be added which would further delay evacuation times. Developments in the area referenced above will be carefully studied for such impacts by both Lee County and Sanibel. The Public Safety Subelement will also address evacuation issues, requiring that development along evacuation routes provide mitigation for any impact upon those routes.

Sanibel has identified beach access as a critical element in their Parks and Recreation Plan. This echoes what has been set forth in the Lee County Plan for the coastal areas. Indeed, Sanibel and Lee County have already been working cooperatively to utilize the Causeway and Bowman's Beach areas for the benefit of the public. Likewise, similar goals exist for the recognition and preservation of archaeological and historical sites.

In conclusion, a series of intergovernmental agreements covering land use, evacuation, and other issues of mutual interest appears to be merited.

C. Fort Myers

Land Use

The City of Fort Myers' Comprehensive Plan does not include a future land use map. The Element is based on "existing community patterns" which serve "major functions including: living areas; economic enterprise areas such as commercial business, sales, services, and production/distribution including industry, warehousing, utilities and transportation; and public/semi/public community use areas, including parks, government agencies, schools, churches, and conservation areas". Since less than 30% of the city was undeveloped at the time of adoption of this Element (June, 1982), the "existing community pattern" approach is essentially unavoidable. However, a comparison of City/County future land uses cannot be undertaken. Had the City substituted the current zoning map for the future land use map, then comparisons could be made.

Annexation by Ft. Myers requires consultation to insure that the process does not regate necessary land use controls. This is particularly true in critical environmental areas such as Six Mile Cypress Basin.

Other

The City of Fort Myers' Comprehensive Plan is, in essence, a policy plan which delineates the broad goals and objectives toward which the City has committed its efforts. Because of the geographically constrained boundaries, relative to Lee County, it presents somewhat of a different problem for planning purposes than does the much larger, more rural Lee County. Nevertheless, Fort Myers' and Lee County's Plans have several aspects in common.

Ft. Myers' Plan stresses the need for adequate access to the Interstate, North Fort Myers, and the Southwest Florida Regional Airport. It also stresses the need for the improvement of its collector road system and cites a necessity to relieve development congestion due to commercial activities although no mention is made in the City's Plan regarding how these improvements are to be financed. Lee County's Plan is fully consistent with these goals and, through the Metropolitan Planning Organization, County officials have already been working to coordinate transportation planning efforts. These activities will continue in the foreseeable future in order to ensure the maximum in accessibility.

For future parks and recreation needs the City has recognized as a major priority the need to provide both active and passive opportunities. The Ft. Myers Plan suggests that an annually budgeted and escrowed fund be established to achieve these objectives. Land would be acquired and facilities developed for identified areas of need within specific neighborhoods as well as attempting to locate and acquire a community-wide

facility. Additionally, the need for an urbanstyle park within the Central Business District is identified. Programming priorities include year-round residents as well as seasonal residents, tourists, and special groups and interests.

Lee County's Plan identified the need to provide parks and recreational facilities according to specified standards. While this is more detailed an approach than the City's Plan, it appears fully consistent with the goals and objectives described by the City. The County's Plan also is more explicit in establishing the authority to enact an impact fee for financing park improvements associated with the demands placed upon the Parks system by new growth. Like the City's Plan, Lee County's element provides direction in order to most efficiently serve the needs of residents and visitors for leisure activities, facilities, and spaces.

Ft. Myers' plan for its potable water system seeks to continue its level of water quality while expanding its ability to respond to short and long term demands. Improvements in capacity, wellfield protection, filtration, softening, transmission and distribution lines, and storage are all addressed. Lee County's Plan meshes well with these concerns but is broader in its scope, due to the greater diversity of development in the unincorporated areas of the County. Nevertheless, the issues treated by the City's Plan are consistent with the policies specified in the County's Plan.

Sanitary sewer and solid waste disposal are both areas of concern for Ft. Myers. Improvements to sewer systems will be designed to increase capacity for future growth while maintaining environmental integrity. Solid waste disposal is envisioned to move increasingly into the area of resource recovery. In both these areas, City and County Plans show not only similar concerns, but also the ongoing efforts made to deal jointly with problems of communitywide concern.

The Ft. Myers Plan also seeks to minimize drainage pollution of the Caloosahatchee via on-site retention while improving runoff characteristics through improvements to local collection and transmission facilities. Again the fundamental difference in jurisdictions becomes apparent through the review of this sub-element. While the City's Plan can be seen as consistent with the County's the issues dealt with in an urban setting are somewhat different than those of a larger and more rural environment. The County has the luxury of utilizing the natural drainage systems as flood control and water purifying mechanisms while the City does not.

This difference is also reflected in the Conservation and Coastal Zone Elements. While Ft. Myers identifies the need to protect the estuarine features of the Caloosahatchee, the floodplains, the soils, vegetation, air quality, groundwater, natural habitats, aesthetic and scenic sites, flora, and fauna, the areas encompassed by these commitments are only a small fraction of those environmentally sensitive lands under the County's jurisdiction. Nevertheless, the basic consistency of the two Plans can

be evidenced in the shared commitment to these features found in the adoption by both jurisdictions of the Charlotte Harbor Management Plan.

The Ft. Myers' Housing Element seeks to improve the supply and variety of available units, assure affordability (especially for the disadvantaged), improve the quality of the existing housing stock, and to improve and protect neighborhoods as suitable living areas. The County's Plan supports these goals and proceeds further to outline implementation strategies including density bonuses for developments that provide low and moderate cost housing. Recognizing that local government plays a role in the housing market, Lee County's Plan recognizes the need to promote sufficient residential opportunities throughout the community.

Ft. Myers' Plan also contains an Economic Development element. This segment recognizes the position of Ft. Myers in the regional economy and commits the City to work in broadening its economic base. While the County's Plan does not have a separate element, economic development commitments have been woven throughout its fabric. The Plan recognizes the need to diversify and strengthen the County's economic base as well as the necessity to provide public services for commercial and industrial development.

In summary, the City's Plan appears fully consistent with the policies articulated by the County's Plan. The major efforts at intergovernmental coordination will likely remain in areas of information exchange. Interlocal agreements to cooperate on

decisions which impact land uses and infrastructure demands will become more critical as growth progresses. It is in these areas that primary efforts should be made.

III. INTRA-COUNTY GOVERNMENT AGENCIES

In the past, services within the County have been provided by a multitude of government agencies or private utilities. A majority of these agencies finance their respective services from their taxing authority. This taxing authority in most cases, however, has not been accompanied by regulatory authority. As a result, many of these agencies have responded to individual demand which has precluded the establishment of overall development plans for their individual areas. This has caused a pattern of disjointed development throughout many parts of the County.

One of the major objectives of the Lee County Comprehensive Plan is to provide a common framework for development from which each government agency or private utility extending services may make decisions. In this manner, a coordinated well managed development pattern should evolve with all areas of the County having sufficient infrastructure to support the particular level and type of land use prevalent.

Many of the policies within the comprehensive plan will directly affect the government authority or utility providing urban services. As a result, an analysis of the relationship of the comprehensive plan to the provision of essential urban services has been conducted.

A. POTABLE WATER AND WASTEWATER TREATMENT

Most of the policies pertaining to these services are contained in their respective sections of the Community Facilities and Support Services Element. Basically, these utilities will be affected in a similar manner. Policies VII.B.1. (Potable Water) and VII.G.1. (Wastewater) require the provision of sufficient infrastructure to provide standard utility service (i.e. central water and sewer) to all parts of the Urban Development Areas, Interstate Highway Interchanges, Airport and Airport Commerce areas as designated on the future land use map. To ensure coordination and assist in compliance with the Comprehensive Plan, policies within the Potable Water Subelement provide for the County to establish a Water Resource Agency. Finally, policies contained within their respective elements require utility companies to file with the County a capital investment and system development plan consistent with the County's Comprehensive Plan.

B. SOLID WASTE

Solid waste management is specifically addressed in a subelement of the Community Facilities and Support Services Element. Provision of solid waste management services shall remain with those independent private companies which demonstrate the most effective performance. (Objective VII.Q.1).

C. EDUCATIONAL FACILITIES

The School Board of Lee County is responsible for providing educational services to the community. As mentioned previously, representatives of the School Board have been involved in the comprehensive planning process through their inclusion in the Technical Advisory Committee. Membership on the Executive Advisory Committee (E.A.C.) also insures their participation within the daily planning process.

The County has pledged within the Educational subelement to establish a closer planning relationship with the School Board by creating and adopting mutually satisfactory standards for the location and development of educational institutions. It is expected that these standards will allow the School Board to locate schools consistent with local zoning and land use regulation (Policy VII.V.2.).

D. OTHER SERVICE PROVIDERS

Policies throughout the Comprehensive Plan insure that the County will work closely with the following government agencies to provide the most coordinated and cost efficient level of service to their respective districts in coordination with the Land Use map.

TABLE 1. GOVERNMENT AGENCIES

Lee County Library	Lee Memorial Hospital Bond
Lee County Hyacinth Control	Lee County Mosquito Control
Lee County Unincorp. - MSTU	Alabama Grove Light - MSTU
Alva Fire District	Bayshore Fire District
Billy Cr. Comm. Light - MSTU	Boca Grande Fire District
Bonita Springs Fire District	Bonita Springs Light
Caloosa View 1st Addn. Light	Captiva Erosion - General
Captiva Erosion - I & S	Captiva Fire District
Charleston Park Light - MSTU	Cypress Lakes Light
Estero Fire District	Flamingo Bay Light
Ft. Myers Beach Fire District	Ft. Myers Beach Library
Ft. Myers Beach Light	Ft. Myers Beach Mosquito Cont.
Ft. Myers Beach Sewer	Ft. Myers Beach Sewer - MSTU
Ft. Myers Shores Fire District	Ft. Myers Shore Light
Ft. Myers Villas Light - MSTU	Gasparilla Is. Waste - MSTU
Harlem Heights Light	Hendry Creek Light - MSTU
Iona Gardens Light - MSTU	Iona-McGregor Fire District
Lehigh Acres Fire District	Lehigh Acres Light
Lochmoor Light - MSTU	Maravilla Fire District - MSTU
Matlacha-P.I. Fire District	Matlacha-P.I. Ambulance
Mobile Haven Light	Morse Shores Light
N. Ft. Myers Fire District	N. Ft. Myers Light
Page Park Light	Palmetto Point Light - MSTU
Palmona Park Light - MSTU	Port Edison Light
Russell Park Light - MSTU	San Carlos Fire District
San Carlos Light	Sanibel Fire District
Skyline Light	S. Fla. Water Mgmt.
S. Ft. Myers Sewer	S. Ft. Myers Sewer - MSTU
S. Trail Fire District	St. Jude Harbor Light
Tanglewood Imp.	Tice Fire District
Town & River Imp. - MSTU	Trailwinds Light - MSTU
Tropic Isles Light	Useppa Fire District - MSTU
Villa Palms Light	Villa Pines Light - MSTU
Waterway Estates Light	Waterway Shores Light
West Coast Inland Waterway	Whiskey Creek Imp. - MSTU
County Line Drainage	East Mulloch Drainage
East County Water Control	San Carlos Estates Drainage
City of Fort Myers	City of Cape Coral
Cape Coral Water & Sewer	City of Sanibel

IV. REGIONAL, STATE, AND FEDERAL GOVERNMENT AGENCIES

Goals, policies and objectives contained with the Lee County Comprehensive Plan relate or coordinate closely with those of a myraid of government agencies located at the regional, State, and Federal levels. The matrix included within the element depicts various portions of the Comprehensive Plan where goals, policies and objectives related to the respective mission of the government agency may be found.

TABLE 2. STATE AND REGIONAL AGENCY MATRIX

	Land Use	Housing	Traffic Circulation	Recreation & Open Space	Conservation & Coastal Zone Management	Sanitary Sewer-Solid Waste	Drainage Potable Water	Disaster Preparedness (Sub Element)
<u>STATE OF FLORIDA</u>								
Dept. of Environ. Regulation (DER)					X	X	X	
Dept. of Natural Resources (DNR)				X	X			
Dept. of Community Affairs (DCA)	X	X						X
Dept. of Health and Rehab. Svcs. (HRS)		X				X		
Dept. of Agriculture and Consum. Svc.							X	
Dept. of Transportation (DOT)	X		X					
Dept. of Education	X	X						
Dept. of Corrections	X							
Dept. of Banking and Finance		X						
Dept. of Business Regulation	X							
Dept. of State		X						X
Game and Fresh Water Fish Commission	X				X			
Dept. of Commerce		X		X				

TABLE 2. STATE AND REGIONAL AGENCY MATRIX

	Land Use	Housing	Traffic Circulation	Recreation & Open Space	Conservation & Coastal Zone Management	Sanitary Sewer Solid Waste	Drainage Potable Water	Disaster Preparedness (Sub Element)
<u>REGIONAL AGENCIES AND GOVERNMENTS</u>								
S.W. Fla. Regional Planning Council	X	X	X	X	X	X	X	X
South Florida Water Management					X		X	X
W. Coast Inland Navigation Dist.					X			
Charlotte Co.	X		X			X	X	X
Collier Co.	X		X			X	X	X
Hendry Co.	X		X			X	X	X
City of Cape Coral	X	X	X	X	X	X	X	X
City of Ft. Myers	X	X	X	X	X	X	X	X
Sanibel	X	X	X	X	X	X	X	X
<u>FEDERAL AGENCIES</u>								
Environ. Prot. Agency					X	X		
Army Corps of Eng.					X		X	X
H.U.D.		X						
Dept. of Interior					X			
Soil Conservation Svc.					X		X	

A. Special Environmental Concerns and Protection

The government agencies which exert regulatory authority over the environment are of particular importance to Lee County. Each agency's permit authority is limited, primarily due to legislative rules or budget constraints. In many instances (i.e. upland ponds) satisfactory protection of the environment may be lacking. Environmental policies within the Lee County Comprehensive Plan are designed to provide a safety net in areas where other governmental permit authority may be lacking or absent. Policies located within the Conservation and Coastal Zone Management Element coordinate with and provide additional protection where needed with the permit authority of the State Department of Environmental Regulation (DER); State Department of Natural Resources (DNR); South Florida Water Management District (SFWMD); Army Corps of Engineers and the Federal Environmental Protection Agency (EPA).

B. Coordination with Southwest Florida Regional Plan

The importance of developing and adhering to a regional plan has taken on added significance in this decade. An overall regional development philosophy can assist local governments in developing planning goals and objectives which will preserve their communities' unique qualities and yet allow citizens of the region access to urban services based on economies of scale.

The regional development philosophy of Southwest Florida, put simply, can best be compared with the mechanics of a wheel. The hub, in this case Lee County--Fort Myers, provides urban

services such as shopping (Edison Mall) and transportation facilities (Southwest Florida Regional Airport) on a scale which individual communities could not afford. Periphery communities such as Sanibel, LaBelle and Punta Gorda act as spokes whose combined demand support the larger scale urban services located in the hub.

The Regional Land Use Policy Plan developed by the Southwest Florida Regional Planning Council was analyzed in relation to the Lee County Comprehensive Plan in order to insure regional consistency and promote intergovernmental coordination. Many of the goals, policies and objectives contained within the regional plan were reflected throughout the County Plan.

C. COORDINATION WITH CHARLOTTE HARBOR MANAGEMENT PLAN

Section 380.045(1)(2), Florida Statutes, provides the Governor, acting as the chief planning officer of the State, the authority to establish resource planning and management committees for sections of Florida which are deemed to contain significant state wide resources. The purpose of the committees is to examine issues threatening these resources and to create resource management plans which would prevent their degradation. The tremendous growth pressure exhibited in Lee, Charlotte, and Sarasota Counties and its potential impact on the Charlotte Harbor estuarine system resulted in Governor Graham appointing the Charlotte Harbor Committee in 1978. The Committee was charged

with the responsibility of creating a resource management plan which would preserve the Charlotte Harbor estuarine system and environs and still provide for the forecasted growth.

The Charlotte Harbor Committee, whose membership included representatives from each local government within Charlotte, Sarasota and Lee County adopted the Charlotte Harbor Management Plan (CHMP) on June 5, 1981. The CHMP contains two goals; fifteen objectives and numerous implementation actions which are designed to provide local governments a general framework of criteria to be used in regards to development decisions. In order to insure implementation of the resource plan the Committee approved a resolution that required each local government to incorporate goals, policies and objectives within their own comprehensive plan that reflect those contained within the CHMP.

Many of the goals, policies and objectives contained within the Lee County Comprehensive Plan coordinate with and support those of the Charlotte Harbor Management Plan.

Implementation of the Charlotte Harbor Management Plan is insured through its incorporation into the Lee County Comprehensive Plan and the creation and adoption of implementing ordinances.

INTERGOVERNMENTAL COORDINATION
GOALS, POLICIES, AND OBJECTIVES

GOAL

XII.A. To cooperate and coordinate with the various governments in Southwest Florida in order to achieve effective, efficient, and responsive government for the citizens of Lee County.

OBJECTIVES

- Objective XII.A.1. Strive to increase effectiveness, efficiency, and responsiveness of local government operations through coordination and cooperation in order to:
- a. reduce duplication of effort and facilities;
 - b. increase the positive external effects of the County's activities on other jurisdictions, while reducing the negative;
 - c. reduce the negative internal effects on Lee County that may be caused by the activities of other jurisdictions; and
 - d. insure cooperation in mutually advantageous plans, programs, and activities.

Objective XII.B. Establish appropriate coordinating mechanisms, particularly at the policy level, where they do not now exist.

Objective XII.C. Facilitate the annexation of areas by the several municipalities where such annexations are appropriate and improve the effectiveness of service delivery to the subject areas and enhance the efficiency of both the city and the county.

Policy XII.C.1. Lee County shall encourage and cooperate in the annexation of areas adjacent to the various municipalities consistent with good planning and management principles as well as the specific language of Chapter 171, F.S.

Policy XII.C.2. The County, in consideration with each city, shall designate areas which would be appropriately annexed to that city in order to rationalize boundaries and to improve the delivery of public services by both jurisdictions to the land involved.

Policy XII.C.3. The County shall act to encourage each city to pursue annexations of enclaves, pockets or finger areas of unincorporated county and

POLICYPolicy XII.A.1.

Lee County shall support intergovernmental coordination by maintaining a liason with agencies of the State and Federal Governments to coordinate relevant programs, activities and funding mechanisms at the local level.

Policy XII.A.2.

Lee County shall:

- a. utilize the Metropolitan Planning Organization (MPO) for all matters of coordination in transportation planning and implementation;
- b. utilize the Technical Advisory Committee to the MPO (TAC/MPO) in matters requiring communication, cooperation, and coordination between Lee County and other jurisdictions;

Policy XII.A.3.

Lee County shall work closely with municipalities, special use districts, adjacent and overlapping jurisdictions to adopt mutual policies consistent with the Comprehensive Plan in order to give common direction to all local government actions where possible and appropriate.

Policy XII.A.4.

Lee County after prior consultation and resolution where possible will establish, execute, and maintain interlocal agreements, which will include notification and exchange of significant development applications, with adjoining jurisdictions for an "area of impact" relating to:

- a. changes in land use or developments adjoining County rights-of-way in other jurisdictions;
- b. changes in land use or developments that specifically impact county-wide services or utilities;
- c. entering into prior consultation with the municipalities and adjacent counties in cases of development of land use changes when such changes are of mutual concern; and
- d. coordinating housing and economic development.
- e. joint grant applications including, but not limited to, Housing Assistance, redevelopment, transit, and utilities.

Policy XII.A.5.

Lee County will investigate and if feasible, initiate the creation of an intergovernmental forum designed to hear and resolve conflicts through a binding resolution format.

Policy XII.A.6.

Lee County shall establish and maintain the appropriate mechanisms and organizations to ensure maximum feasible communication and coordination with all the relevant jurisdictions and agencies in planning, executing and evaluating disaster preparedness programs.

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XIII. IMPLEMENTATION
LEE COUNTY COMPREHENSIVE PLAN

IMPLEMENTATION
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IMPLEMENTATION

No plan can be effective unless its goals, objectives, and policies are implemented and its standards and mandates enforced. This comprehensive plan requires two types of performance from County officials: legislative actions from the Board of County Commissioners and administrative actions to be directed by the County Administrator's office.

Legislative actions include the drafting and passage of ordinances -- and amendments to existing ordinances -- necessary to enforce the provisions of this plan. The following list summarizes these legislative actions.

1. Amendments to the County Zoning Ordinance which must be passed within eight months addressing the matters of:
 - Planned Development Districts
 - Sign Regulations
2. An amendment to the County Zoning Ordinance providing for the complete rezoning of unincorporated Lee County to make all zoning regulations consistent with the comprehensive plan. This amendment shall be adopted within thirty months.
3. Amendments to the Development Standards Ordinance addressing matters of:
 - Emergency storm shelter provisions
 - Incentives for greywater systems
 - Neighborhood park dedication requirements

- Other park dedication requirements
 - Development design standards for Resource Protection Areas and Transition Zones
 - Removal of noxious exotic species
 - Waste water management revisions
4. Adoption of a Comprehensive Housing Code within eighteen months
 5. Adoption of a Transfer of Development Rights (TDR) Ordinance within twelve months
 6. Adoption of a Marine Sanitation Ordinance
 7. Adoption of an Environmental Impact Statement Ordinance
 8. Adoption of a Mandatory Refuse Collection Ordinance
 9. Adoption of a Wellfield Protection Ordinance
 10. Amendments to the Building Code
 11. Adoption of an ordinance providing density bonuses for the construction of low and moderate income housing. This ordinance shall also incorporate or encourage interlocal agreements relating to housing.
 12. Adoption of a Historic Preservation Ordinance
 13. Adoption of a Planned Development District Ordinance
- The principal administrative actions mandated by this plan

include the following studies and actions:

1. A Transfer of Development Rights/Market Analysis Study
2. An Agricultural Lands Study

3. Establishment of a Water Resource Agency
4. A county-wide Fire Coverage Feasibility Analysis
5. Establishment of a unified "911" Emergency Response Communications network
6. Establishment of a Beach Acquisition and Maintenance Program
7. Establishment of a Master Storm Water Management Program
8. Mandate the adoption of a Capital Improvement Program

FINDINGS AS TO PLAN CONSISTENCY

- A. Prior to the approval of a land use change, including any zoning change, special exception, variance, special use permit, or unusual use permit, the following findings shall be made:
- (1) The land use change is consistent with the adopted Lee Plan. In addition, the application meets the following specific criteria.
 - (2) The land use change meets or exceeds the applicable performance and locational standards.
 - (3) Urban Services as defined by the Lee Plan are or will be available and adequate to serve the proposed land use change, when proposing a change to an Urban Services Category.
 - (4) The land use change complies with the densities and general uses set forth in the Lee Plan.

- (5) The land use change will protect, conserve or preserve environmentally critical areas and natural resources.
 - (6) The land use change is compatible with existing or planned land uses and would not cause damage, hazard or nuisance, or other detriment to persons or property.
 - (7) The location of the proposed land use change does not place an undue burden upon existing transportation and other services and facilities and will be served by streets of a capacity sufficient to carry traffic generated by the development.
- B. Prior to site plan approval or the issuance of a development order, the following additional findings shall be made in writing:
- (1) Land uses and structures are well integrated, properly oriented and functionally related to the topographic and natural features of the site, and the placement of uses or structures within the development minimizes the expansion and construction of street and utility improvements.
 - (2) The internal street system is designed for the efficient and safe flow of vehicles and pedestrians without having a disruptive effect on the activities and functions contained within and adjacent to the development.

- (3) In residential developments, community facilities, such as park, recreational and open space areas are functionally related to all dwelling units and are easily accessible via pedestrian and bicycle pathways. Townhouses, condominiums, apartments and other similar types of dense multi-family residential development shall have common open space provided directly accessible thereto.

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XIV. ADMINISTRATIVE AND PROCEDURAL PROVISIONS

LEE COUNTY COMPREHENSIVE PLAN

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EFFECT AND LEGAL STATUS OF PLANA. Effect of the Comprehensive Plan and Preservation of Clearly Vested Rights

Upon adoption of the Amended Plan, all development and all actions taken in regard to development orders shall be consistent with the Plan as adopted. All land development regulations enacted or amended after the effective date of the Lee Plan shall be consistent with the Lee Plan. Land development regulations in existence as of the effective date of the Lee Plan which are inconsistent with the Lee Plan shall be amended to conform to the goals, objectives, and policies of the Lee Plan, as provided for the implementation section of the Plan.

The terms "consistent with" and "in conformity with" shall mean that all development actions or orders will tend to further the goals, objectives, and policies of the Plan and will not specifically inhibit or obstruct the attainment of articulated policies. Where goals, policies or objectives of particular elements appear to be in conflict, such conflicts shall be resolved upon an analysis of the entire Lee Plan as it may apply to the particular area at issue.

The impact of the Lee Plan upon ongoing development may involve a balancing of public needs reflected in the Lee Plan and the expectations of those persons in the process of developing property in a manner inconsistent with the goals, policies, and objectives of the Lee Plan. There will necessarily be a transition period in which such development rights will have to be

balanced with the public needs and purposes expressed in the Lee Plan. During this transition period, in instances where development has been reviewed and determined to be consistent with the 1979 Comprehensive Plan as amended and a final development order has been issued, such development, to the extent it cannot reasonably comply with the standards established in the Lee Plan, will be deemed consistent with the Lee Plan as outlined below.

A preliminary development order, not otherwise vested, issued prior to the effective date of this plan, and subsequently issued, shall be deemed consistent with this plan for a period of three years only as to:

- (1) terms specifically approved in writing; or
- (2) accompanying plans expressly approved as to matters requested to be in said plans and requested to be approved as part of the preliminary development order process.

A final development order, not otherwise vested, shall be deemed consistent with the amended plan for a period of five years from the date of issuance of the development order, only as to:

- (1) terms specifically approved in writing; or
- (2) accompanying plans expressly approved as to matters requested to be in said plans and requested to be approved as part of the development order process.

To be deemed consistent, such preliminary and final development orders shall also meet all applicable public health, safety, and welfare standards. In addition to above-mentioned prelimi-

nary and final development orders, the following categories of approvals, projects and developments shall be deemed to be consistent with the Lee Plan, subject to the applicable conditions as set forth below:

- (1) A development or project that has a building permit issued by Lee County, valid on the effective date of the Lee Plan;
- (2) A development or project that has been granted an approval under the site plan approval process of the Lee County Administrative Code F-0015, or its predecessors, and the approval was obtained prior to the effective date of the Lee Plan;
- (3) A site plan approved by court order or stipulated settlement which is the result of litigation in which Lee County was a party;
- (4) An approved, platted subdivision pursuant to Part I of Chapter 177, Florida Statutes;
- (5) Final P.U.D. approvals;
- (6) All developments approved under a site-specific P.U.D. ordinance;
- (7) Valid agricultural activities in Urban Service Areas, in existence prior to the effective date of the Lee Plan. No increase in level or change in type of activity will be deemed consistent under this category;
- (8) For ongoing commercial operations, an addition or interior remodeling, limited to 25% of the existing floor area or 1500 square feet, whichever is less,

except within Resource Protection Areas and Transition Zones (this is a one time addition); and

- (9) A development or project that has been granted an exemption from the requirements of Ordinance 82-42, provided that the developer apply for and receive site plan approval within six (6) months after the effective date of the Lee Plan. Such application shall be reviewed under Lee County Administrative Code F-0015, and Lee County regulations, as they exist on the effective date of the Lee Plan.

The following general conditions shall apply to the above nine categories:

- (1) Construction must have begun within two (2) years of the issuance of the approval;
- (2) The activity must comply with all applicable public health, safety, and welfare standards and regulations;
- (3) These categories shall be deemed consistent only insofar as those items specifically approved; and
- (4) The activity shall not be deemed consistent if there has been a substantial deviation from the approval granted.

Notwithstanding anything in this section to the contrary, a development order which would otherwise be deemed consistent shall not be deemed consistent upon a showing by the County of a peril to the public health, safety, or general welfare of the residents of Lee County, which peril was unknown at the time of approval.

In other circumstances where development expectations may conflict with the Lee Plan, the Lee Plan provides a procedure for administrative determinations of vested rights as set forth in subsequent sections of this Chapter.

Nothing in the Lee Plan shall limit or modify the rights of any person to complete any development that has been authorized as a development of regional impact pursuant to Chapter 380, Florida Statutes.

ADMINISTRATIVE INTERPRETATIONS OF THE PLAN

Persons or entities whose interests are directly affected by the Lee Plan have the right to an administrative interpretation of the Plan as it affects their specific interests. Such an interpretation, under the procedures and standards set forth below, shall thereafter be binding upon the County. Such administrative interpretations are intended to expedite and reduce disputes over interpretations of the Lee Plan, resolve certain map or boundary disputes, avoid unnecessary litigation, ensure consistency in plan interpretation, and provide predictability in interpreting the Plan.

Anyone seeking an administrative interpretation shall submit an application and requested information and shall have the burden of demonstrating compliance with the standards set forth below.

A. Subject Matter of Administrative Interpretations

The person designated by the Board of County Commissioners shall provide administrative interpretations only as to the matters set forth below. In no event shall administrative interpretations hereunder involve questions of the consistency of development or land use regulations with the Lee Plan. Administrative interpretations shall be limited to:

- (1) Clarification of land use map boundaries as to a specific parcel of property;
- (2) Whether, for administrative purposes, rights have vested as to a specific parcel of property or development. Applications for vesting interpretations shall be made within six (6) months after the effective date of the Lee Plan;
- (3) Whether the single-family residence provision, as hereinafter defined, applies; and
- (4) Whether an area has been designated a resource protection area or transition zone on the basis of a clear factual error.
- (5) During the transition period six (6) months following the effective date of the Lee Plan, apparent oversights, policy conflicts, and scrivener's errors previously identified by the LPA may be the subject of an administrative interpretation where they result in inequities or unreasonable interpretations.

B. Standards for Administrative Interpretations

Administrative interpretations of the Comprehensive Plan shall be determined under the following standards:

- (1) Interpretations which would be confiscatory, arbitrary, capricious, unreasonable, or which would deny all economically viable use of property shall be avoided;
- (2) Vesting determinations shall be governed by the standards for vesting set forth in section (6) below;
- (3) All interpretations should weigh the public benefits and burdens against the private benefits and burdens to be imposed. If an interpretation has the effect of providing a substantial public benefit, greater weight should be given to the effect of the interpretation on the private property rights and vested rights. However, if the effect of the interpretation would be to relieve or prevent a substantial public burden, greater weight should be given to the relief or prevention of that burden;
- (4) Interpretations should be consistent with background data, other policies, and objectives of the Plan, as a whole;
- (5) Interpretations should, to the extent practical, be consistent with comparable prior interpretations;
- (6) Standards for administrative interpretations of vested rights: The period for administrative determination of vested rights shall be limited to six months from the

effective date of the Plan. Vested rights shall be deemed to exist where it is clearly shown by the applicant that:

- (a) The applicant has relied on an official affirmative act or omission of a required act of Lee County, within the scope of the County's authority; and
- (b) The applicant has acted in good faith and without knowledge that existing or pending regulations might prohibit or prevent the development expectations claimed to be vested; and
- (c) The applicant has acted to his or her substantial detriment in reliance upon the County's act or approval, and, such that it would be highly inequitable and unjust to destroy the rights he or she has acquired.

To provide applicants with additional predictability in considering an administrative interpretation of vested rights, the person designated shall consider whether:

- (a) The applications for development approvals and administrative interpretations of vested rights contain factual errors or misrepresentations;
- (b) The applicant would suffer actual and substantial economic loss if required to complete development in accordance with the Plan or implementing regulations;

(c) The applicant has at all times conformed with relevant laws, rules, and regulations of the State of Florida and Lee County; and

(d) The applicant is not otherwise estopped from claiming vested rights through its own acts.

However, a determination of vested rights under this provision shall expire and be null and void unless construction is actually commenced within five years of the date of such determination and unless said construction continues at a reasonable rate under the circumstances to completion of the project;

Substantial Deviation. Any substantial deviation from a prior approval which has received vested rights or partial vested rights status shall cause the development involved to be subject to the policies and implementing decisions and regulations set forth in this plan.

Notwithstanding anything in this Section to the contrary, a vested rights determination may be revoked upon a showing by the County of a peril to the public health, safety or general welfare of the residents of Lee County unknown at the time of approval.

(7) Single-Family Residence Provisions: Notwithstanding and other provision of this plan, any entity owning property prior to the effective date of the Lee Plan which is; 1) a lot created pursuant to Part I, Chapter 177, Florida Statutes plat, 2) a lot not approved by

the County but recorded pursuant to the 1973 Subdivision Regulations, or 3) a lot or parcel which was lawfully recorded in the office of the Clerk of Circuit Court prior to the adoption of the Lee Plan, shall be allowed to construct not less than one single-family residence on said property. The residence shall comply with all applicable health, safety, and welfare regulations, as those regulations exist at the time the application for the residence is submitted. This right shall run with the land and be available to any subsequent owner if the property owned prior to the adoption of the Lee Plan is transferred in its entirety. The lot or parcel shall have been in conformance with the zoning regulations in effect at the time the lot or parcel was recorded.

C. Procedure for Administrative Interpretations

The following procedures shall apply in obtaining administrative interpretations:

- (1) Anyone seeking administrative interpretations of the Plan shall submit an application on a form provided by the County with all requested information;
- (2) The person designated by the Board shall review such information, in conjunction with the County Attorney's office, and issue an administrative interpretation in writing within sixty (60) days after submittal of all requested information.

- (3) In the case of a vested rights or single-family residence provision determination, such interpretation shall contain findings and reasons for declaring the existence or non-existence of vested rights.
- (4) An administrative interpretation may be appealed to the Board of County Commissioners by filing a written request within fifteen (15) days after the administrative interpretation has been made. In reviewing such an appeal, the Board shall consider only information submitted in the administrative interpretation process and shall review only whether the designated individual has properly applied, to the facts presented, the standards set forth in the Plan for such administrative interpretations. No additional evidence shall be considered by the Board. The Board of County Commissioners shall conduct such appellate review at a public hearing.
- (5) The Board of County Commissioners shall consider the appeal at a hearing to be held within thirty (30) days after the date of the written request for appeal. A decision overruling the written interpretation rendered by the Board's designee shall be in writing and shall be rendered by the Board within thirty (30) days after the date of the hearing. Alternatively, the Board may adopt the administrative interpretation being appealed.
- (6) Where appropriate and necessary all administrative interpretations rendered by the Board's designee and

thereafter approved by the Board of County Commissioners shall be incorporated into the Plan at the next amendment.

PLAN AMENDMENT PROCEDURES

Anyone whose interests are shown to be substantially affected by the Plan may request initiation of a plan amendment under the procedures set forth below.

A. Frequency of Plan Amendments and Mandatory Urban Services Area Review

In order to avoid piecemeal amendments to the Plan and to ensure a complete evaluation of both the public and private impacts of all requested amendments, proposed changes to the Plan will be considered on the first anniversary of plan adoption and once every two years thereafter. Specific inaccuracies or specific interpretations of the Plan may be obtained at any time through the administrative interpretation procedures of the Plan.

To ensure that adequate land is available for growth and to ascertain whether designated urban service areas require modification, the Local Planning Agency shall, six months prior to each biannual plan amendment period, investigate the need for modification of existing urban service areas and, if modifications are necessary, shall recommend necessary modifications to the Board.

B. Plan Oversight Review and Amendment Procedures

Within thirty (30) days after the effective date of the Lee Plan, the LPA shall hold public hearings to identify apparent oversights, policy conflicts, scrivener's errors, or incomplete policies in the Lee Plan. The LPA shall provide the Board of County Commissioners with a report and recommendations for corrective amendments as to such matters not before 120 days, but no later than 180 days, after the effective date of the Lee Plan. Thirty (30) days after receipt of the LPA's report the first amendment process, as specified below, will commence.

C. Application and Review Procedures for Plan Amendments

Any request for amendments, modifications, additions or changes to the Comprehensive Plan shall be submitted to the Division of Community (DCD) at any time. The DCD shall initiate review of such requests on January 1 of each year in which plan amendment may occur. Requests received prior to January will be held for review until that time. Requests received after January 31 will be held until the next review period begins.

Unclear or incomplete applications may be supplemented no later than February 15th. Any request which requires a modification to designated urban service areas shall be accompanied by an analysis of expected economic and environmental impacts. To ensure analysis of all relevant information, all appraisals, economic, environmental, or other reports or studies relied upon by a person or entity seeking plan amendment, shall be submitted no later than February 15. The LPA and the Board shall not

consider any reports or studies submitted thereafter. After receipt of applications the following procedure shall be followed:

- (1) The DCD shall prepare a list and description of all applications received, including staff applications, and describe the nature of each application and the reasons stated for requesting each proposed amendment. Such list shall be submitted to the Local Planning Agency on or before March 1st;
- (2) The DCD shall submit to the Local Planning Agency on or before the first business day of April the Division's recommendations on each application whether or not an impact statement is required;
- (3) DCD shall also prepare and submit by the first business day in May, an economic and environmental impact statement as to all plan amendments requiring a change in the existing urban service area. Such statement shall describe economic and environmental benefits and detriments reasonably expected to result from the proposed amendment;
- (4) The Local Planning Agency shall hold one or more public hearings on applications for plan amendments prior to June 1st;
- (5) The Local Planning Agency shall make its recommendations and either certify proposed amendments, modifications, additions or changes to the Plan, or certify its

reasons for not recommending such changes. Said certification shall be transmitted to the Board of County Commissioners on or before July 1st;

- (6) On or before August 15th, the Board of County Commissioners, following one or more public hearings, shall transmit its proposed amendments to the Department of Community Affairs and the Regional Planning Council;
- (7) At least two weeks after replying to any Department of Community Affairs and Regional Planning Council objections, the Board of County Commissioners shall take final action on applications for all amendments to the Comprehensive Plan. At least two public hearings shall be held on such applications.

(215A-D)

GLOSSARY OF "TERMS"

- ACTIVE RECREATION:** Active recreation requires a certain degree of physical exertion. Recreation activities that are of this orientation are generally of an organized or team nature and usually require an established play-field or type of court to accommodate them (i.e. baseball, football, tennis, basketball). This form of recreation helps to promote better physical fitness and mental wellbeing by allowing for a release of energies and tensions.
- AVERAGE ANNUAL DAILY TRAFFIC:** The total yearly volume divided by the number of days in the year, commonly abbreviated as AADT.
- BASE FLOOD:** The flood having a one percent (1%) chance of being equal or exceeded in any given year.
- "BEST MANAGEMENT PRACTICE":** That practice which provides reasonable assurance that a given standard of performance can be achieved (South Florida Water Management District).
- BIOLOGICAL OXYGEN DEMAND (BOD):** The amount of organic matter in water available to be taken up with dissolved oxygen from the water by biological processes.
- CAPACITY:** Capacity is the maximum number of vehicles which has a reasonable expectation of passing over a given section of roadway during a given time period under prevailing roadway and traffic conditions.
- CAPITAL IMPROVEMENTS:** The acquisition of land, real property or a physical facility, or the construction of a physical facility.
- CAPITAL IMPROVEMENT BUDGET:** The annually adopted list of capital improvements to be built or begun in the ensuing fiscal year together with detailed cost estimates and commitments of funds by source.
- CAPITAL IMPROVEMENT PROGRAM:** The adopted schedule or timetable of proposed capital improvements to be carried out during a specific period and listed in order of priority, together with cost estimates and the anticipated means of financing each project. Often used as a bridge between the Comprehensive Plan and the annual budgeting process.
- CHEMICAL OXYGEN DEMAND (COD):** The amount of matter available in water with the potential to take up dissolved oxygen from the water by various chemical processes.
- CLUSTERING:** A development design technique that concentrates on a group of buildings or uses in specific areas to allow the remaining area to be used for open space, buffering, joint-parking, recreation, water management or protection of environmentally sensitive areas.
- CONDOMINIUM:** A type of ownership of an apartment in a building--or a house in a development--where ownership of common areas is shared. Ownership in

GLOSSARY OF "TERMS" (cont'd)

CONDOMINIUM (cont'd): which the owner has an individual deed (and likely also an individual mortgage) on the unit, and also holds a common or joint ownership in all common areas, such as grounds, lobbies, and elevators. A condominium unit need not be occupied by the owner to be counted.

Noncondominium: All other types of ownership, including cooperatives where a share in a corporation with title to a multi-unit property entitles the owner to occupy a specific unit.

COST EFFECTIVE: An action or technique is "cost effective" when it offers more benefit per unit cost or lower cost per unit benefit than an alternative.

COUNTY COASTAL CONSTRUCTION CONTROL LINE (ZONES): The County Coastal Construction Control line or Zones landward of the mean high water along the Gulf of Mexico are identified on the Lee County Coastal Construction Setback Map which is on file at the Division of Community Development.

DENSITY: The number of residential dwelling or housing units per gross acre (du/a). Densities specified in this Plan are Gross Residential Densities. For the purpose of calculating gross residential density, the total acreage of a development includes those lands to be used for residential uses, and includes land within the development proposed to be used for streets and street rights-of-way, utility rights-of-way, public and private parks, recreation and open space, schools, community centers, and facilities such as police, fire and emergency services, sewage and water and drainage. Lands for commercial, office and industrial uses, existing open water bodies and other non-residential uses shall not be included.

DEPARTMENT OF NATURAL RESOURCES COASTAL CONSTRUCTION CONTROL LINE: The Department of Natural Resources Coastal Construction Control line or Control line is the line established pursuant to the provisions of Sections 161.052-16.053, Florida Statutes.

DEVELOPMENT: Has the meaning given in Chapter 380, Florida Statutes.

DEVELOPMENT OF COUNTY IMPACT (D.C.I.): A development which, because of its character, magnitude, location, size, timing, density or intensity would have a substantial effect upon the health, safety and welfare of the citizens of the County. Developments of County Impact shall be specified in zoning or development regulations and ordinances.

DEVELOPMENT ORDER: Any order granting, denying, or granting with conditions an application for a development permit.

DEVELOPMENT PERMIT: Includes any building permit, zoning permit, subdivision approval, rezoning, certification, special exception, variance, or any other official action of local government having the effect of permitting the development of the land.

GLOSSARY OF "TERMS" (cont'd)

FLOODING: A general or temporary condition of partial or complete inundation of normally dry land areas from; (1) Overflow of inland or tidal water, (2) Unusual and rapid accumulation or runoff of surface water from any source.

FLOOD HAZARD AREA: The area subject to flooding during the 100 Year Storm Event or base flood as defined by the Federal Flood Insurance Program.

FLOOD PRONE AREA OR FLOODPLAIN: Any land area susceptible to being inundated by water from any source.

FRANCHISE: An exclusive right to sell a good or produce a service within a limited geographic area.

FUNCTIONAL STREET CLASSIFICATION: Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner. Functional classification defines the nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through the overall network.

HOUSING UNIT: A house, apartment, mobile home or trailer, group of rooms, or single room occupied or intended for occupancy as a separate living quarters. Separate living quarters are those in which the occupants do not live and eat with any other person in the structure and which have direct access from the outside of the building or through a common hall.

HYDROPERIOD: The cyclic variation in the volume of water flowing in a system through time.

IMPERVIOUS: The condition of not permitting a material (gas or liquid) to pass through another material (solid); for example, water through an asphalt pavement.

INFILTRATION: The flow of a liquid through a porous material (also percolation).

INTENSITY: A measurement of the degree of customarily non-residential uses based on use, size, impact, bulk, shape, height, coverage, sewage generation, water demand, traffic generation, or floor area ratios.

LAND: Earth, water and air, above, below or on the surface, and includes any improvements or structures customarily regarded as land.

LAND USE: The development that has occurred on the land, the development that is proposed by a developer on the land, or the use that is permitted or permissible on the land under the adopted Comprehensive Plan or element or portion thereof, land development regulations, or a land development code, as the context may indicate.

GLOSSARY OF "TERMS" (cont'd)

LEACHATE: The solution/suspension of material in water which has percolated through a landfill.

LEVEL OF SERVICE: Level of service is a term which, broadly interpreted, denotes any one of an infinite number of differing combinations of operating conditions that may occur on a given lane or roadway when it is accommodating various traffic volumes. Level of Service is a qualitative measure of the effect of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs. In practice, selected specific levels are defined in terms of particular limiting values of certain of these factors. Levels of Service vary from "A" to "F". Level of Service "A" provides a free flow condition with relatively low volumes and high speeds. Level of Service "E" provides unstable flow and Level of Service "F" forced flow. Level of Service "C" is a desirable efficiency whereas Level of Service "D" is often associated with urban and peak season travel.

MARINA: Marina means any place which allows for the mooring and/or storage of boats or fueling facilities or sales.

MARINA (INDUSTRIAL): Any place which allows for the mooring and/or storage of boats fueling facilities or ancillary repair and maintenance services or sales.

MIXED USE: The development of land or building or structure with two or more different but compatible uses, such as, but not limited to, residential, office, industrial and technological, retail, commercial, public, entertainment, or recreation, in a compact urban form.

OPEN SPACE: Land, public or private, unoccupied or predominately unoccupied by buildings or structures, having use for parks, recreation, water management vegetation, agriculture, conservation, protection or preservation of water resources, historic or scenic resources, green space, green belts, natural rivers and streams, forest, wetlands, beaches and dunes, wildlife habitat, preserves, sanctuaries, reserves and refuges, and air and water.

PASSIVE RECREATION: Passive recreation activities are ones which require a minimal amount of physical effort and help greatly in promoting physical and psychological refreshment. Such activities as picnicing, camping, strolling in the park, and water-oriented recreation in the forms of fishing and boating all help to stimulate feelings of relaxation and outdoor enjoyment.

PEAK HOUR TRAFFIC: The highest number of vehicles found to be passing over a section of roadway during 60 consecutive minutes.

PEAK TRAFFIC SEASON: Generally, that quarter of the year (consecutive three months) with the highest average daily traffic volumes exhibited on the area roadway network.

PERCOLATION: The flow of a liquid through a porous material under the influence of gravity or pressure (also infiltration).

GLOSSARY OF "TERMS" (cont'd)

PLANNED DEVELOPMENT: A development that is designed and developed as a cohesive, integrated unit under single ownership or unified control which permits flexibility in building siting, mixture of housing types or land uses, clustering, common functional open space, the sharing of services, facilities and utilities and protection of environmental and natural resources. A Planned Development is synonymous with a Planned Unit Development.

PLANNED DEVELOPMENT DISTRICT: A land use category that is a "floating" performance standard-based district to permit the consideration of developments outside the Urban Service Area, provided that the development must be totally independent of County subsidized facilities and services and shall not result in harmful environmental/natural resource, economic, fiscal, infrastructure/service, or public safety impacts.

RECREATION USE: The occupation, utilization, consumption or enjoyment of a recreation resource, or of a particular part of a recreation resource.

RESOURCE BASED RECREATION AREAS: These are areas that possess a high degree of natural beauty through the land, air and water resources that compose them. These areas generally have a higher level of intrinsic value—meaning those visual and other aesthetic qualities of their natural environment. Examples of resource-based recreation areas are beaches, wetland preserves, and riverfront parks.

RESOURCE PROTECTION AREA: A Resource Protection Area means lands that exhibit soil types, hydrologic and vegetation characteristic of freshwater and salt-water wetlands.

RESOURCE RECOVERY: Various techniques of recovering reuseable or recyclable materials or energy from garbage and trash.

REUSE WATER: Treated wastewater which, as a commodity, is sold to various users for agricultural irrigation, coal slurry pipelines, grounds management (institutional lawns, golf courses) or industrial use.

REVERSE OSMOSIS: A technology for desalinizing water through mechanical pressure.

SERVICE VOLUME: Service volume is the maximum number of vehicles that can pass over a given section of roadway during a specified time period while operating conditions are maintained corresponding to the selected or specified level of service.

SLUDGE: The solids remaining after settling and treating wastewater (also septage).

TRAFFIC ANALYSIS ZONE: A geographical area within the County by which economic, land use, socio-economic and other data is collected and projected. Usually comprised of one or more census tracts with boundaries generally formed by major roadways, municipal jurisdictions and natural barriers.

GLOSSARY OF "TERMS" (cont'd)

TRANSITION ZONE: A Transition Zone means lands that may be seasonally inundated from one to three months as indicated by water marks, do not have depressional soils, and are characterized by a mixture of plant species typical of uplands and wetlands.

UNDEVELOPED BARRIER ISLAND: Undeveloped coastal barrier islands are 1) areas designated by the United States Congress as undeveloped in the Coastal Barrier Resource Act (PL 97-348); 2) other barrier islands, spits, peninsulas or portions thereof that have sparse settlement, no infrastructure for support services, and access by watercraft or aircraft only.

UNIQUE (FARMLANDS): Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has a special combination of soil quality, location, growing season and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops are citrus, fruit and vegetables.

URBAN SERVICES: The requisite services, facilities, capital improvements and infrastructure necessary to support growth and development at levels of urban density and intensity. Urban Services as used in this Plan include, but are not limited to:

- . public sewer and water
- . urban standard streets and roads
- . public transit
- . parks and recreation facilities
- . urban levels of police, fire and emergency services
- . urban surface water management
- . location of schools
- . location of employment, industrial and commercial centers
- . location of institutional, public or administrative facilities,
- . community facilities such as senior citizens centers, libraries and community centers.

URBAN SPRAWL: The uncontrolled, premature or untimely expansion and spreading out of urban levels of density or intensity into outlying non-urban areas.

USER ORIENTED RECREATION AREAS: These are areas where numerous recreational activities can take place and are more or less independent of special natural features for their conduction. Commonly, areas such as these contain ballfields, tennis courts, playgrounds, swimming pools, and the like that are planned and located to help satisfy specific user demand. User oriented recreation areas generally have a greater amount of extrinsic value meaning that recreational values are created through manmade adaptation, alteration, or addition to the natural landscape.

GLOSSARY OF "TERMS" (cont'd)

VACANCY STATUS: Determined for housing units at the time of enumeration. Vacancy status pertains to year-round vacant units. Vacancy status and other characteristics of vacant units are determined by enumerators questioning landlords, owners, neighbors, rental agents, and others.

WATER BASED RECREATION AREA: This is an area that has within its boundaries a body of salt or freshwater, shoreline frontage, or access to a shoreline where water-related facilities such as boat ramps, docks, fishing piers, and beach area for swimming can be located.

WETLAND: A wetland means areas that are inundated by surface or groundwater with frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps and marshes and may include similar areas such as sloughs, wet meadows and natural ponds.

"WILDCAT" DUMPING: Dumping of various kinds of solid waste at locations of opportunity rather than at landfills or legal pick up points.

YEAR ROUND HOUSING UNITS: All occupied units plus vacant units intended for year-round use. Almost all data on housing characteristics are limited to year round units. Vacant units held for seasonal use or migratory labor are excluded because it is difficult to obtain reliable information for them. Counts of the total housing inventory include both year round and seasonal units.

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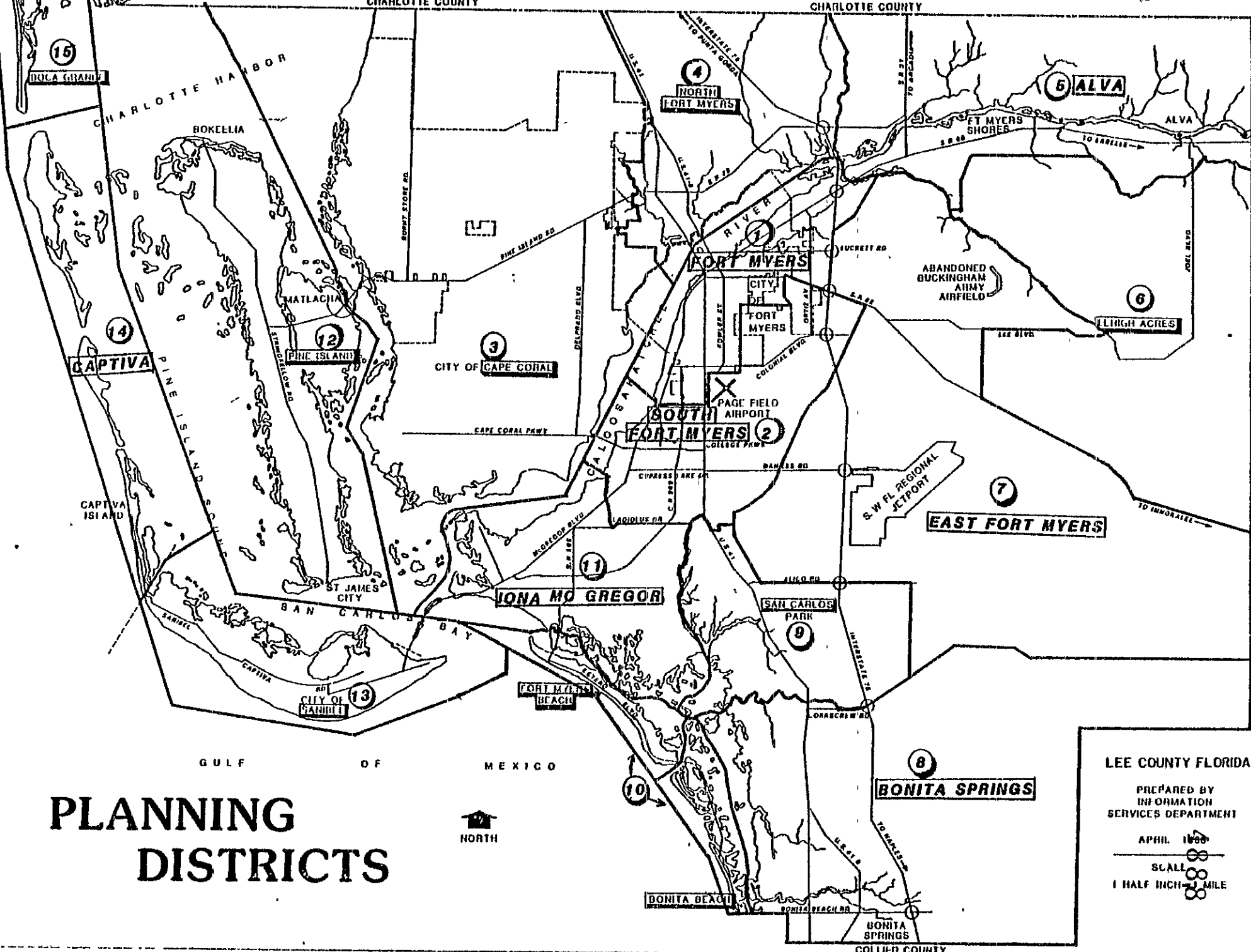
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PLANNING DISTRICTS



LEE COUNTY FLORIDA

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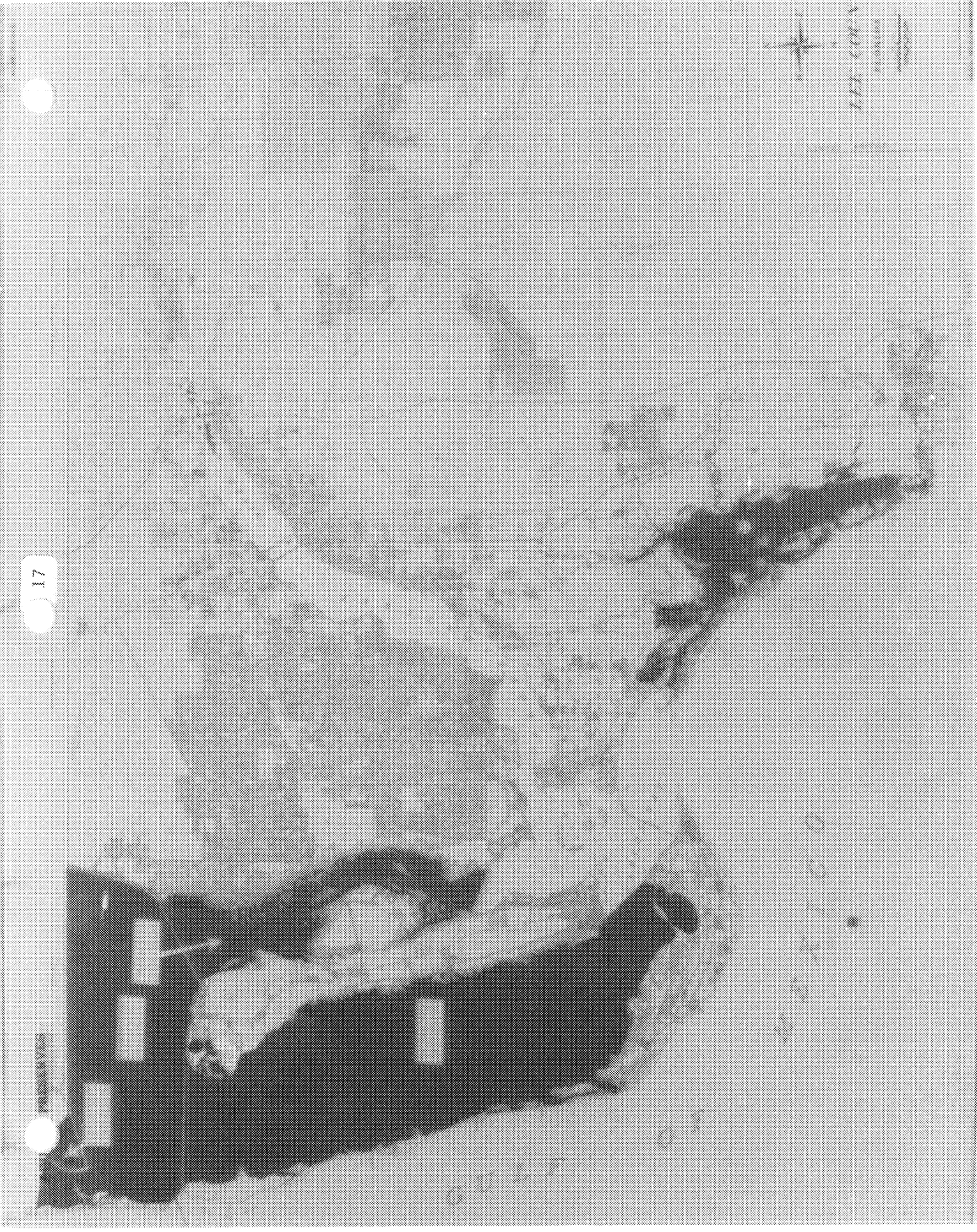
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LEE COUNTY
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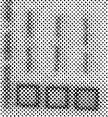
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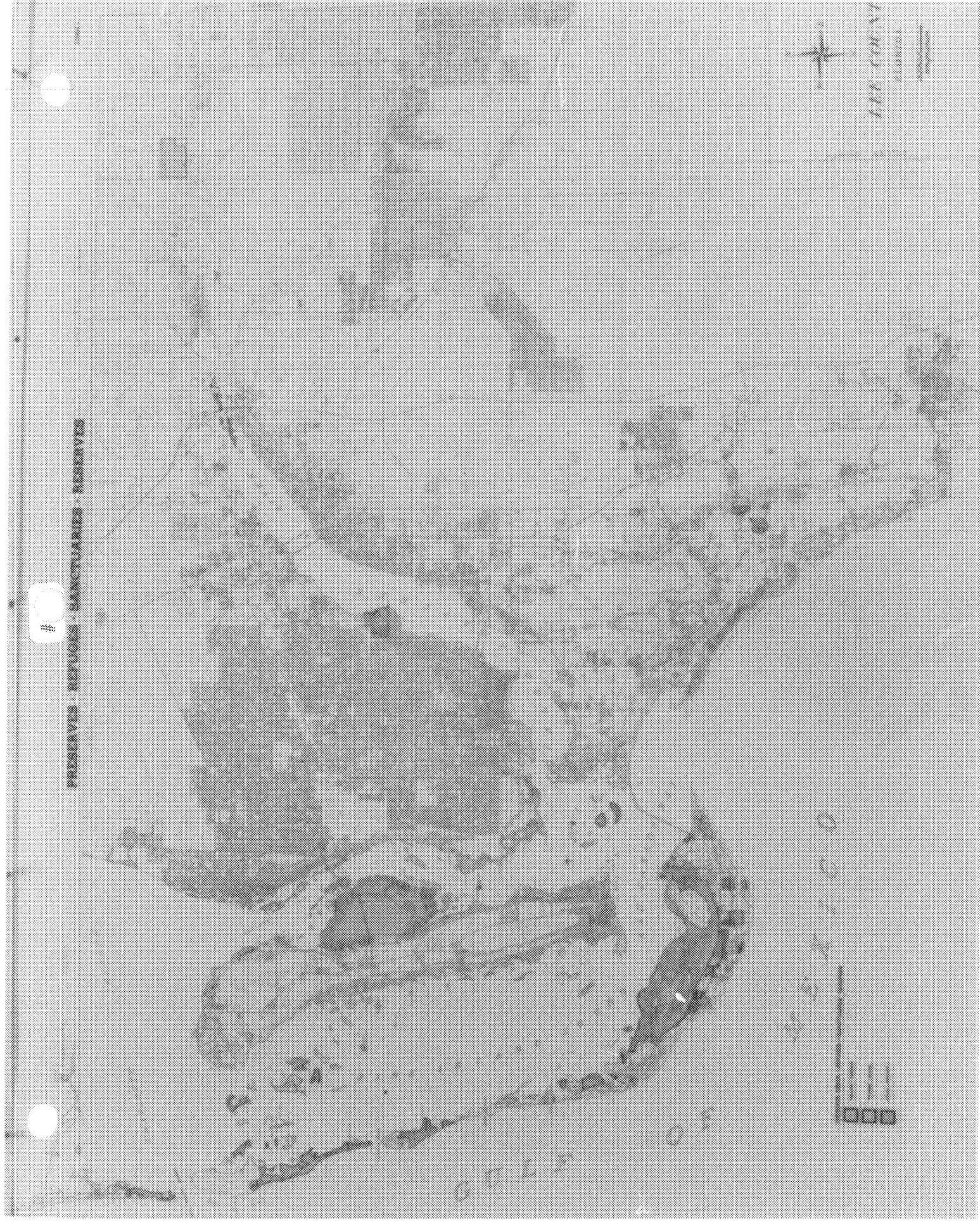
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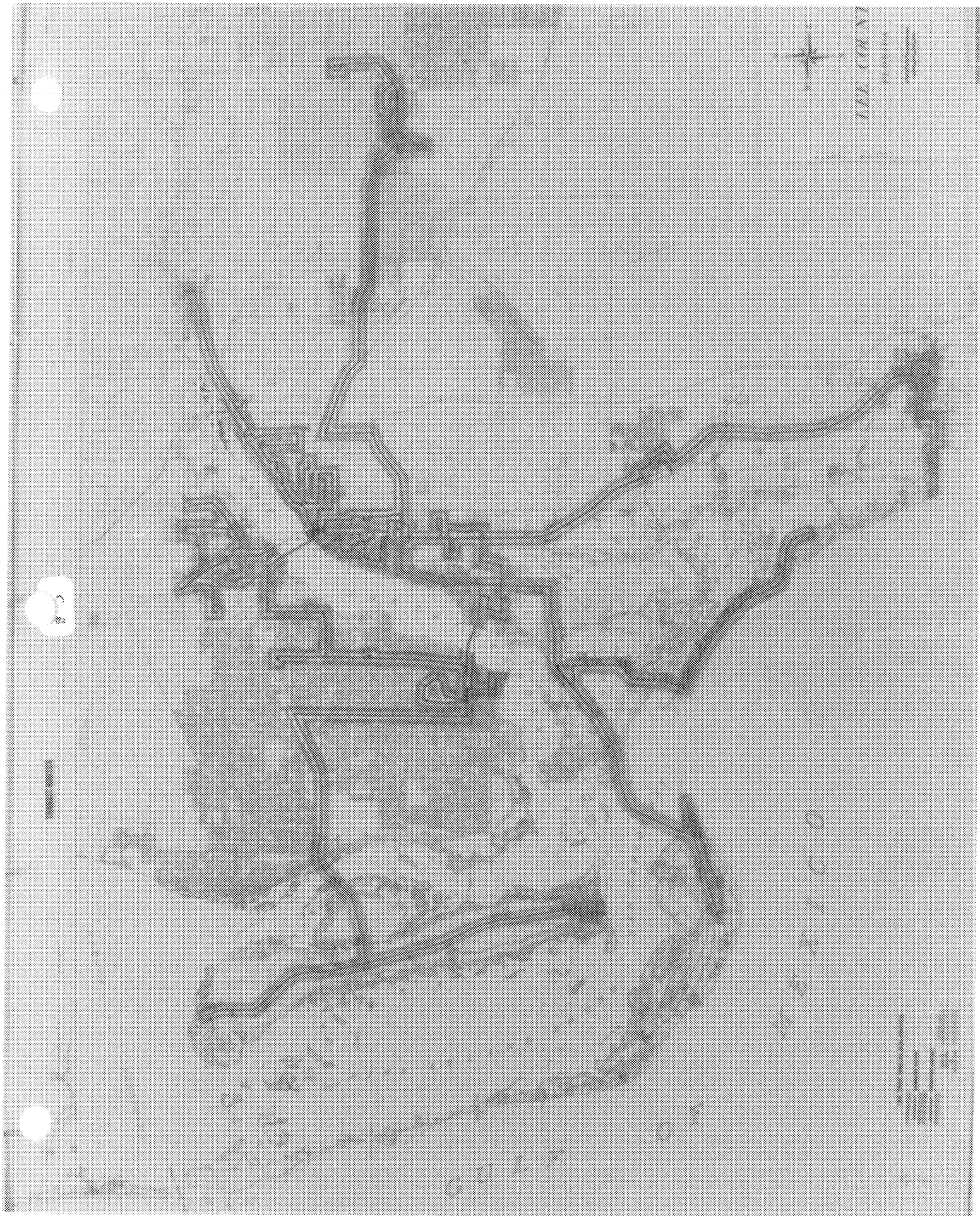
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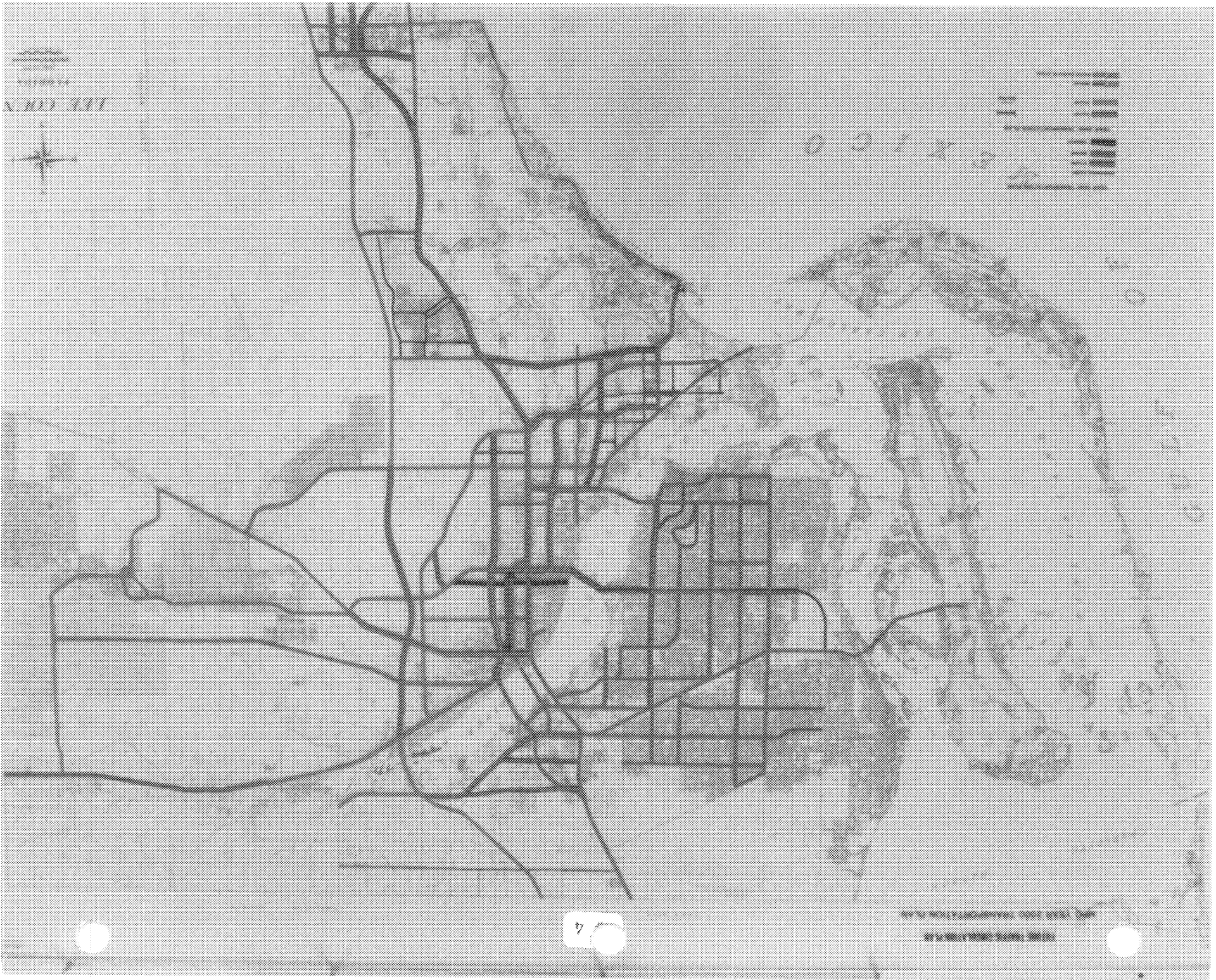
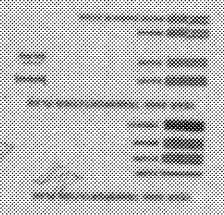
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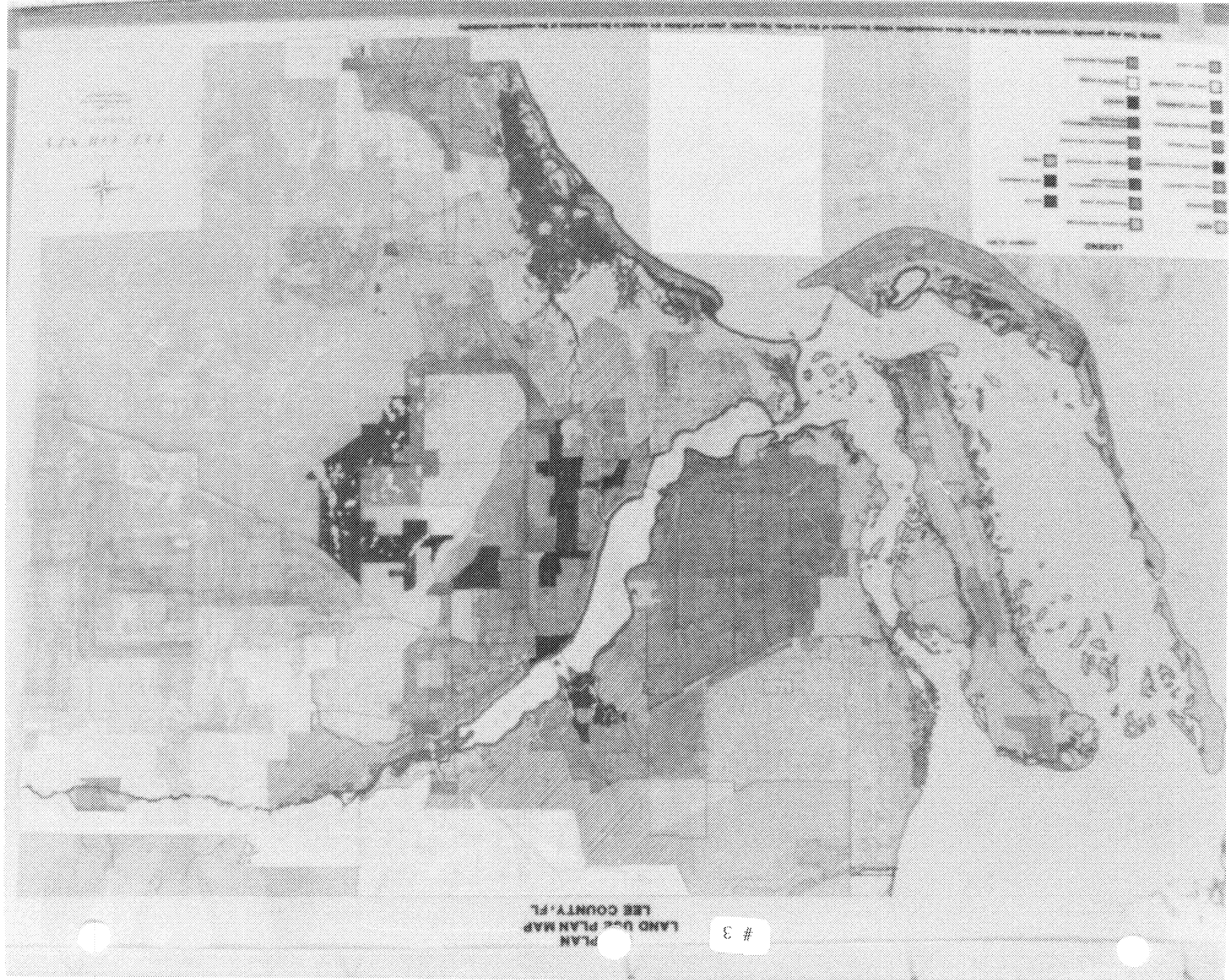
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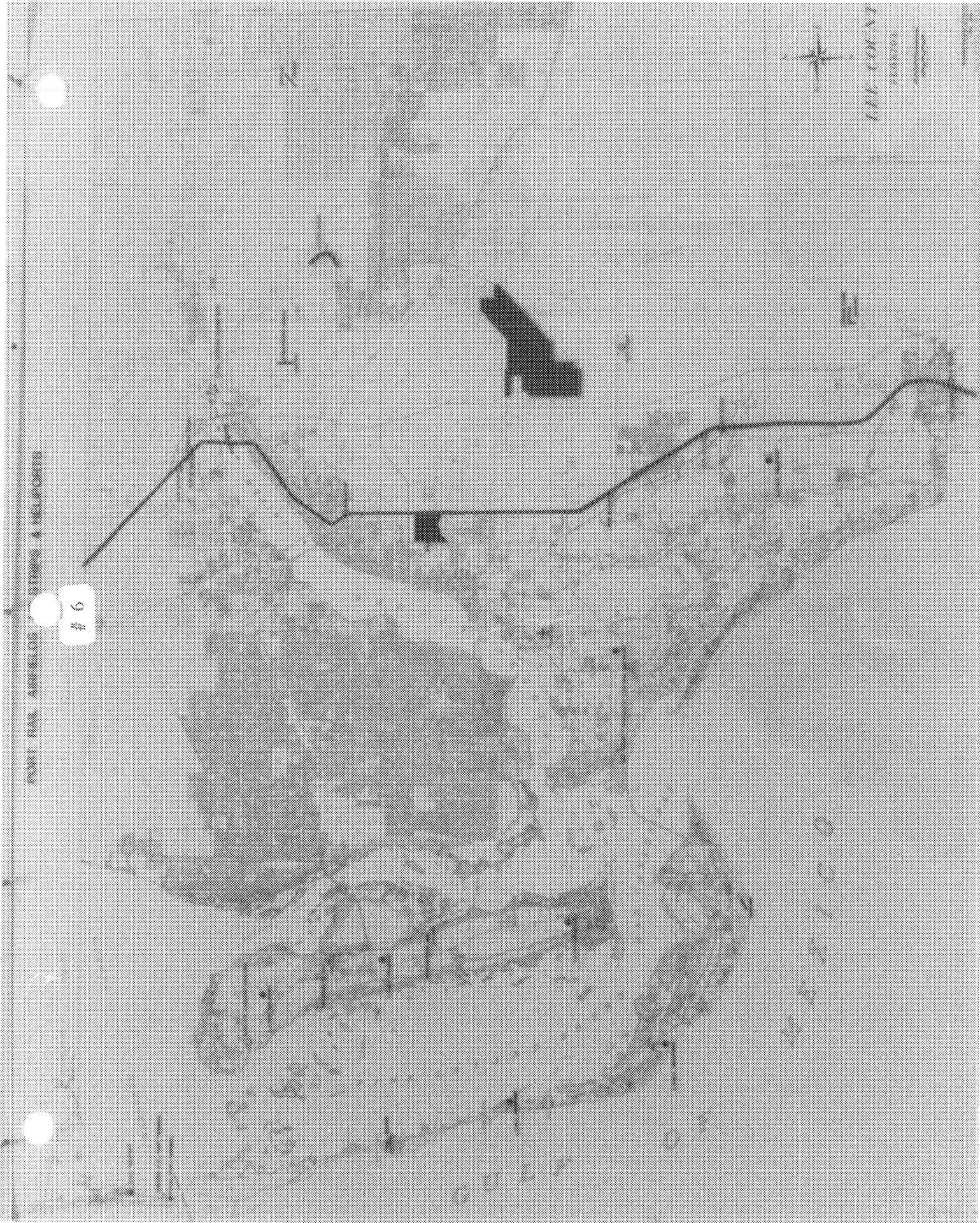


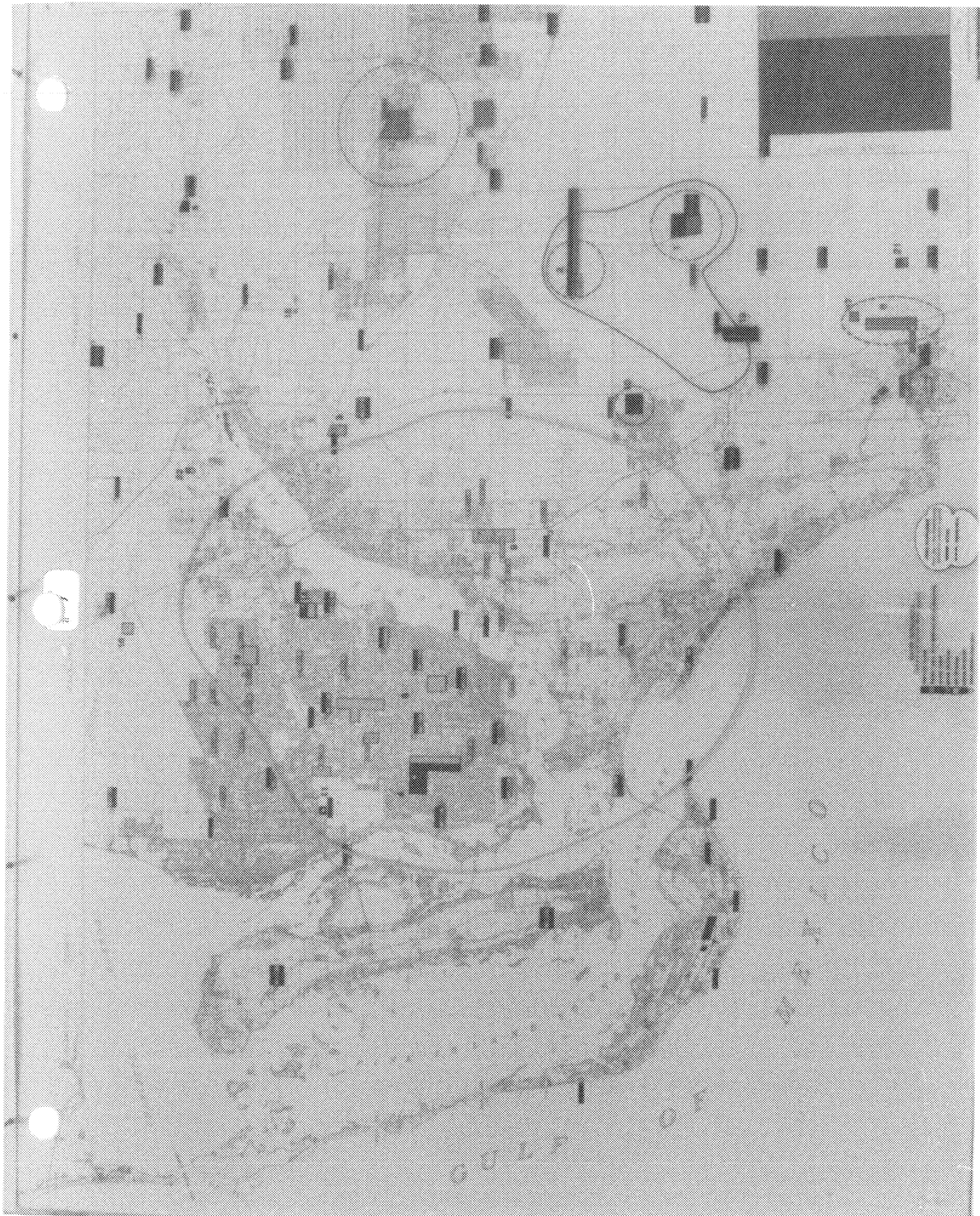
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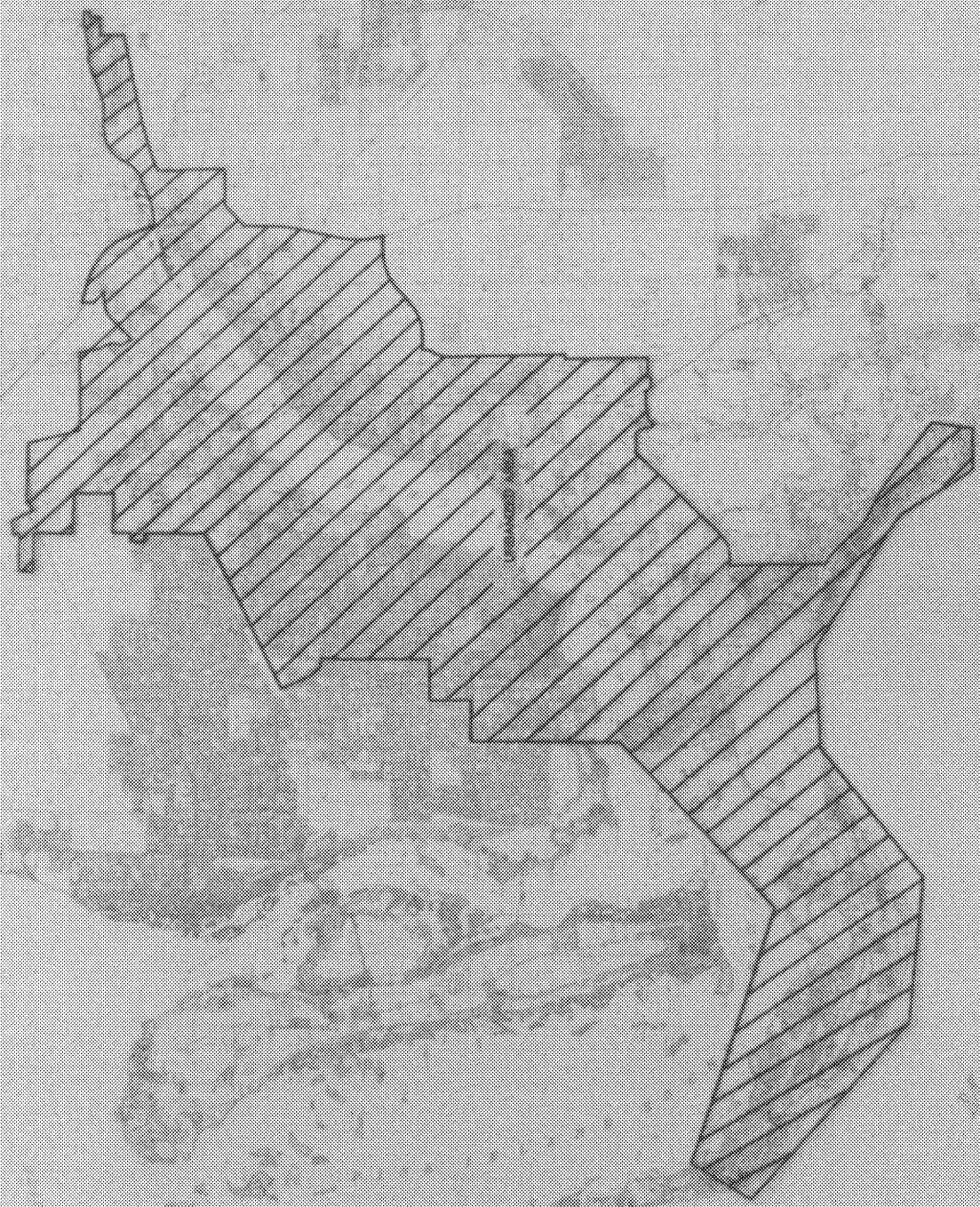
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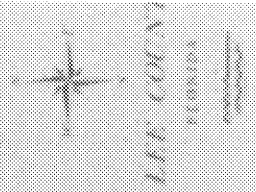




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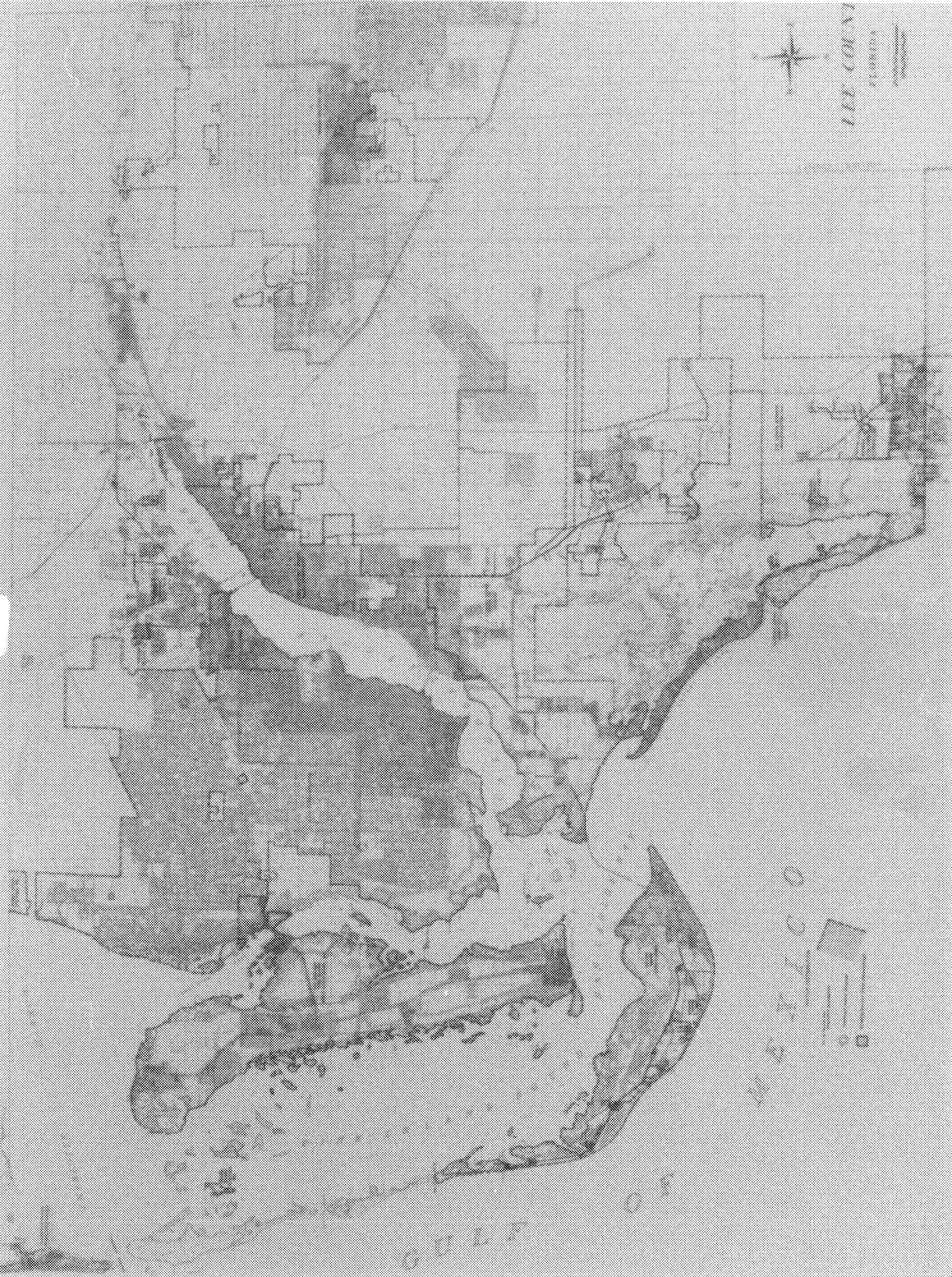
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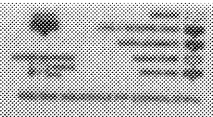
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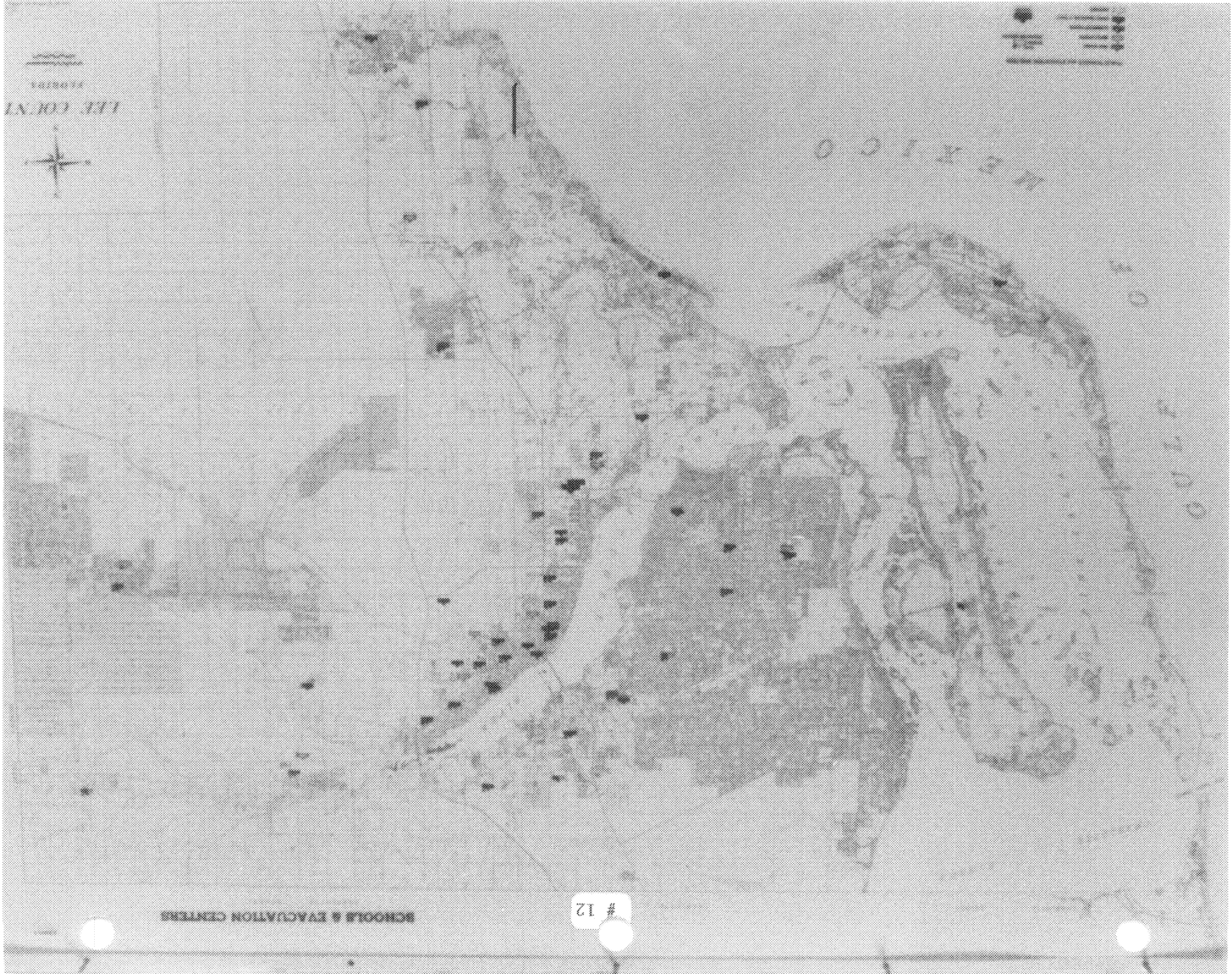
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FLORIDA



SCHOOLS & EVACUATION CENTERS

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LEE COUNTY

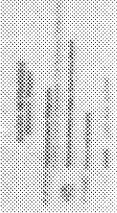
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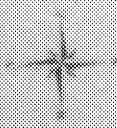


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