# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>1</td>
</tr>
<tr>
<td>Purpose of the Strategic Regional Policy Plan</td>
<td>3</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>5</td>
</tr>
<tr>
<td>Implementation of the Strategic Regional Policy Plan</td>
<td>16</td>
</tr>
<tr>
<td>Introduction to the Region</td>
<td>21</td>
</tr>
<tr>
<td>I. Strategic Regional Subject Areas</td>
<td></td>
</tr>
<tr>
<td>1. The Future of the Region (Vision Statement)</td>
<td></td>
</tr>
<tr>
<td>A. Trends and Conditions</td>
<td>1-1</td>
</tr>
<tr>
<td>B. Goals, Strategies and Policies</td>
<td>1-27</td>
</tr>
<tr>
<td>2. Affordable Housing</td>
<td></td>
</tr>
<tr>
<td>A. Trends and Conditions</td>
<td>2-1</td>
</tr>
<tr>
<td>B. Important Regional Issues</td>
<td>2-14</td>
</tr>
<tr>
<td>C. Significant Regional Resources and Facilities</td>
<td>2-23</td>
</tr>
<tr>
<td>D. Goals, Strategies and Policies</td>
<td>2-24</td>
</tr>
<tr>
<td>3. Economic Development</td>
<td></td>
</tr>
<tr>
<td>A. Trends and Conditions</td>
<td>3-1</td>
</tr>
<tr>
<td>B. Important Regional Issues</td>
<td>3-14</td>
</tr>
<tr>
<td>C. Significant Regional Resources and Facilities</td>
<td>3-30</td>
</tr>
<tr>
<td>D. Goals, Strategies and Policies</td>
<td>3-32</td>
</tr>
<tr>
<td>4. Education</td>
<td></td>
</tr>
<tr>
<td>A. Trends and Conditions</td>
<td>4-1</td>
</tr>
<tr>
<td>B. Important Regional Issues</td>
<td>4-7</td>
</tr>
<tr>
<td>C. Significant Regional Resources and Facilities</td>
<td>4-7</td>
</tr>
<tr>
<td>D. Goals, Strategies and Policies</td>
<td>4-8</td>
</tr>
<tr>
<td>5. Emergency Preparedness</td>
<td></td>
</tr>
<tr>
<td>A. Trends and Conditions</td>
<td>5-1</td>
</tr>
<tr>
<td>B. Important Regional Issues</td>
<td>5-19</td>
</tr>
<tr>
<td>C. Significant Regional Resources and Facilities</td>
<td>5-24</td>
</tr>
<tr>
<td>D. Goals, Strategies and Policies</td>
<td>5-27</td>
</tr>
<tr>
<td>6. Natural Resources of Regional Significance</td>
<td></td>
</tr>
<tr>
<td>A. Trends and Conditions</td>
<td>6-1</td>
</tr>
<tr>
<td>B. Important Regional Issues</td>
<td>6-12</td>
</tr>
<tr>
<td>C. Significant Regional Resources and Facilities</td>
<td>6-31</td>
</tr>
<tr>
<td>D. Goals, Strategies and Policies</td>
<td>6-38</td>
</tr>
</tbody>
</table>
7. Regional Transportation
   A. Trends and Conditions ................................................................. 7-1
   B. Important Regional Issues ........................................................ 7-30
   C. Significant Regional Resources and Facilities .......................... 7-32
   D. Goals, Strategies and Policies .................................................. 7-39

II. Appendices
   A. Coordination Outline ............................................................... A-1
   B. Effects and Costs of Sprawl .................................................... B-1
   C. Regional Cartography .............................................................. C-1
   D. Glossary ................................................................................. D-1
   E. Bibliography ............................................................................ E-1
   F. Exotic Species ......................................................................... F-1
   G. Endangered and Potentially Endangered Species ..................... G-1
   H. Clearance Times ..................................................................... H-1

III. Comments
LIST OF TABLES

Introduction To The Region

Table 1   Population Change in the Treasure Coast Region 1970-1993    23
Table 2   Age of Population                                          24
Table 3   Racial Characteristics                                      24
Table 4   Population - County and Municipal                          25
Table 5   Labor Force and Employment                                 26
Table 6   Annual Unemployment Rate                                    26
Table 7   Income                                                    27
Table 8   Public School Enrollment                                    27

Affordable Housing

Table 2.1  Household Size and the Elderly in the Treasure Coast Region 2-4
Table 2.2  Selected Housing and Household Characteristics            2-5
Table 2.3  Occupancy Status of Occupied Housing Units                 2-6
Table 2.4  Age of Housing Stock                                      2-6
Table 2.5  Selected Housing and Income Characteristics, 1990         2-7
Table 2.6  Income, Housing Value, Rent                               2-8
Table 2.7  Farmworkers and HRS Housing Facilities                    2-18

Economic Development

Table 3.1  Population Composition by Age                             3-6
Table 3.2  Median Age                                                3-6
Table 3.3  Treasure Coast Region, 75+ Age Group Growth               3-6
Table 3.4  Age 65 and Older, Incomes Below Poverty Level             3-8
Table 3.5  Labor Force and Employment                                3-9
Table 3.6  Annual Unemployment Rate                                  3-9
Table 3.7  Major Economic Sectors, 1980, 1992                        3-10
Table 3.8  Income                                                   3-14
Table 3.9  Change in Farmland Acreage 1981-1990                      3-16
Table 3.10 Municipal/County Government Expenditures - Costs Per Capita FY 1979-80 to FY 1992-93 3-23

Education

Table 4.1  Comparison of Public and Private School Enrollment in the Four Counties, Region and State for 1990 and 1993 4-1
**Emergency Preparedness**

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>General Population Comparisons, 1986-1993, by County and Region</td>
<td>5-2</td>
</tr>
<tr>
<td>5.2</td>
<td>1990-1993 Population Growth, Natural Increase, Net Migration, Elderly Residents</td>
<td>5-2</td>
</tr>
<tr>
<td>5.3</td>
<td>Total Housing Units (all types) and Mobile Homes</td>
<td>5-6</td>
</tr>
<tr>
<td>5.4</td>
<td>Shelters, Capacity, Demand and Special Needs</td>
<td>5-7</td>
</tr>
<tr>
<td>5.5</td>
<td>Surges from Hurricane (SLOSH) Storm Surge Heights, Vulnerable Population</td>
<td>5-10</td>
</tr>
<tr>
<td>5.6</td>
<td>Saffir/Simpson Hurricane Intensity Scale</td>
<td>5-10</td>
</tr>
<tr>
<td>5.7</td>
<td>Facilities Reporting Hazardous Chemicals, Extremely Hazardous Substances (EHSs) and Estimated Number of Facilities Subject to Reporting Requirements</td>
<td>5-13</td>
</tr>
<tr>
<td>5.8</td>
<td>Reported Hazardous Materials, Incidents, January-November, 1994</td>
<td>5-13</td>
</tr>
<tr>
<td>5.9</td>
<td>The Ten Most Costly Insured Catastrophes in the United States</td>
<td>5-15</td>
</tr>
</tbody>
</table>

**Natural Resources of Regional Significance**

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Historical Changes in the Amount of Natural Communities in the Treasure Coast Region</td>
<td>6-9</td>
</tr>
</tbody>
</table>

**Regional Transportation**

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>PBIA Passenger Enplanements</td>
<td>7-14</td>
</tr>
<tr>
<td>7.2</td>
<td>PBIA Landed Cargo by Ton</td>
<td>7-14</td>
</tr>
<tr>
<td>7.3</td>
<td>Increase in Seaport Activities by Short Ton, Port of Palm Beach and Port of Fort Pierce</td>
<td>7-14, 7-15</td>
</tr>
</tbody>
</table>
Note: Figures appear on or immediately following the page shown

LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Introduction to the Region</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Florida Planning Council Regions</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>Treasure Coast Region</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td><strong>Future of the Region</strong></td>
<td></td>
</tr>
<tr>
<td>1-1</td>
<td>Historic Buildings</td>
<td>1-8</td>
</tr>
<tr>
<td>1-2</td>
<td>Rural Village</td>
<td>1-9</td>
</tr>
<tr>
<td>1-3</td>
<td>Fellsmere, 1992</td>
<td>1-9</td>
</tr>
<tr>
<td>1-4</td>
<td>North Grade Elementary School, 1926</td>
<td>1-10</td>
</tr>
<tr>
<td>1-5</td>
<td>John Nolen Plan, 1923</td>
<td>1-11</td>
</tr>
<tr>
<td>1-6</td>
<td>Lake Park, 1992</td>
<td>1-11</td>
</tr>
<tr>
<td>1-7</td>
<td>Eastern Palm Beach County, 1994</td>
<td>1-11</td>
</tr>
<tr>
<td>1-8</td>
<td>Land for Sale</td>
<td>1-13</td>
</tr>
<tr>
<td>1-9</td>
<td>Subdivisions, 1994</td>
<td>1-13</td>
</tr>
<tr>
<td>1-10</td>
<td>West Palm Beach, 1993</td>
<td>1-15</td>
</tr>
<tr>
<td>1-11</td>
<td>Coastal Towns</td>
<td>1-22</td>
</tr>
<tr>
<td>1-12</td>
<td>Coastal Infill</td>
<td>1-22</td>
</tr>
<tr>
<td>1-13</td>
<td>New Town</td>
<td>1-23</td>
</tr>
<tr>
<td>1-14</td>
<td>Nature Preserve</td>
<td>1-27</td>
</tr>
<tr>
<td>1-15</td>
<td>New Village</td>
<td>1-27</td>
</tr>
<tr>
<td>1-16</td>
<td>City Center Plan</td>
<td>1-31</td>
</tr>
<tr>
<td>1-17</td>
<td>Towns</td>
<td>1-31</td>
</tr>
<tr>
<td>1-18</td>
<td>Town Center</td>
<td>1-32</td>
</tr>
<tr>
<td>1-19</td>
<td>New Village</td>
<td>1-32</td>
</tr>
<tr>
<td>1-20</td>
<td>Village Center</td>
<td>1-33</td>
</tr>
<tr>
<td>1-21</td>
<td>Boynton Beach</td>
<td>1-33</td>
</tr>
<tr>
<td>1-22</td>
<td>Redevelopment Plan</td>
<td>1-34</td>
</tr>
<tr>
<td>1-23</td>
<td>City Center District</td>
<td>1-39</td>
</tr>
<tr>
<td>1-24</td>
<td>Neighborhoods</td>
<td>1-39</td>
</tr>
<tr>
<td>1-25</td>
<td>Southwest Neighborhood Charrette Proposal</td>
<td>1-40</td>
</tr>
<tr>
<td>1-26</td>
<td>Tri-Rail Station Neighborhood</td>
<td>1-40</td>
</tr>
<tr>
<td>1-27</td>
<td>Hobe Sound</td>
<td>1-42</td>
</tr>
<tr>
<td>1-28</td>
<td>Main Street</td>
<td>1-42</td>
</tr>
<tr>
<td>1-29</td>
<td>City Square</td>
<td>1-42</td>
</tr>
<tr>
<td>1-30</td>
<td>City Square</td>
<td>1-42</td>
</tr>
<tr>
<td>1-31</td>
<td>City Square</td>
<td>1-42</td>
</tr>
<tr>
<td>1-32</td>
<td>Rail District</td>
<td>1-42</td>
</tr>
<tr>
<td>1-33</td>
<td>Twin City Mall Area</td>
<td>1-42</td>
</tr>
<tr>
<td>Figure</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1-34</td>
<td>Twin City Mall Area</td>
<td>1-42</td>
</tr>
<tr>
<td>1-35</td>
<td>Redevelopment Plan Illustrations</td>
<td>1-44</td>
</tr>
<tr>
<td>1-36</td>
<td>Building Types</td>
<td>1-45</td>
</tr>
<tr>
<td>1-37</td>
<td>Building Types</td>
<td>1-45</td>
</tr>
<tr>
<td>1-38</td>
<td>Neighborhood Fabric</td>
<td>1-45</td>
</tr>
<tr>
<td>1-39</td>
<td>Side Yard House</td>
<td>1-45</td>
</tr>
<tr>
<td>1-40</td>
<td>Side Yard House</td>
<td>1-45</td>
</tr>
<tr>
<td>1-41</td>
<td>Building Types</td>
<td>1-45</td>
</tr>
<tr>
<td>1-42</td>
<td>Building Types</td>
<td>1-45</td>
</tr>
</tbody>
</table>

**Economic Development**

<table>
<thead>
<tr>
<th>Figure</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1</td>
<td>Population Change by Percentage</td>
<td>3-5</td>
</tr>
<tr>
<td>3-2</td>
<td>Unemployment Rate 1994-1995</td>
<td>3-16</td>
</tr>
<tr>
<td>3-3</td>
<td>Treasure Coast Region Population Growth and Projections 1930-2015</td>
<td>3-22</td>
</tr>
</tbody>
</table>

**Natural Resources**

<table>
<thead>
<tr>
<th>Figure</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-1</td>
<td>Countryside</td>
<td>6-13</td>
</tr>
<tr>
<td>6-2</td>
<td>Nature Preserve</td>
<td>6-13</td>
</tr>
<tr>
<td>6-3</td>
<td>Towns</td>
<td>6-13</td>
</tr>
<tr>
<td>6-4</td>
<td>Regional Wildlife Corridors</td>
<td>6-24</td>
</tr>
</tbody>
</table>

**Transportation**

<table>
<thead>
<tr>
<th>Figure</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-1</td>
<td>Transportation and its Relationship to the Overall Regional System</td>
<td>7-1</td>
</tr>
<tr>
<td>7-2</td>
<td>Development Pattern Trends</td>
<td>7-6</td>
</tr>
<tr>
<td>7-3</td>
<td>Transportation Network</td>
<td>7-10</td>
</tr>
<tr>
<td>7-4</td>
<td>Land Use</td>
<td>7-10</td>
</tr>
<tr>
<td>7-5</td>
<td>Tri-Rail Ridership</td>
<td>7-11</td>
</tr>
<tr>
<td>7-6</td>
<td>Design Guidelines for Transit</td>
<td>7-12</td>
</tr>
<tr>
<td>7-7</td>
<td>Transit Oriented Development</td>
<td>7-12</td>
</tr>
<tr>
<td>7-8</td>
<td>Theoretical Neighborhood Around Station</td>
<td>7-14</td>
</tr>
<tr>
<td>7-9</td>
<td>Theoretical Neighborhood Around Station</td>
<td>7-14</td>
</tr>
<tr>
<td>7-10</td>
<td>Theoretical Neighborhood Around Station</td>
<td>7-14</td>
</tr>
<tr>
<td>7-11</td>
<td>Traditional Way Of Addressing Transportation Problems And Its Results</td>
<td>7-16</td>
</tr>
<tr>
<td>7-12</td>
<td>Parking Placement</td>
<td>7-17</td>
</tr>
<tr>
<td>7-13</td>
<td>Parking Alternatives</td>
<td>7-18</td>
</tr>
<tr>
<td>7-14</td>
<td>City Boulevard</td>
<td>7-21</td>
</tr>
<tr>
<td>7-15</td>
<td>High Traffic Boulevard</td>
<td>7-21</td>
</tr>
<tr>
<td>7-16</td>
<td>Main Street</td>
<td>7-21</td>
</tr>
<tr>
<td>7-17</td>
<td>Ocean Avenue Bridge</td>
<td>7-21</td>
</tr>
<tr>
<td>7-18</td>
<td>Lake and Lucerne Avenues</td>
<td>7-21</td>
</tr>
<tr>
<td>7-19</td>
<td>Midway Road</td>
<td>7-21</td>
</tr>
<tr>
<td>7-20</td>
<td>Neighborhood Streets</td>
<td>7-21</td>
</tr>
<tr>
<td>7-21</td>
<td>Major Neighborhood Street</td>
<td>7-21</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>7-22</td>
<td>Proposed Bike Path</td>
<td>7-21</td>
</tr>
<tr>
<td>7-23</td>
<td>Roundabouts</td>
<td>7-22</td>
</tr>
<tr>
<td>7-24</td>
<td>Alternative Bike Lanes</td>
<td>7-25</td>
</tr>
<tr>
<td>7-25</td>
<td>Hobe Sound</td>
<td>7-27</td>
</tr>
</tbody>
</table>
FOREWORD

TREASURE COAST REGION
FOREWORD

According to Chapter 186, Florida Statutes, and Chapter 27E-5, Florida Administrative Code, the Strategic Regional Policy Plan (SRPP) for the Treasure Coast Region shall be a long range guide for the physical, economic, and social development of the Region which identifies regional goals and policies. The SRPP is not merely a plan for the regional planning council, it is a plan for the Region and all those who are active participants in shaping its future.

The SRPP is intended to be a direction-setting document. Its goals and policies will be implemented only to the extent that financial resources are available from local revenue sources, legislative appropriations, grants or appropriations of any other public or private entities. The plan does not create regulatory authority or authorize the adoption of agency rules, criteria, or standards not otherwise authorized by law.

The goals and policies contained in the SRPP shall be reasonably applied where they are economically and environmentally feasible, shall not be contrary to the public interest, and shall be consistent with the protection of private property rights. The plan shall be construed and applied as a whole, and no specific goal or policy in the plan shall be construed or applied in isolation from the other goals and policies in the plan.

The SRPP is not intended to be a mandate or dictum to local governments, special districts and citizens in the Region. It is an instruction manual to be used for guidance in building a more healthy and sustainable Region.

The SRPP is not intended to be a stagnant document. The regional planning process and development of the Plan should continue after adoption. Over time the Council may want to amend the Plan to incorporate meaningful regional guidance found in new legislation and in the findings and recommendations of other regional planning activities and programs currently in progress (e.g., revisions to the State Comprehensive Plan, long range MPO plans, the Sustainable South Florida effort, the Florida Greenways program, etc.). The initiative to amend the Plan may come from the Council itself or from citizens who come before Council with their aspirations and ideas to improve the Plan. Regional planning councils are not limited to a twice-a-year window for plan amendments and can revise the Plan at any time.

As it pertains to the development of local government comprehensive plans, land development regulations, and local development orders subject to regional planning council consistency review, it is recognized that some ideas suggested in the SRPP are applicable and can be furthered in varying degrees in certain areas of the Region and some cannot. When applying the Plan, this is a determination that must be continually made by the consortium of local government representatives and citizens appointed by the Governor which make up the Treasure Coast Regional Planning Council.
The SRPP acknowledges and the Council recognizes that the Region is large and diverse and that thoughtful consideration of local differences need to be fully considered when making policy decisions. It is also recognized because of local differences and preferences that there may be other approaches for implementing and furthering regional goals and policies other than those specifically suggested in the Plan. The SRPP will require the Council to use good judgment in applying the Plan and to maintain a receptiveness to new or different ideas which may not be specifically suggested in the Plan, but which will keep the Region on course towards a healthier and sustainable future.

Lastly, all goals, policies, and strategies that utilize directive verbs such as should, shall, and will should not be interpreted to override the decision-making and fiscal prerogatives of local government. All references to the “Region” in goals, policies, strategies and background analyses should be taken to mean the Region as a whole. It is implicit that all regional goals, strategies, and policies suggesting shortened review processes, preapproval, concurrency relief, or other incentives suggested to encourage preferred forms and patterns of development will be carried out within the limits of State law.
PURPOSE
PURPOSE OF THE STRATEGIC REGIONAL POLICY PLAN

Pursuant to Rule 27E-5.003, Florida Administrative Code, the purposes of the strategic regional policy plan include:

1. To implement and further the goals and policies of the State Comprehensive Plan with regard to the strategic regional subject areas and other components addressed in the plan.

2. To provide long range policy guidance for the physical, economic, and social development of a region.

3. To establish public policy for the resolution of disputes over regional problems, needs, or opportunities through the establishment of regional goals and policies and to provide a regional basis and perspective for the coordination of governmental activities and the resolution of problems, needs, and opportunities that are of regional concern or scope.

4. To establish goals and policies, in addition to other criteria established by law, that provide a basis for the review of developments of regional impact, regional review of federally assisted projects, and other activities of the regional planning council. In addition, the plan may recommend specific locations or activities in which a project, that due to its character or location, should be a development of regional impact within the region. Standards included in strategic regional policy plans shall be used for planning purposes only and not for permitting or regulatory purposes. A regional planning council shall not adopt a planning standard that differs materially from a planning standard adopted by rule by a state or regional agency, when such rule expressly states the planning standard is intended to preempt action by the regional planning council.

5. To establish goals and policies to assist the state and the council in the determination of consistency of local comprehensive plans with strategic regional policy plans and the state comprehensive plan. Strategic regional policy plans shall serve as a basis to review the resources and facilities found in local government comprehensive plans.

6. To establish land development and transportation goals and policies in a manner that fosters region-wide transportation systems.

7. To serve as a basis for decisions by the regional planning council.

8. To guide the administration of federal, state, regional, and local agency programs and activities in a region to the extent provided for by law.
9. To identify significant regional resources and facilities, infrastructure needs, or other problems, needs, or opportunities of importance to the region.

10. To identify natural resources of regional significance and promote the protection of those resources.

11. To set forth economic development goals and policies that promote regional economic growth and improvement.

12. To set forth goals and policies that address the affordable housing and emergency preparedness problems and needs of the region.

The State Comprehensive Plan and the Strategic Regional Policy Plan do not create regulatory authority or authorize the adoption of agency rules, criteria or standards not otherwise authorized by law.
Strategic Regional Policy Plan
For the Treasure Coast Region

Executive Summary

Prepared by Treasure Coast Regional Planning Council
December 20, 1995
EXECUTIVE SUMMARY

Overview

The Treasure Coast Region is a region of abundant resources and a highly desirable quality life. Located on the southeast coast of Florida, the Region includes 49 municipalities contained within the four counties of Indian River, Martin, Palm Beach and St. Lucie. The Region is blessed with a growing economy. Many of its urban centers such as the cities of Delray Beach, Lake Worth and West Palm Beach are staging an economic comeback after periods of decline. The Region is also well positioned to share in the benefits of national growth and prosperity.

The Region has a population of nearly 1.4 million residents and has experienced explosive growth over the last three decades. The Region’s resources and quality of life are sensitive to the impacts of unplanned growth and development, however, and there are increasing signs that those resources and quality of life are at risk. There is evidence in many parts of the Region of a deterioration in the quality of life: traffic congestion, loss of agricultural lands, polluted waterways, loss of wetlands and forests, deteriorating urban centers, fiscal stress and other impacts of unplanned growth. Since the 1960’s hundreds of square miles of native and agricultural lands have been converted to suburban development, a pattern of development that does not allow the efficient provision of public facilities and services, and is devoid of the sense of place that once defined the character of the Region.

In terms of the stage and extent of development, the four counties of the Region are quite different. Palm Beach County is largely suburbanized across a broad area and is larger in land area than Indian River, Martin, and St. Lucie counties combined. However, all four share a similar pattern of development and adopted land use planning strategies. While this is not cause for immediate concern, it is pointed out in recognition that: 1) the potential for the continuation of sprawling patterns of development in the three northern counties is high; and 2) there are several good opportunities to address this potential, unlike in southern and central Palm Beach County, where most of these opportunities have been foreclosed.

While the four counties of the Region are different in some respects, they have a number of similarities. Historically each of the four counties which make up the Region had an economy based primarily on agriculture and secondarily on tourism. Today, although agriculture remains an important industry, the Region has taken on far more urban characteristics. In each county, urban growth occurred in coastal areas and expanded westward. In each county, urban expansion has displaced former agricultural lands. Agricultural activities have moved to the west, often into ecologically sensitive wetland habitats which dominate areas west of the coastal ridge.
Geographically, each county is located adjacent to the Atlantic Ocean and, therefore, all counties have problems and opportunities related to their coastal orientation. Common problems include: the threat of hurricanes, beach erosion, pressure to develop high hazard coastal areas, saltwater intrusion, potable water supply limitations, and rapid urbanization of coastal areas. Common opportunities include: the attractive power of beaches, estuaries and rivers for recreational fishing and boating, seaports for commerce, and a long-term potential for growth.

Environmentally the problems faced by each county within the Region are very similar. Demographic characteristics are similar, but not exact. In all counties within the Region, the seasonal aspects of tourism and agriculture create problems. In all of the counties, provision of services to a rapidly growing elderly population is a concern.

The Treasure Coast Region is expected to experience continued growth in population into the next century. Currently the Region’s population is growing by 100 new permanent residents per day. Many of these individuals and families moving into the Region come for employment reasons; others intend for the Region to be their home during retirement years.

The attractive power of Florida and the Treasure Coast Region provides residents an opportunity to achieve and maintain a higher quality of life than could occur in the absence of growth potential. The Region also has a need and opportunity to address growth management problems and thereby realize the high quality of life that can come with well-planned growth. Whether the opportunity is realized or put to good advantage, however, depends upon how and to what extent growth leads to sustainable patterns and forms of development and diverse neighborhoods and communities.

The Plan

The Strategic Regional Policy Plan (SRPP) for the Treasure Coast Region provides a long range guide for the physical, economic, and social development of the Region. Unlike the regional plan it is intended to replace, the SRPP is proposed not as a regulatory tool, but as a direction-setting document. Its focus is on comprehensively dealing with the large scale components or systems which make up the Region. Its goal is to keep the Region on course towards a more healthy and sustainable future. The SRPP is not merely a plan for the regional planning council, it is a plan for the Region and all those who are active participants in shaping its future.

The SRPP contains the following seven elements:

- Future of the Region (Vision)
- Affordable Housing
- Economic Development
- Education
- Emergency Preparedness
- Natural Resources of Regional Significance
Regional Transportation

Another major component of the SRPP is maps which depict natural resources of regional significance. There are six maps in all which provide an excellent overview of the Region’s network of remaining natural systems as they relate to developing urban and agricultural areas.

Future of the Region

The Future of the Region or “vision” element of the Plan comprehensively deals with improving the large-scale structure or pattern of the Region’s physical, economic and social environment: the growth and formation of towns, cities, and villages, the maintenance of the natural environment and countryside, the layout of regional roads, the relationship between work and households, the formation of suitable public institutions for a neighborhood and community, and the kinds of public space required to support these institutions. The Future of the Region element describes preferred forms and patterns of development that are considered the most effective means for fulfilling the “vision”.

The Future of the Region element contains several illustrations depicting examples of preferred forms and patterns of development. The inclusion of graphic examples are both necessary and beneficial to articulate the “vision” and to provide examples of what is meant by certain terms and policies expressed in the Plan. The examples are intended to be illustrative and informative. They are not intended to be site specific. The illustrations are meant to show instructive examples of concepts which may be effective in addressing current problems and fulfilling the “vision”. They are not meant to be inclusive of all examples which represent good planning.

Briefly stated the SRPP describes the “vision” for the future of the Region as follows:

*Future growth should follow a preferred development form or pattern. Preferred development should address the following regional issues:*

1. Preservation of the natural environment and countryside.
2. Revitalization of existing urban areas.
3. The creation of new towns.

*Future development should not sprawl because it is expensive and it degrades the Region’s quality of life.*
Preferred development concepts will be implemented by regional strategies which:

1. state the preferred form of development.
2. suggest incentives to encourage and foster preferred forms of development.

In addition, implementation will depend on county and municipal strategies which:

1. delineate where new development should or should not occur.
2. apply and expand the preferred form of development concepts.
3. encourage redevelopment and revitalization.
4. devise public investment programs favoring development of preferred forms and patterns of development.
5. send constructive economic signals to investors.

The Future of the Region element criticizes recent forms and patterns of development for being too homogeneous and disconnected to support the organization of larger more efficient and sustainable patterns of development (i.e., towns, cities, and villages). At the same time the Plan recognizes that these larger development patterns are not homogeneous and will continue to evolve in response to market forces prevailing in the Treasure Coast Region. To increase the chances for acceptance and implementation, the Plan is designed to recognize this need for diversity and, at the same time, respond to current market forces.

For example, a mixture of densities, architectural styles, building types, and lifestyle choices can and are anticipated in the Plan, no different from those mixes and choices which can be found in long-standing, established towns in the Region and across the country. More specifically, an enclave or district within a town could include more specialized or less diverse areas (e.g. workplaces, “high-rent” resort and country club districts, etc.) that may not fit well within the fabric or boundary of a traditional neighborhood. The Plan as written anticipates that such “districts” will develop. At the same time the Plan recognizes an overabundance of such districts, isolated and poorly connected to each other and to existing neighborhoods, creates a negative pattern of development which is defined by State law and the Plan as “sprawl”.

The Plan proposes the “vision” to address the nature of sprawl and its side effects by advancing ways to: 1) increase the diversity and self-containment of neighborhoods; 2) strengthen the connections and ties between districts and neighborhoods, and then; 3) link them together to establish more efficient larger patterns of development (i.e., towns, cities, and villages).

The “vision” as stated also reflects the particular challenges and opportunities the Region must respond to and exploit in order to accommodate high levels of growth while maintaining a high quality of life. The “vision” suggests as the Region matures, planning efforts should focus on: 1) expanding successful development ideas; 2) portraying a preferred form of development which should include the fundamental concepts that set the course towards excellence in development; and 3) establishing a framework of
planning and fiscal incentives to make it easier for beneficial and preferred forms of
development to happen.

The Plan recognizes that the “vision” can never be implemented or built overnight. It
will take patient piecemeal growth, designed in such a way that every planning decision
sanctioned by local government is always helping to create or generate preferred patterns
and forms of development on a small and large scale. This should, slowly and surely
over the years, result in a Region that contains preferred patterns of development. The
end result is intended to achieve a more sustainable future for the Treasure Coast Region.

The remaining six elements of the SRPP are intended to focus specifically on the
individual pieces or “building blocks” of the regional structure that when applied
together will make a Region that conforms to the “vision”. In developing the other six
elements of the SRPP, several key trends and goals emerged:

**Affordable Housing**

The owner and rental housing stock is not as affordable as it used to be. The market
price of housing, especially rental housing, is generally rising faster than incomes. On
the growth management and planning side, sprawling low density patterns of
development and excessive regulations have contributed to increased housing prices.
Government land use, transportation and regulatory policy affects the market price of
housing and the ability of households to afford housing. The percentage of household
income devoted to housing is rising steadily. Farmworker and other special needs
housing issues need to be better addressed. Each of the four counties, and several cities,
now have programs to help address affordable housing issues.

**Fundamental Regional Housing Goals and Strategies**

- Create a planning/regulatory climate conducive to the production of affordable
  housing.
- Provide a range of housing types and affordabilities in proximity to employment and
  services.
- Stabilize and revitalize existing neighborhoods.
- Encourage development and redevelopment which results in the creation of towns,
  cities, and villages and not isolated patterns of development.
- Provide adequate housing opportunities for agricultural workers and others with
  special needs.

**Economic Development**

In-migration and tourism remain key components of the Region’s economy. Fueled by
the tourism and retiree population, the retail trade and service sectors continue to
represent the largest economic sectors of the Region’s economy. Tourism is primarily
seasonal in nature, therefore, much of the Region’s employment is seasonal, resulting in
high seasonal unemployment rates. Because of its reliance on agriculture, construction
and service industries for jobs, unemployment in the Region is generally higher than the State and nation during periods of recession. An over-dependence on construction and a weak industrial base often prolongs the effects of recession, as was experienced in the 1970s and the early 1990s.

A more diversified employment base is needed to support the Region’s large labor force and to stabilize the job market and the Region’s economy. A diversified economy is better able to withstand recession, provide a steady increase in the number and types of jobs available and increase personal income. It also lessens the seasonality and spatial clustering of economic activity, lowers and stabilizes the unemployment rate, and provides for a stabilized tax base.

Opportunities for bringing more diversity to the Region’s economy are expanding globally and competition for these opportunities is increasing. There is recognition that just as misdirected growth management policy has the potential to retard economic development and encourage inefficient patterns of development, growth management done properly has the potential to increase development efficiencies and expand economic development opportunities.

**Fundamental Regional Economic Development Goals and Strategies**

- Redevelop and revitalize the Region’s distressed economic centers and communities.
- Extend and expand the Region’s agricultural and tourist season.
- Promote patterns of development which allow public services to be provided more cost effectively.
- Improve transportation and education linkages throughout the Region.
- Diversify the year-round economy and establish an economic climate that will allow the Region to complete effectively in the global economy.

**Education**

There is a vital link between education and the economy. The students of today are the human capital of tomorrow. The Region’s educational system and student performance can be improved.

The siting of school facilities has a powerful effect on patterns of development. The coordination, planning, and decision-making process between local governments and school districts affecting school siting can be improved. The bridge between the concurrent provision of schools and development needs to be gapped.

Neighborhood as well as quality schools are both key components of a successful educational system. Neighborhood schools play a key role in local governments efforts to stabilize areas and promote a sense of community. Low-density, sprawling patterns of development are reducing opportunities for establishing neighborhood schools, increasing the length and frequency of student bus trips, increasing the costs of providing
schools and student transportation, and reducing the school systems ability to maintain desegregation in student assignment.

**Fundamental Regional Education Goals and Strategies**

- Increased student performance and educational programs that respond to the needs of the Region.
- Improved planning, coordination and cooperation between local governments and school districts.
- Increased development and redevelopment of neighborhood schools.
- Encourage patterns of development that will create new towns and neighborhoods and foster redevelopment of existing urban areas.

**Emergency Preparedness**

The Region is becoming increasingly vulnerable to the effects of hurricane and tropical storm events and man-made disasters. Coastal population is increasing. New developments are currently approved for areas most vulnerable to the effects of major storm events. Growth management policy is spreading development further into the countryside reducing the ability of the land to store stormwater.

Development is currently approved without sufficient mitigation of impacts on existing infrastructure and emergency preparedness planning. Emergency management planning is not fully integrated into the community planning process. Current patterns of development unnecessarily increase the difficulty of post disaster recovery efforts.

Adequate emergency shelter capacity for the Region’s vulnerable population has not been attained. Post-disaster recovery and pre-disaster mitigation strategies have not been fully developed within the Region. Local emergency preparedness agencies are underfunded and their effectiveness is often impacted by multiple or redundant levels of organizational control.

**Fundamental Regional Emergency Preparedness Goals and Strategies**

- Direct development away from areas most vulnerable to the effects of natural and manmade disasters.
- Better utilize land use, transportation and community planning processes to address vulnerability issues.
- Provide sufficient shelter space for residents of areas susceptible to dangerous flooding and wind affects of hurricanes and other storms.
- Improve the integration of community planning between local governments and emergency management agencies.
- Improve the ability of emergency preparedness entities to achieve rapid post disaster recovery efforts.
Natural Resources of Regional Significance

The quality of life enjoyed in the Region depends on the conservation of the natural environment and the countryside. While much of the Region’s countryside is still recognizable as such, as much as 80 percent of the Region’s natural environment has been altered or lost. The main threat to remaining natural systems and the countryside is not growth, but sprawling suburban growth which due to its inefficient development form has required ever-increasing acreage growth to deliver an acceptable quality of life. Therefore, the solution to environmental problems is found in part in the form of development.

The rapid destruction of natural lands and the countryside inspired many regulations. Unfortunately, they tended to address individual parcels instead of complete systems. Efforts are suggested in the SRPP and are currently occurring throughout the State to encourage a more systemwide approach to protect complete natural systems and to address the inadequacies of existing land use planning and development strategies to protect complete natural systems.

The quality of life and the Region’s environment and economy also depends on the proper and prudent management of its water resources. Sectors competing for limited water resources within the Region include: 1) natural systems; 2) agriculture; and 3) domestic, municipal, and industrial users. Future increases in needs of these users will cause competition to increase between all sectors for existing water supplies, and will create a need for more efficient use of water.

The stakes involved in water management are huge: Florida Bay, the Everglades, Lake Okeechobee, the Region’s estuaries and wildlife, and the health of the Region’s economy. Efforts are ongoing at the local, regional, state and national level to address water management options for the Region. The SRPP suggests several goals and strategies to support these efforts intended to overcome the Region’s water management and resource problems.

**Fundamental Regional Natural Resources Goals and Strategies**

- Preserve and manage complete natural systems as a network of greenways and wildlife corridors connecting natural preserves.
- Manage the Region’s water resources to provide for all recognized needs on a sustainable basis.
- Promote patterns of development which do not sprawl and are compatible with the protection and maintenance of natural systems and nature preserves.
- Preserve and manage native ecosystems in order to maintain viable populations of remaining native plant and animal species.

**Regional Transportation**

The Region’s current transportation system is almost exclusively geared towards providing mobility via the private automobile. On several counts this is a very
An expensive strategy to sustain, pollutes the environment, prematurely limits growth, is increasingly dangerous, and ignores mobility needs for a large segment of the population who are classified as transportation disadvantaged.

The Region’s transportation system should be one that integrates alternate modes of travel into one balanced system that supports community goals, enhances urban life, increases mobility and provides for the safe and efficient movement of goods and people. Any approach to achieve these multiple objectives must include an analysis of the way we use our land, the manner in which we choose to travel, and the institutional and financial arrangements we have developed to meet our travel needs. In short, these objectives can only be achieved through a better integration of transportation and land use planning.

The trend of decreasing densities, rapidly expanding urban land area, and increased settlement in the undeveloped countryside away from coastal cities is likely to continue the increase in private automobile use in the future. These following trends and conditions also point to increased traffic congestion, energy use, air pollution, and automobile dependency in the future, with all the negative costs and impacts.

The Region’s transportation problem in the long run cannot be solved solely by supplying more and more roadway capacity by building more and bigger roads. This approach will only aggravate the problem and is unaffordable as a solution. The SRPP suggests transportation problems must be addressed from the demand side. This will require a greater reliance on, and an understanding of, the relationship between land use and transportation planning as well as a reversal of personal behavior and travel trends and conditions that are at the root of the problem.

**Fundamental Regional Transportation Goals and Strategies**

- Develop a balanced and integrated transportation system.
- Encourage patterns and forms of development that maximize public transportation alternatives, minimize the use of the Region’s collector and arterial roadway network, and reduce the total amount of private vehicle miles traveled.
- Increased mobility for the transportation disadvantaged.
- Develop a complete and coordinated transportation/land use planning process.
Mapping of Natural Resources of Regional Significance

The SRPP contains several maps in an attempt to map what are considered to be “natural resources of regional significance”. The State (Rule 27E-5.001(7) FAC) defines these as follows:

A resource or facility that due to its uniqueness, function, benefit, service delivery area, or importance is identified as being of regional concern.

A resource or facility that requires the participation or involvement of two or more governmental entities to ensure proper and efficient management.

A resource or facility that meets either criteria above and is defined to be of state or regional concern or importance in state or federal laws or rules of state or regional agencies adopted pursuant to Chapter 120, Florida Statutes.

The Rule goes on to require that natural resources identified as regionally significant in the Plan must be mapped.

In response to this charge, six maps have been created for the Plan. These include maps depicting:

- Planning and Resource Management Areas
- Natural Systems
- Surface Water Resources
- Upland Natural Communities
- Endangered and Potentially Endangered Species
- Coastal and Marine Resources

These maps provide an excellent regional planning tool and identify regional opportunities for better land use planning. These maps are to be used for regional planning purposes only. These maps are to be used only in conjunction with the SRPP.

Information regarding specifics on how they will be used and implemented are addressed in the Forward, Purpose of the Plan, and Implementation of the Plan sections which precede this section. Additional detail on implementation and the process for development of the Plan is contained in Appendix A, Coordination Outline.

Lastly, the SRPP is not intended to be a stagnant document. The regional planning process and development of the Plan should continue after adoption. Over time the Council may want to amend the Plan to incorporate meaningful regional guidance found in new legislation and in the findings and recommendations of other regional planning activities and programs currently in progress (e.g., revisions to the State Comprehensive Plan, long range MPO plans, the Sustainable South Florida effort, the Florida Greenways program, etc.). The initiative to amend the Plan may come from the Council itself or from citizens who come before Council with their aspirations and ideas to improve the
Plan. Regional planning councils are not limited to a twice-a-year window for plan amendments and can revise the Plan at any time.
IMPLEMENTATION
OF THE SRPP
IMPLEMENTATION OF THE STRATEGIC REGIONAL POLICY PLAN

Unlike local government comprehensive plans, the Strategic Regional Policy Plan (SRPP) is not implemented through a set of land development regulations and accompanied by a capital improvements program in order to meet the objectives established in the Plan. Instead the Regional Plan must be implemented as a result of Council’s program activities and through the consensus of local governments in the Region.

Although regional planning councils are primarily advisory in nature, the successful implementation of the Regional Plan can occur in a number of ways. Perhaps most importantly, the SRPP will be implemented as a result of successful implementation of local government comprehensive plans, which by Statute (Chapter 163) must be consistent with the Regional Plan. The Regional Plan is also implemented as a result of Council’s program activities, some of which are listed below. A more detailed summary is provided in Appendix A, the Coordination Outline.

- Development of Regional Impact (DRI) review process
- Intergovernmental coordination and review process (ICR)
- Dispute resolution process
- Economic development planning
- Preparation of special planning and development studies
- Serving on task forces and committees involved in regional planning issues
- Emergency preparedness planning
- Regional transportation planning

Finally, the Plan is implemented through the activities of other organizations and agencies, both public and private, if they consider the Regional Plan to present good solutions to identified problems.

The most significant element of the SRPP is the Future of the Region or “vision” section. The key to how successful the Region is in implementing the goals, policies, and strategies, and addressing regional issues contained in the six other elements of the Plan, is directly related to the extent local governments are willing and able to implement the concepts suggested by the “vision”.
Briefly stated, the “vision” for the future of the Region is as follows:

*Future growth should follow a preferred development form or pattern. Preferred development should address the following regional issues:*

1. Preservation of the natural environment and countryside
2. Revitalization of existing urban areas.
3. The creation of new towns.

The “vision” as stated reflects the particular challenges and opportunities the Region must respond to and exploit in order to accommodate high levels of growth while maintaining a high quality of life. The “vision” suggests that the principal focus of planning efforts should be on the form and location of future growth. The “vision” reflects the notion that: 1) as the Region matures planning efforts should start to differentiate between acceptable and excellent; and 2) the Region is ready to set standards that reach beyond the mere provision of basic services and propose the creation of complete and sustainable communities. Finally, the “vision” fulfills a mandated purpose for regional plans—“to provide long range policy guidance for the physical, economic, and social development of a region” (Rule 27E-5003(2) F.A.C.).

The Future of the Region element contains several illustrations depicting examples of preferred forms and patterns of development. The inclusion of graphic examples are both necessary and beneficial to articulate the “vision” and to provide examples of what is meant by certain terms and policies expressed in the Plan. The examples are intended to be illustrative and informative. They are not intended to be site specific. The illustrations are meant to show instructive examples of concepts which may be the most effective means to address current problems and fulfill the “vision”. They are not meant to be inclusive of all examples which represent good planning.

The Future of the Region element criticizes recent forms and patterns of development for being too homogeneous and disconnected to support the organization of larger, more efficient and sustainable patterns of development (i.e., towns, cities, and villages). At the same time the Plan recognizes that these larger development patterns are not homogeneous and will continue to evolve in response to market forces prevailing in the Treasure Coast Region. To increase the chances for acceptance and implementation, the Plan is designed to recognize this need for diversity and, at the same time, respond to current market forces.

For example, a mixture of densities, architectural styles, building types, and lifestyle choices can and are allowed to occur under the Plan, no different from those mixes and choices which can be found in long-standing, established towns in the Region and across the country. More specifically, an enclave or district within a town certainly could include more specialized or less diverse areas (e.g. workplaces, “high-rent” resort and country club districts, etc.) that may not fit well within the fabric or boundary of a traditional neighborhood. The Plan as written anticipates such “districts” will develop. At the same time the Plan recognizes an overabundance of such districts, isolated and
poorly connected to each other and to existing neighborhoods, creates a negative pattern of development which is defined by State law and the Plan as “sprawl”.

The Plan proposes the “vision” to address the nature of sprawl and its side effects by advancing ways to: 1) increase the diversity and self-containment of neighborhoods; 2) strengthen the connections and ties between districts and neighborhoods, and then; 3) link them together to establish more efficient larger patterns of development (i.e., towns, cities, and villages). The end result is intended to achieve a more sustainable future for the Treasure Coast Region.

The Plan recognizes that the “vision” can never be implemented or built overnight. It will take patient piecemeal growth, designed in such a way that every planning decision sanctioned by local government is always helping to create or generate preferred patterns and forms of development on a small and large scale. This should, slowly and surely over the years, result in a Region that contains preferred patterns of development.

The SRPP goes on to chart general strategies that, if deemed desirable by individual counties and municipalities, will be implemented at the local level. Implementation may require changes in local development regulations and some amendments to comprehensive plans, depending on the specific conditions and needs of each local government. Most often, such changes will be minor, as many of the ideas included in the Plan are found in local planning documents.

Perhaps the two most powerful changes in policy direction that local and State government can make to help implement the “vision” are: 1) amend development regulations to allow and encourage preferred forms of development occur; and 2) direct and focus public infrastructure projects and dollars to encourage, assist, and support efforts to plan and construct preferred forms of development. Unless positive changes are made in these areas the “vision” will not be implemented. Some possible changes along these lines could be:

1. **Consolidation and simplification of land development regulations.** Current regulations tend to be extremely lengthy and their combined effect is difficult to predict. Such characteristics make development a cumbersome and expensive process. Certain land development regulations prohibit building in ways necessary to accomplish preferred development forms. The key regulations address street hierarchy and width, setbacks, mixing of different land uses, ancillary uses, parking quantity and locational requirements, and maximum building lot sizes. Currently the regulations invariably favor and encourage sprawling patterns of development and discourage the creation of new towns, cities, and villages. In some instances, current subdivision regulations can even interfere with getting conventional forms of financing for building compact, mixed-use projects. Future regulations should be positive and constructive. Instead of detailing each prohibited activity, they should explain in simple terms what types and form of development are preferable and encouraged.
2. **Revision of future land use maps to better reflect each municipal “vision” of the future, within the context of the regional goals.** The future land use map should become the principal planning tool, because it provides the most direct and understandable method to portray the future form of a municipality.

3. **Encouraging a constructive and proactive site plan and building review process.** The review of projects has the most direct impact on the form of development. Municipalities should make planning and design suggestions that can help implement the preferred form of development at the scale of each parcel.

4. **Preparation of infrastructure plans that support preferred forms of development.** Unless infrastructure is focused towards appropriate locations and is designed to support and facilitate preferred development forms, it will be difficult to carry out many of the concepts included in the SRPP. Therefore, local governments should make plans to locate roads, water and sewer lines, public buildings and the like in places that encourage the formation of cities, towns and villages composed of neighborhoods and districts.

5. **Local governments should prepare and adopt their own visions.** Local governments should determine particular areas of emphasis and prepare their own “visions” of the future but should always address planning problems in a comprehensive way. For example, if the rapid growth is a principal issue, a new approach toward the preservation of the countryside based on natural systems must be complemented by clear policies about the preferred form of development. If urban form and infrastructure are given inadequate emphasis in the development process, little advantage would be gained from the application of desirable countryside policies. When plans shift from a regulatory mode to a proactive approach, their successful implementation depends on a complete application of the “vision.”

6. **Local governments should identify areas and opportunities for the implementation of preferred forms of development.** This should be done as part of the articulation of a vision for the local government. At a minimum, these areas and/or opportunities should include: (1) areas in need of redevelopment such as the historic downtown or central business districts or communities; (2) property or areas which because of their location, character or magnitude are of sufficient size and/or proximity to existing development that the preferred form of development would avoid the continuation of a sprawl pattern of development; and (3) areas in suburban locations that would benefit by inserting or retrofitting with preferred development forms or concepts. The SRPP includes goals, policies and strategies encouraging local governments to identify areas or opportunities appropriate for the implementation of the preferred form of development.

If these changes in planning and growth management ideals are to be implemented at the local level the regional planning council recognizes it must help. It will provide technical assistance. If municipalities do not have appropriate staff or budget resources to prepare
the planning tools needed to implement the “vision,” they may choose to request assistance from Council staff. Every effort will be made to accommodate such requests.

The SRPP and the Council recognize the Region is large and diverse and that local differences need to be thoughtfully considered when making policy decisions. It is also recognized that there may be other approaches for implementing and furthering regional goals and policies other than those specifically suggested in the Plan because of local differences and preferences. Successful implementation of the SRPP will require the Council to use good judgment in applying the Plan and to maintain a receptiveness to new or different ideas, that while not specifically suggested in the Plan, will keep the Region on course towards the “vision” and a healthy and sustainable future.
INTRODUCTION TO THE TREASURE COAST REGION
INTRODUCTION TO THE REGION

The Treasure Coast is one of Florida's 11 Planning Regions (Figure 1). It is one of the smallest regions in the State in area (approximately 3,600 square miles), but is fourth largest in population (1994 population estimate - 1.3 million). Located along the southeastern coast, the Region contains four of the State's 67 counties: Indian River, Martin, Palm Beach and St. Lucie (Figure 2). The Region extends over 100 miles from north to south, but has a width from east to west of only 25-50 miles.

Natural Environment

The Region has land within a number of physiographic provinces. The most significant components of the Region are:

1) The Atlantic Coast and Lagoon system - The Region has approximately 100 miles of Atlantic Coast, which turns to the northwest at about the mid-point of the Region so that the coast at the northern boundary of the Region lies approximately 25 miles further to the west than it does in most of Palm Beach County. Except for the southern part of Palm Beach County, the Region has a coastal barrier island system. The Region's barrier island coastline consists entirely of a sandy beach, approximately 25 percent of which is in public ownership. The Indian River Lagoon, the Region’s only designated estuary of national significance, lies west of the barrier island from the northern boundary of the Region, to Jupiter Inlet. Another significant feature of the Region’s lagoon system is Lake Worth, which stretches from the shores of North Palm Beach to Ocean Ridge in Palm Beach County. Immediately to the west of the lagoon system lies a coastal ridge, which probably represents Florida's coastline in the geologic past.

2) The Eastern Valley - Occupying much of the interior of the northern three counties, this Valley is actually a vast, flat, marshy area drained by the St. John’s, St. Lucie, and Loxahatchee Rivers; and

3) The Everglades - much of southern and western Palm Beach County is part of the vast Everglades system.

Much of the natural land conditions, both uplands and wetlands, have been extensively modified for urban and agricultural development. Major changes in hydrologic conditions have occurred as a result of these modifications.

The Region has a subtropical climate characterized by hot, wet summers and warm, dry winters. Temperature variations in the Region are minor in the summer months, but winter temperatures are several degrees warmer in the
Figure 1
FLORIDA PLANNING COUNCIL REGIONS
southern portion of the Region. Rainfall, 75 percent of which occurs in the months of May to October, is also higher in the south than the north, especially in interior Palm Beach County where it averages nearly 10 inches higher than in more northern and coastal areas of the Region.

Shallow aquifers supply most of the potable and non-agricultural irrigation needs of the Region. The highest quality and quantity of shallow aquifer water is found in southern Palm Beach County. Surface water sources and the Floridan aquifer supply most of the agricultural irrigation water. This aquifer, found at depths of 200-1,000 feet in the Region, is being utilized increasingly as a potable water source as other resources are depleted, despite the relatively poor quality water which it provides.

**Land Use**

Approximately 2/3 of the original native habitat found in the Region has been removed, and the land modified by drainage and grading activities. The coastal areas have been the location of most of the urban development of the Region. Nearly 20 percent of the Region's land area is utilized for urban land uses. Agricultural land areas are dominant in the Region, occupying approximately 45 percent of the Region's land area. The Region is the most important one in the State for citrus production, and contains several unique agricultural areas such as the Glades (sugar cane) and the Agricultural Reserve (winter vegetables), both in Palm Beach County. Of the remaining 35 percent of the Region's land area, approximately 20 percent is in wetlands.

As a result of various State, federal, regional and municipal government land purchase, management and conservation programs, approximately 500,000 acres of parks, wildlife and water management areas and aquatic preserves occur in the Treasure Coast Region. This represents 22 percent of the Region's total land and water area. These lands and waters serve as representatives of natural upland, wetland and aquatic ecosystems offering various levels of public access. Major areas include: the J.W. Corbett Wildlife Management Area (57,892 acres), the Loxahatchee National Wildlife Refuge or Conservation Area #1 (145,000 acres), and Jonathan Dickinson State Park (11,383 acres). Each county in the Region has a land acquisition and preservation program for lands containing native habitat. In most cases, these lands have endangered or rare species.

The Florida Department of Environmental Protection has designated manatee sanctuary areas in all four counties. These areas are primarily located adjacent to warm water outfalls of three power generation plants and along portions of the Intracoastal Waterway located within the cities of Fort Pierce, Riviera Beach and Vero Beach.

The Region has five designated aquatic preserves. Three are segments of the Indian River Lagoon and the other two are the North Fork of the St. Lucie River.
Aquatic Preserve and the Loxahatchee River-Lake Worth Creek Aquatic Preserve. These preserves contain critically important aquatic resources, including seagrasses and mangroves.

**Population**

The estimated population for the Treasure Coast Region as of April 1, 1994, was over 1.3 million (BEBR 1995). Population growth in the Treasure Coast Region has been dramatic. The population has increased by half a million people since 1980, and the Region is expected to reach a population of almost 2 million people by the year 2015.

**TABLE 1**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River</td>
<td>35,992</td>
<td>59,896</td>
<td>90,208</td>
<td>97,415</td>
<td>190</td>
</tr>
<tr>
<td>Martin</td>
<td>28,035</td>
<td>64,014</td>
<td>100,900</td>
<td>110,227</td>
<td>192</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>348,993</td>
<td>576,758</td>
<td>863,518</td>
<td>937,190</td>
<td>465</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>50,836</td>
<td>87,182</td>
<td>150,171</td>
<td>166,803</td>
<td>285</td>
</tr>
<tr>
<td>REGION</td>
<td>463,856</td>
<td>787,850</td>
<td>1,204,797</td>
<td>1,311,635</td>
<td>357</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau and Bureau of Economic and Business Research (BEBR)

Palm Beach is by far the largest County in population; containing approximately 70 percent of the Region’s population. The dynamic growth of the northern three counties is responsible for Palm Beach’s decreasing share of the total population of the Region, however.

The vast majority of the population growth of the Region (94% from 1980 to 1990) is as a result of new people moving into the Region. In the last decade, the Region has averaged 36,000 new residents per year (3,000 per month or 100 per day!). The majority of these new residents move to Palm Beach County, but the other three counties in the Region have also become significant destinations.

The Region's population is very aged, when compared to the State and the Nation. The median age is especially high in Martin and Indian River Counties, reflecting the proportionally large number of elderly immigrants. The proportion of the population over 65 and over 80 years of age is also much higher in the Region than in the State as a whole.
TABLE 2
Age of Population

<table>
<thead>
<tr>
<th></th>
<th>Median Age - 1990</th>
<th>% of Population over 65 Years 1990</th>
<th>% of Population over 80 Years 1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River</td>
<td>44.0</td>
<td>27.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Martin</td>
<td>44.5</td>
<td>27.4</td>
<td>5.2</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>39.9</td>
<td>24.3</td>
<td>5.5</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>37.9</td>
<td>21.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Region</td>
<td>-</td>
<td>24.4</td>
<td>5.1</td>
</tr>
<tr>
<td>State of Florida</td>
<td>36.4</td>
<td>18.5</td>
<td>4.0</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>32.8</td>
<td>12.5</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau

Racially, population changes in the Region have been similar to those in the State over the past ten years, although there are some modest differences. Both the State and the Region have experienced a significant increase in the Hispanic population, and a slight decrease in the proportion of the black population. The State as a whole has also seen a decrease in the proportion of the white population; however the Region has experienced an increase in the proportion of the population which is white (see Table 3).

TABLE 3
Racial Characteristics

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>% White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian River</td>
<td>85.3</td>
<td>80.3</td>
</tr>
<tr>
<td>Martin</td>
<td>90.4</td>
<td>85.4</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>84.5</td>
<td>79.5</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>77.0</td>
<td>72.0</td>
</tr>
<tr>
<td>REGION</td>
<td>84.2</td>
<td>80.2</td>
</tr>
<tr>
<td>State</td>
<td>84.0</td>
<td>79.0</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau

Communities

The Treasure Coast Region consists of 53 municipalities, including the four counties. A majority of the municipalities (37) are in Palm Beach County. In
1990, local governments ranged in size from West Palm Beach (population 67,644) to the Town of Orchid (population 10). However, the unincorporated areas contained a larger population than any single municipality for all four counties. By 1993, the City of Port St. Lucie was larger than the unincorporated population of St. Lucie County, but in the other three counties, the unincorporated population remained much larger than any single municipal population.

The largest cities in each County are the traditional centers of county government (Vero Beach, Stuart, West Palm Beach) except for St. Lucie County, where the relatively new City of Port St. Lucie (1993 population - 65,722) has outgrown the traditional government center of Fort Pierce (36,909).

TABLE 4
Population - County and Municipal

<table>
<thead>
<tr>
<th>County</th>
<th>Total 1990 Population</th>
<th>Pop. in Unincorporated Area</th>
<th>% in Unincorporated Area</th>
<th>Largest City</th>
<th>Number of Municipalities including County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River</td>
<td>90,208</td>
<td>58,186</td>
<td>64.5%</td>
<td>Vero Beach</td>
<td>6</td>
</tr>
<tr>
<td>Martin</td>
<td>100,900</td>
<td>86,309</td>
<td>85.5%</td>
<td>Stuart</td>
<td>5</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>863,518</td>
<td>406,210</td>
<td>47.0%</td>
<td>West Palm Bch</td>
<td>38</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>150,171</td>
<td>56,891</td>
<td>37.9%</td>
<td>Port St. Lucie</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau and TCRPC Staff

The major population center of the Region is the heavy urbanized coastal area of Palm Beach County from Riviera Beach (27,308) in the north to Boca Raton (64,818) in the south; including the central City of West Palm Beach (68,006), as well as Lake Worth (28,327), Boynton Beach (48,428) and Delray Beach (48,644). Although this older coastal area remains foremost, a great deal of the recent population growth has occurred to the west of coastal cities in unincorporated areas and in relatively new local jurisdictions such as Greenacres (22,385), Royal Palm Beach (16,546), Palm Beach Gardens (28,635), and Jupiter (27,291) in Palm Beach County; Port St. Lucie (65,772) in St. Lucie County; and Sebastian (12,154) in Indian River County. Over half of the population of the Region lived in unincorporated areas in 1990, compared to 34 percent in 1970.
Economy

EMPLOYMENT

In 1993, the Region’s labor force consisted of 591,635 persons, approximately 46 percent of the total population. This compares with 49 percent for the State.

<table>
<thead>
<tr>
<th>TABLE 5  Labor Force and Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor Force</td>
</tr>
<tr>
<td>Employed</td>
</tr>
<tr>
<td>Unemployed</td>
</tr>
<tr>
<td>FLORIDA</td>
</tr>
<tr>
<td>Labor Force</td>
</tr>
<tr>
<td>Employed</td>
</tr>
<tr>
<td>Unemployed</td>
</tr>
</tbody>
</table>

Source: Regional Profile, 1979, Regional Description, 1985, TCRPC; BEBR 1994
Table: TCRPC

In 1993 the Region had an unemployment rate of over nine percent while the State’s was seven percent. St. Lucie County had the highest rate of unemployment (12.4 percent) and Palm Beach County had the lowest (8.6 percent).

<table>
<thead>
<tr>
<th>TABLE 6 Annual Unemployment Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>1970</td>
</tr>
<tr>
<td>1975</td>
</tr>
<tr>
<td>1980</td>
</tr>
<tr>
<td>1985</td>
</tr>
<tr>
<td>1990</td>
</tr>
<tr>
<td>1993</td>
</tr>
</tbody>
</table>

Source: Regional Profile, TCRPC, 1979 County Perspective, BEBR, 1994
Table: TCRPC

The employment sectors that accounted for the greatest number of jobs in the Region in 1992 were Services (35 percent) and Retail Trade (20 percent). Together they represent almost 55 percent of the jobs in the Region. The sector with the next greatest number of jobs was Government (11 percent). Manufacturing accounts for 6.5 percent and Construction accounts for 6.3 percent of the total jobs in the Region in 1992.

INCOME

The Region’s per capita personal income has consistently increased at a greater rate than that of the United States. In 1980, the Region’s per capita personal income was 131 percent of the United States per capita income and by 1992 it was 135 percent.
Both the Region’s household and per capita incomes increased between 1980 and 1990. In 1980, the Region’s median per capita income was $12,488 and was 125 percent of the State’s. By 1990, these figures increased to $27,201 and 137 percent respectively. The Region’s median household income in 1980 was $15,425 and was 105 percent of the State’s. By 1990, the Region’s median household income increased to $28,961, maintaining 105 percent of the State’s.

In 1989, nearly 7 percent of the Region’s families and 10 percent of the population were below the poverty level. This compared with 9 percent and 13 percent respectively for the State. All of the counties within the Region had a smaller percentage of their populations below the poverty level than the State.

### Table 7: Income

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IRC</td>
<td>$11,295</td>
<td>$25,028</td>
<td>122%</td>
<td>$15,101</td>
<td>$28,961</td>
<td>92%</td>
</tr>
<tr>
<td>MC</td>
<td>12,585</td>
<td>28,443</td>
<td>126%</td>
<td>15,749</td>
<td>31,760</td>
<td>101%</td>
</tr>
<tr>
<td>PBC</td>
<td>12,820</td>
<td>29,103</td>
<td>130%</td>
<td>16,665</td>
<td>32,548</td>
<td>95%</td>
</tr>
<tr>
<td>SLC</td>
<td>9,275</td>
<td>14,959</td>
<td>61%</td>
<td>13,878</td>
<td>27,771</td>
<td>98%</td>
</tr>
<tr>
<td>REGI</td>
<td>12,488</td>
<td>27,201</td>
<td>117%</td>
<td>15,425</td>
<td>28,968</td>
<td>88%</td>
</tr>
<tr>
<td>FL</td>
<td>9,929</td>
<td>19,797</td>
<td>99%</td>
<td>14,675</td>
<td>27,489</td>
<td>87%</td>
</tr>
</tbody>
</table>

Source: Florida Statistical Abstract, 1994; County Perspectives, BEBR, 1994; Table: TCRPC

### Education

The size of the Region’s student population has increased dramatically (see Table 8). Over 173,000 students were enrolled in the four school systems in the 1993-94 school year (Profiles of Florida School Districts 1993-94). Almost 71 percent of those students attended schools in Palm Beach County. The Palm Beach School District is the fifteenth largest school system in the United States and fourth largest in the State.

### Table 8: Public School Enrollment

<table>
<thead>
<tr>
<th>Area</th>
<th>1984-85</th>
<th>1993-94</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River County</td>
<td>9,883</td>
<td>12,597</td>
<td>27.5</td>
</tr>
<tr>
<td>Martin County</td>
<td>10,409</td>
<td>13,023</td>
<td>25.1</td>
</tr>
<tr>
<td>Palm Beach County</td>
<td>83,568</td>
<td>122,141</td>
<td>46.2</td>
</tr>
<tr>
<td>St. Lucie County</td>
<td>15,316</td>
<td>25,250</td>
<td>64.9</td>
</tr>
<tr>
<td>Region</td>
<td>119,176</td>
<td>173,011</td>
<td>45.2</td>
</tr>
</tbody>
</table>

Source: Florida Department of Education

State of The Region
During the last decade, the Region’s population grew by 100 new permanent residents per day. Many of these individuals and families moving into the Region come for employment reasons; many others will make the Region their homes during retirement years. The Treasure Coast Region is expected to experience additional growth in population into the next century.

The economic opportunities which are available to Treasure Coast residents present an opportunity to achieve and maintain a very high quality of life. Whether this opportunity is put to good advantage depends upon how and to what extent we are able to manage growth. The primary objective of growth management is achievement and maintenance of a high quality of life.

The State and the Region face challenges in several key issue areas including environment, infrastructure, housing, education and economic. All of these issues are interconnected and related to quality of life. A high quality of life will not be achieved for all citizens of Florida and the Treasure Coast if we are not successful in meeting all challenges. Neither the potential of the State of Florida nor that of the Treasure Coast Region will be reached if we are successful in only a few areas.

By way of example, quality of life will depend in part on a stable, healthy economy. In order to achieve such an economy, efforts are being made to attract quality industry to the Region. This goal will not be realized, however, if we cannot achieve excellence in education or reduce crime, nor will we be successful in the absence of strong growth management policies protecting the quality of our environment, water supply, and land.

Quality of life in a community affects employee recruitment and employee turnover. Educational opportunities available are correlated with the quality of the work force. Even aesthetic attributes of our cities, towns, and neighborhoods are of concern to quality industry. It will be difficult to attract quality industry to communities within the Treasure Coast and to achieve a goal for a healthy, stable economy unless solutions to problems are achieved. The list of challenges facing the Region does not lend itself to picking and choosing which ones to address. All of the challenges identified must be addressed if the full potential of the Region is to be reached.

The Treasure Coast Region has its share of problems and issues to be confronted. The Region has the opportunity to solve these problems and to address critical issues. Many problems can and will be solved through growth management and comprehensive planning. These include problems created by: 1) development driven growth, and the failure of communities to manage growth; 2) land speculation and inefficient patterns of development 3) unbalanced demographic growth; 4) inadequate and incomplete provision of services concurrent with need; 5) tendencies toward parochialism when confronting regional issues; and 6) the absence of a well-defined land ethic.
Although the Treasure Coast Region has many inherent qualities which have and will continue to attract growth, many local governments have not provided a strong and clear direction on the type and form of growth and development which should occur. In the absence of such direction, sustainable growth and development cannot be assured. Through more directive and proactive planning, communities can increase their ability to share in the benefits associated with growth, and pay less of the costs typically associated with it.

While some of the problems that exist within the Treasure Coast Region can be solved through growth management, others have been identified which will take more time and efforts to solve. Many of these problems are societal and are based on relatively recent changes in the foundation of society. Such changes include: 1) increasing mobility of American society and corresponding decline in our sense of community (shallow roots syndrome); and 2) a shift away from traditional family structure, organization, and values.

Although such issues are broad in scope, they require a regional response. Declining sense of community results in increasing crime rates and adversely affects society’s ability to respond to long-term needs. With both parents working in many households, and the increasing frequency of single-parent households, schools assume increased responsibility and the demand for new services such as day care centers increases. Changing family structure has also increased the demand for elderly care and may be a cause for increased occurrence of drug and alcohol abuse and juvenile delinquency by children in the Region.
FUTURE OF THE REGION
1. Future of the Region

A. Trends and Conditions

1. Introduction

The Treasure Coast Region has experienced substantial changes in recent decades. In 1960, the total population of the Region was 309,000. By 1994, the population had increased to over 1.3 million. In one generation, total growth was equivalent to 14 new cities as large as West Palm Beach. Most new residents moved to recently urbanized areas.

As people moved in, previously undeveloped land was modified. The Region’s rapid development presented the unique opportunity to create new communities, with few constraints. It also presented challenges, due to the effects of rapid development on the fragile natural environment and existing coastal towns.

In hindsight, many areas could have been developed in a better way. Many problems have become evident, several relating to the effects of sprawl and the lack of good urban form and community design.

During the last decade, the quality of development has improved. Older towns are redeveloping and new suburban projects follow more thoughtful designs than in the past. Better regulations have helped, and market-driven development practices have played an important role in providing better housing products and more efficient and attractive commercial developments. The revitalization of several old downtowns and many historic neighborhoods has occurred.

2. Planning for the Future

As the Treasure Coast Region matures, planning efforts should start to differentiate between acceptable and excellent. The Region is ready to set standards that reach beyond the mere provision of basic services and propose the creation of complete and sustainable communities.

Most comprehensive plans do not differentiate between acceptable and preferable development forms. Most take a regulatory approach to growth management, setting minimum standards and focusing on preventing the worst things from happening. This philosophy has often failed to result in sustainable or complete communities.

Most existing plans provide few incentives to promote excellence. Instead, many different types of development, some better than others, are treated in the same way. As a result, the opportunity to implement a high standard is compromised.
Examples of planning and financial incentives which would promote excellence include:

Clarity – Existing comprehensive plans are often unclear and misleading when it comes to describing what can actually be done with property. This leaves landowners and potential developers with a significant degree of uncertainty. Uncertainty takes time and money to resolve, and the outcome of such expenditures is not assured.

Simplified Rules – Many existing comprehensive plans include hundreds of policies, but do not define in precise terms what is desirable. A clear plan that addresses appropriate issues would eliminate the need for most policy statements, making the review of projects much simpler.

Pre-Approval and Guaranteed Approval - If an ideal or preferred plan of development is defined ahead of time, in sufficiently clear terms, any developer or landowner who agreed to build in conformance to the plan could be considered preapproved. In other cases, landowners could be guaranteed approval in return for compliance with a simplified and precise set of guidelines.

Assistance - Developers and landowners that choose to do what the public considers ideal or preferred should be assisted since they are helping the public meet its objectives. For example, public infrastructure should be planned and financed in locations where it can facilitate the development of land in ways consistent with the policies of the plan. Accurate targeting of capital investments can protect the health and safety of the public, create a favorable economic environment and contribute to the implementation of the Plan’s general objectives established to preserve the quality of life of the Region’s residents.

Impact Fee Reductions - Projects vary in their impacts. Development that is considered ideal or preferred may have very beneficial effects and little impact. Where this is the case, impact fees could be eliminated or appropriately reduced.

Concurrency Relief - Some development will be considered preferred because it will contribute to the solution of existing problems, such as a backlogged roadway system. When this is the case, such development should not be subject to a concurrency determination for infrastructure deficiencies which it may help correct.

Land Use Changes - In order to accomplish preferred forms and patterns of development, changes in the future land use map designation may be required on what often amounts to a relatively small, compact area of land. Where a plan for ideal or preferred development is proposed consistent with the vision for the area, requests for density or intensity increases necessary to realize the plan should be strongly supported. Value added to the land by increasing density or intensity is the reward for building in the preferred manner.
Quality of Life - Perhaps the most important planning and economic incentive available to land owners is the maintenance of property values and quality of life. As the Region grows, many choices must be made. Some patterns of development have occurred that should be avoided. There is still time to plan a future which enhances the natural environment and quality of life that makes the Region special, a future different from the experience of some other areas of Florida. The sprawling, low density, development pattern which covers the entire landscape from coast to Everglades in parts of Dade and Broward Counties should not be repeated here.

As the Region matures, planning efforts should focus on: 1) expanding successful development ideas; 2) portraying a preferred form of development which should include the fundamental concepts that set the course towards excellence in development; and 3) establishing a framework of planning and fiscal incentives to make it easier for beneficial and preferred forms of development to happen.

3. A “Vision”

The Region should state a vision for the future that reflects its particular challenges and opportunities. The Treasure Coast Region is expected to continue growing during the life of this plan. Therefore, the principal focus of planning efforts should be on the form and location of future growth.

The vision should focus on community structure, sustainability, organization, and urban form. These topics are seldom addressed in existing comprehensive plans. The mix, balance and organization of residential types, work places and services can have a large effect on how often and far we drive, how much energy we use, how much pollution we generate, how much land we use, how much time we have to spend with children, and many other important concerns.

4. Why is a “Vision” for the Future Beneficial?

A “Vision” makes planning more effective because:

1. It promotes truly comprehensive solutions to problems.
2. It defines in clear and easily understood terms the preferred type of growth.
3. It provides incentives to make desirable things happen.
A VISION FOR THE FUTURE OF THE REGION

Future growth should follow a preferred development form. Preferred development should address the following regional issues:

1. Preservation of the natural environment and countryside.
2. Revitalization of existing urban areas.
3. The creation of new towns.

Future development should not sprawl because it is expensive and it degrades the Region’s quality of life.

Preferred development concepts will be implemented by regional strategies which:

1. state the preferred form of development.
2. suggest incentives to encourage and foster preferred forms of development

In addition, implementation will depend on county and municipal strategies which:

1. delineate where new development should or should not occur.
2. apply and expand the preferred form of development concepts.
3. encourage redevelopment and revitalization.
4. devise public investment programs favoring development of preferred forms and patterns of development.
5. send constructive economic signals to investors.
5. History of Development in the Treasure Coast Region

The history of human settlement in the Treasure Coast Region is long, but discontinuous. Development has not been a stable process based on home-grown ideas carried out by local residents. Instead, the Region was always subject to national and international influences that effected the natural evolution of growth.

In spite of the complexity of the events, three major trends define the history of the Region:

1. Large scale modifications of the natural environment.
2. Boom and bust development strategies.
3. Long term effects of early planning and settlement decisions.

The first trend is very evident and is inconsistent with current concepts of preservation and sustainability. Most of the land that has been settled or placed under cultivation has been completely cleared and/or drained. This type of development had some positive economic effects but at a great cost to the environment. The study of past projects may help decide which types of growth are preferable and what costs are worthwhile.

The second trend has been characteristic of development in much of the State. The market dictates economic cycles and economic needs. Rapid and unplanned development has brought wealth to the Region, but it also brought periods of crisis. Significant environmental and aesthetic damage, market and bank failures, real estate scams, and longer-term economic recessions characterize certain periods of the Region’s rapid growth and development.

An important lesson of history is that simple decisions made at the earliest stages of development have indelible effects. The use of the name Santa Lucia in the 1560’s or the design of a plat from 1910 still affect the daily life of the residents of the Region. Good urban form and community design influence the quality of life in the Region for a long time. In time, well-designed projects have cumulative effects, as the positive efforts of many generations are preserved and compounded. Poorly planned projects, on the other hand, are quickly abandoned after their initial life span. The efforts are not carried on to the next generation. The difference between well-planned and poorly-planned projects can be examined in a study of past successes and failures.

Native Inhabitants

The original human settlers of the Treasure Coast Region were from the Glades culture. Archaeological evidence suggests that they lived in small villages close to the coast. When the Europeans first arrived, the native inhabitants of the areas were the Ais. Historical records of their territory appear in the early Spanish
Maps. The name “Indian River” is a reference to the Spanish *Rio de Ais*. Jonathan Dickinson, a shipwrecked Quaker, described the customs of the Ais in a *Journal* written in 1696. The Ais culture disappeared soon after.

**SPAIN**

The Spanish were the first Europeans in the Region. In 1563, the Spanish built a small temporary fort near the southern end of the Indian River. It was named Santa Lucia to honor the patron saint of the day of arrival, December 13. Skirmishes with the natives caused the site to be abandoned, but the name was recorded by early cartographers and has been preserved to this day as St. Lucie.

Later, the Spanish military built a small triangular fort within the current municipal boundaries of the City of Fort Pierce, next to an Ais mound. A drawing of the fort is preserved. It follows the same design as the original St. Augustine fort. Presently, the unexcavated site is part of a St. Lucie County park.

This fort was of minor importance, since the principal garrison in Florida was in Saint Augustine, and later in Pensacola. However, when the fleet of 1715 sank during a hurricane, the fort served as the base of the salvaging operations. The Ais, who were expert salvagers, worked under the direction of the Spanish and in competition with pirates. Most of the treasure was rescued from the sea bottom. However, the legendary magnitude of this event was not forgotten. The fleet of 1715 left its name to the Treasure Coast Region.

Spain’s colonial town planning ordinances (the *Law of the Indies*, published in 1573) applied in Florida for three centuries. Unfortunately, urban development in the region was negligible during this period. St. Augustine was the principal settlement in Florida and followed the Spanish town planning principles. No Spanish towns were built in the Treasure Coast Region.

The Spanish presence had two principal repercussions: the Region’s name, after the sinking of the fleet of 1715; and the inspiration for a 20th century revival of Spanish architectural themes, which sold plenty of real estate during the boom and has continued to influence developers to this day.
19TH CENTURY

SEMINOLE WARS

After some international confrontations that completely bypassed the Treasure Coast, Spain ceded Florida to the United States. The population of Florida changed. Few Spaniards remained. The Ais disappeared as an ethnic group. The new native American settlers were the Seminoles, a break away band of the Creek tribe of Georgia. There were few others until the US army began establishing forts throughout southeast Florida.

FORT PIERCE

As the Spanish had done before, the US government built a series of forts and military trails to support the army’s effort to pacify the Region. Fort Pierce, along the Indian River, was the principal settlement during the 1840’s (see Figure 1-1). People were encouraged to settle in the Region around the military installations.

Other small settlements (Stuart, Jensen Beach) appeared along the coast at the turn of the century. Fishing and agriculture were the basis of the economy.

AGRICULTURE

Pioneer agricultural entrepreneurs experimented with different crops. For a few years, pineapples were the preferred cash crop. Eventually, citrus, sugarcane and vegetables would emerge as the most profitable crops and agriculture would become a principal economic pursuit.

TOURISTS

In the late 19th century, wealthy New Yorkers began wintering in St. Augustine, attracted by the mild climate. Soon after, some built large houses on the shore of the Indian River Lagoon in an area which became known as St. Lucie Village.

The seasonal presence of tourists fueled a new industry: the development of resorts and new towns. The opening of the Region occurred at a time when the American frontier had closed and the national industrial wealth was at its peak.

HENRY M. FLAGLER

In 1892, Daniel Burnham organized the Columbian Exhibition in Chicago. Every American architect and artist of renown participated in the creation of the fair grounds. The ensemble was called the White City (a reference to the color of all the buildings) and its memory would inspire the City Beautiful movement. Burnham’s memorable quote from his plan for Chicago was:
Make no little plans; they have no magic to stir men’s blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded, will be a living thing, asserting itself with ever growing insistence. Let your watchword be order and your beacon beauty.

It would become the inspiration for a generation of architects, planners and public officials. It also characterized the high aspirations of many of the period’s real estate developers.

The sponsor of Florida’s exhibit, a replica of the Castillo de San Marcos in St. Augustine, was Henry M. Flagler. Flagler was a partner in Rockefeller’s Standard Oil Company and was building the railroad that would open the East Coast of Florida for development. In addition to providing transportation, Flagler also created the destinations: luxurious hotels. The main attraction, then and now, was the Region’s weather.

Flagler built two hotels in St. Augustine: the Ponce de Leon (1885) and the Alcazar (1888). The architecture was fanciful and romantic, recalling the Spanish past. The fact that they were located in the oldest city in the United States, founded and settled by authentic conquistadors, added flair to the resorts. However, the emphasis was fantasy, not historicism. The architects often found their inspiration in picture books on distant locales.

The first development ideas to affect the Treasure Coast in the 20th century came from the north. Excited by the possibilities of creating new resorts, Flagler bypassed established growing towns such as Fort Pierce and Stuart and built his next hotel on the Island of Palm Beach. In 1893, construction began on the largest hotel in the world: the Royal Poinciana. Two years later, the Palm Beach Inn which is today known as the Breakers was begun.

At the time, few people lived on the shores of the Lake Worth lagoon. Juno Beach was the county seat of Dade County. “In a few years there’ll be a town over there as big as Jacksonville, and St. Augustine will be a way station for it.” Flagler was speaking of West Palm Beach, which today is the principal city of the Region. The City was originally built on the shore of Lake Worth with no other initial purpose but to service Flagler Hotels, located across the lagoon, on the barrier island.

Flagler’s surveyors laid out a simple grid of rectangular blocks perpendicular to the shore. Clematis, a substantial main street, connected the train station (see Figure 1-1) to a ferry that would take all visitors to the island. In West Palm Beach, Flagler built housing for the many hotel workers, and he also financed the City Hall, a fire station and a Courthouse (now under restoration). He was not a land speculator. “I have not bought any land at Palm Beach with the expectation or desire to sell it again ... As to a matter of profit I think I can make more in one week in Wall Street than I can make in one year in real-estate in Florida.”
West Palm Beach Tri-Rail Station (restored 1928 FEC station)

Second Street, Fort Pierce, c. 1925 (most buildings no longer exist)

HISTORIC BUILDINGS
Preservation and Demolition
The Town of Palm Beach grew as a winter resort. Victorian cottages, Flagler’s palatial Whitehall, and Mediterranean villas were built around the hotels. By the roaring twenties, Palm Beach had become a town, with a mixture of housing types, civic buildings and commercial structures.

Flagler’s initiative evolved into a major industry: real estate development for out of towners. Many ambitious entrepreneurs followed his lead and created fantasy communities out of the swamplands. Only some proved to be successful, but all had big plans. For a number of years, the American public bought most that was offered.

RURAL TOWNS

Flagler also encouraged other types of development. Louis Pio, a Danish immigrant who dreamed of establishing a string of Danish towns in the American countryside, worked for Flagler during the Colombian Exhibition. In 1893, he bought some land from Flagler’s railroad holdings in St. Lucie County and established the new town of White City along the St. Lucie River. In spite of the grandeur of the name that recalled all the lofty aspirations of the City Beautiful movement, White City never grew into a large town. Today it is a small rural community, overshadowed by the growth of Port St. Lucie.

In the north end of the Region, Fellsmere (see Figure 1-3), a small rural town in Indian River County, was the result of agricultural development. Land was drained and planted with sugar cane. A small town was platted on a square mile next to the fields. To this day, the town has retained its basic structure: a section of land platted with a regular grid of streets with a small main street and an elementary school in the center. In Martin County, Indiantown (see Figure 1-2) had a similar history.

DRAINAGE PROJECTS

Early agricultural successes inspired various projects for the “reclamation” of the Everglades. At the beginning of the 20th century, Florida boosters believed that the wetlands of Palm Beach County could be drained easily. Their plan was to attract new settlers to thousands of new acres of rich muckland.

THE GLADES

When early drainage attempts failed, it became clear that a large scale regional project focused on Lake Okeechobee and the Everglades would be necessary. The conceptual plan for draining the Everglades was rather simple. First, the shore of Lake Okeechobee had to be stabilized, as the constant flow of water towards the south was a principal impediment to the development of the area. Second, canals would be built in strategic locations, linking the lake to the Atlantic Ocean. The canals would serve two purposes. They would regulate the water level in the lake and would drain their respective basins. Both purposes would be accomplished by discharging excess water to the lagoons and bays on the east coast of South Florida. The unusually flat topography of the Region and
the simple effect of gravity were the key elements that would make the system workable. However, draining the Everglades proved more difficult than anticipated.

The shoreline around Lake Okeechobee was stabilized with a series of levees. The last one, still in use today in its original form, was the Hoover Dike, built in 1930. A series of canals were built. Each new canal attempted to correct the short comings of the previous system. In the region, the West Palm Beach Canal opened in 1917, and the St. Lucie Canal in 1921. The St. Lucie Canal was the last one to be planned and built. It was also the largest, a clear demonstration of how difficult the reclamation of wetlands around the lake had become.

Eventually, the Glades area was drained. Sugar cane production moved to this area (from Fellsmere, for example, where citrus took its place) to take advantage of the rich muck soil and the mild temperatures regulated by the lake.

The Glades area was settled as a result of the drainage projects. Small villages (Lake Harbor, Canal Point) were built next to the locks that regulated the flow of water from the Lake into the various canals. The large sugar companies also built camps for their workers.

LAKE WORTH

A typical land scheme that involved considerable drainage of land was the City of Lake Worth, developed by William Bryant, an English engineer, during the first decade of the 20th century. Lake Worth was to be a farming community. But before any agriculture could occur, the land had to be drained. This seemed simple at first, but proved difficult in practice. It would take many years of large scale “reclamation” projects for the land to be drained.

In the case of Lake Worth, however, the developer had included, as an incentive, an urban lot in a new town for each farm. The Town was platted on the shore of the Lake. Its design was efficient: a commercial spine in the center of town and neighborhoods centered around elementary schools (see Figure 1-4). Most of the house lots were small (25 feet and 50 feet in width), but the blocks had alleys, which eventually allowed for the building of detached garages and accessory apartments. The agricultural plot, on the other hand, proved of little value because the land was very difficult to drain. Ironically, as Flagler’s Palm Beach grew and southeast Florida became a tourist and retirement destination, the urban lots in well planned towns like Lake Worth proved more valuable than agricultural land.
Figure 1-4
NORTH GRADE ELEMENTARY SCHOOL, 1926
Lake Worth, Palm Beach County
TOWN PLANNING

Interest in Town Planning was at its highest during the Florida land boom. The ideas proposed by a series of theoreticians and practitioners had been codified into a useful textbook by Raymond Unwin. This textbook, “Town Planning in Practice” illustrated basic principles of planning. Unwin’s ideas were adopted by many American planners who worked in Florida.

JOHN NOLEN

US Sugar had very ambitious plans when it hired planner John Nolen to design company towns in the Glades area. At the time, Nolen ran the principal planning and urban design firm in the nation out of an office in Cambridge, Massachusetts. A substantial amount of his work was in Florida, because the state was booming and new towns were planned practically every day. Only a few of the plans would eventually result in new towns, but at the time, the boundless optimism of the boosters of the roaring 20’s placed no limits on the potential growth of the region.

The Lake Okeechobee concept included a string of small rural villages along the shore of the lake. Clewiston in Hendry County, a few miles from the Palm Beach County line, was the only town to develop fully. To this day, it is the location of US Sugar’s headquarters. Canal Point was also studied by Nolen. Although it never developed beyond a small village next to the canal lock, it portrays some examples of good planning. In the Treasure Coast Region, Nolen prepared a general plan for West Palm Beach in 1923 (see Figure 1-5), which proposed a series of improvements to the original plat.

THE OLMSTED BROTHERS

Kelsey City (today known as the Town of Lake Park) (see Figure 1-6) was planned by a visionary developer who hired one of most prominent design firms of the nation: the Olmsted Brothers. It was run by the children of Frederick Law Olmsted, the designer of Central Park in New York and of the earliest American suburbs. The Olmsted Brothers were talented in their own right and prepared many land development projects throughout America. The plan had one main street and two diagonals. The civic buildings, including town hall, were located at the intersection of the three streets. A public park was located where the main street met Lake Worth.

ADDISON MIZNER

Some of the first successful land promoters (later called developers) and architects of the early 20th century attempted to recreate Spanish architecture. The concept of a glorious Spanish past was nothing more than a marketing gimmick, but it often produced outstanding architecture and well-designed communities. The principal practitioner of this style was Addison Mizner, and the bulk of his work is in Palm Beach County.
Many architects, especially in California, had found inspiration in Spanish and mission architecture, and in the architecture of other distant lands. Some had not even visited Spain or Latin America, as picture books were beginning to be published in great quantities and were used as direct references. Mizner was different. He had spent several years of his youth in Antigua, Guatemala, a Spanish colonial city suspended in time by a 17th century earthquake. There he acquired a taste for Spanish colonial vernacular architecture which he combined with other traveling experiences and with references from his extensive collection of postcards and architecture books into an architecture that would be called Mediterranean but which emerged along the shores of Lake Worth. Its influence can be seen to this day in projects such as Mizner Park in Boca Raton.

Mizner designed and sometimes developed many types of projects. They range from ocean front mansions on County Road in the Town of Palm Beach to a small single family courtyard house on a 50-foot lot. His most memorable work was Via Mizner and Via Parigi, a mix-use complex on Worth Avenue. The commercial frontage along Worth Avenue was lined with arcades. The interior of the block was developed with a series of connected courtyards. The ground floor was commercial and the upper stories residential. On the very top, Mizner had his own apartment.

Mizner’s most ambitious project was Boca Raton. He attempted to develop a new resort town, at the scale of Flagler and with the flair of old Spain. He built a hotel, but the Florida boom was not sustainable and the project, like so many others, failed.

THE SECOND HALF OF THE 20TH CENTURY

Planning ideas changed after World War II. Radical ideas about the function and efficiency of the city and its components first proposed by a few architects and journalists in the 1910’s and 20’s gained a wide audience and discredited many of the town planning concepts of the first part of the century. At the same time, new residents flocked to Florida. Military personnel stationed in Florida liked what they saw and stayed, or returned. Central air conditioning made South Florida an attractive location, both for young people and for a great new market: retired persons.

RETIREES

In the 50’s, developers discovered the retirement market. In some ways, the retirement boom was similar to the original boom of the 20’s. The Region’s land was seen as a product that could be marketed to out of towners. In the twenties, marketing focused on fantasy, luxury, and good weather. After 1950, the emphasis was on affordable retirement and good weather.

Three major types of projects were developed for this market: garden apartments owned as condominiums, beach front high-rises, and mobile home parks. Although the retiree market seemed to bring development and wealth, most of the housing units were small and inexpensive. Owners paid few taxes but eventually came to need public services.
LAND FOR SALE

Many development schemes of the period offered land for houses. No attempt was made to create towns. In fact, in many cases, no attempt was made to provide any infrastructure. The Acreage and Jupiter Farms (see Figure 1-8) in Palm Beach County, for example, were large wetlands (30,000 acres and 10,000 acres) which were drained, platted into one acre lots and sold. Roads were unpaved, every house had its private well and septic tank, and non residential uses were not included.

Such projects marketed rural living. Unfortunately, the rural effect was quickly compromised as the development filled up. New housing sites were clear cut. Each house needed a large drainage pond. The buildings had to be constructed on fill to minimize the effects of the summer rains. The construction of on-lot septic disposal systems were problematic.

LARGE HOUSING SUBDIVISIONS

The preferred development formula of the 1950’s and 60’s had a noble goal: providing every American family with an affordable single family house. This type of development had never been possible in American history and soon became the foundation of one of the most profitable industries in the region: the construction of subdivisions, and later master planned communities, for new residents.

In the past, adequate land for residences had been limited by available means of transportation. In colonial times, these areas were limited to those that could be traveled by foot. After the industrial revolution, residents could live in neighborhoods around transit stops. With the arrival of inexpensive cars, plentiful gasoline and a magnificent network of highways linked to the interstate system, more and more land became suitable for building residences. Prices decreased and the overall quality of housing improved.

Port St. Lucie (see Figure 1-9) was a literal interpretation of this development formula. General Development Corporation (GDC) platted 80,000 single family lots in southern St. Lucie County and began selling them in installments to people throughout the country. Today, the City of Port St. Lucie contains thousands of homes on these lots.

But the shortcomings of the development formula became evident in time. Housing, by itself, did not create complete communities. People needed places to work and shop. Such places were not part of the formula. In Port St. Lucie, for example there was no attempt to provide most services or to include a downtown. Eventually, the development incorporated into a City and, although great improvements have been made, many of the problems associated with poor original planning have proved difficult to overcome.
Figure 1-8
LAND FOR SALE
Jupiter Farms, Palm Beach County
SPRAWL

The subdivisions of the 50’s and 60’s established the norms for sprawl development. City-making was reduced to a series of simplistic formulas that addressed each issue associated with growth in isolation. In new development, uses were separated and the characteristics that were perceived as more marketable were maximized.

Residential developments became increasingly isolated and uniform. Shopping centers increased in size and provided enormous amounts of parking. There was no serious attempt to incorporate new developments into towns or to coordinate land use on adjacent properties. Since any parcel of land could be used for practically anything, the result was sprawl. Individually, each project provided a product that was marketable: inexpensive housing, cost effective shopping, easy access, etc. Collectively, however, the compounded effects of so many uncoordinated decisions placed a financial burden on the existing citizens. Taxes went up to build larger roads to service poorly laid out suburban tracts, but roads continued to be congested. Quality of life for many citizens declined.

GROWTH MANAGEMENT

During the 1970’s and 1980’s a series of growth management laws were passed by the State in an attempt to combat the negative effects of suburban sprawl. Local government comprehensive plans were prepared and adopted which contained policies which sought to address problems and create new standards for managing growth. Protection of the natural environment became an important element of planning. Greater care was given to the provision of services as development occurred. Policies that addressed transportation, affordable housing, land use and other fundamental issues of planning were adopted and implemented.

However, no desired form of development was prescribed or suggested, a weakness which partially undermined the combined effect of the policies. Although most comprehensive plans included outstanding policies to address development processes, no picture or vision was established for the community. The original authors of Florida’s growth management legislation felt that the concepts of consistency and concurrency would solve our problems and ultimately result in quality places to live. Some of those authors have recently acknowledged that those concepts have not been successful, and in some cases have had the unintended and undesirable effect of encouraging and increasing urban sprawl. Alternative methods to manage growth and improve quality of life need to be considered.
THE CITIES

In the 1970’s the old Main Street (Lake Avenue in Lake Worth, Clematis in West Palm Beach, Second Street in Fort Pierce, etc.) lost its prominence. Department stores moved to new malls and national chains out competed mom and pop stores. Downtowns (see Figure 1-10) stopped being the center of public life. Theaters closed, office space was vacated and apartments above the store were abandoned. Only public sector tenants such as government and judicial offices remained.

As jobs were relocated, inner city neighborhoods declined. Most of the housing in the coastal cities was old and undersized. More attractive choices were available in suburbs and in isolated developments. Many neighborhoods that had thrived in the past (Flamingo Park and Northwood in West Palm Beach, the downtown neighborhoods in Lake Worth, etc.) became derelict. Crime and other social problems were sensationalized by the press. Soon, people lived in some sections of the older cities only if they had no other options.

CURRENT CONDITIONS

Since 1970, the Region has changed significantly. In 1970, approximately two-thirds (62 percent) of the Region’s population lived in the older coastal cities on the mainland and barrier island or in the small cities along Lake Okeechobee. Although approximately one-third of the population lived in unincorporated areas (34 percent), the Region was primarily one of coastal cities and an agricultural interior, with large expanses of natural systems.

By 1990, however, only approximately one-third (33.4 percent) of the population lived in the older coastal communities and Glades settlements. Several “new” cities (e.g. Greenacres, Port St. Lucie, Palm Beach Gardens, Royal Palm Beach) which had less than 4 percent of the Region’s population in 1970, had exploded in population growth to the point where these cities now contain over 13 percent of the Region’s population. Even more significantly, nearly a half million people were added to unincorporated areas, which now contained more than half of the Region’s population (50.4 percent).

As a result of the dynamic population growth in the interior areas, agricultural uses disappeared or were pushed further to the west. This new and rapid growth also led to a number of serious problems such as stormwater management, and a great deal of difficulty in building enough schools, parks, and roads to accommodate the new population.

The new interior growth areas also absorbed a good deal of the vitality which was formerly found only in coastal cities. While many coastal cities continued to grow in population, much of this growth was a result of annexation. In many cases, the older parts of coastal cities have experienced distress.
In recent years, however, a number of cities in the Region have initiated and carried out successful revitalization efforts. As an example, in the City of Delray Beach, downtown revitalization efforts date from the creation of the Downtown Development Authority in 1971. Efforts gained momentum in 1985 with the formation of a Community Redevelopment Agency. Citizen groups recommended plans for a downtown streetscape, and the City Comprehensive Plan of 1989 promotes a vision of a “village like community by the sea.” The City’s downtown has once again, as a result of these efforts, become the heart of the community. Delray has maintained a compact urban core centered on Atlantic Avenue, and downtown neighborhoods have remained vital components.

There has been significant public investment, including major streetscape improvements, landscaping, improvements to alleys, park redevelopment, reuse of abandoned school property, etc. The City feels it is at a beginning of a major revitalization of the downtown area, and acknowledges the need to remove disincentives to development and replace them with incentives to attract business to downtown.

Other cities in the Region have a history of revitalization and redevelopment efforts, although there are few major success stories. Many cities in the Region have held planning charrettes and initiated redevelopment efforts in recent years. These include:

BOCA RATON - The most recent amendments to the City Redevelopment Plan were adopted in 1995. The City has experienced a tremendous amount of development activity in the downtown in recent years. Since 1988, there has been over 1 million square feet of new development, compared to only 72,000 square feet from 1980 to 1988. The centerpiece of this new development is the Mizner Park project, but the City has also recently approved projects which include residential townhouse development, a department store, and an office, retail, residential tower.

BOYNTON BEACH - In 1994, the City prepared a detailed redevelopment plan for the City’s downtown, based on citizen input during a planning charrette. The plan proposed a number of projects, including a redesigned main street, new city square, marina redevelopment project, etc.

FELLSMERE - In 1993, the City held a three-day design charrette to address a number of issues including the revitalization of the old downtown and core neighborhoods and the reuse of the old, centrally located elementary school.

FORT PIERCE - In 1995, the City held a week long planning charrette on the future redevelopment and revitalization of the downtown. A report was issued and accepted by City Council and a redevelopment and revitalization plan is under preparation. A number of recommendations based on the charrette are being implemented, including plans for a new library, streetscape improvements, and the revitalization of the historic Sunrise Theater.
GLADES AREA - Under a joint planning agreement with the County, the Cities of Belle Glade, Pahokee and South Bay have access to technical assistance in a number of areas, including planning charrettes. A charrette was carried out in the city of Pahokee in 1995 and a Belle Glade charrette is anticipated in 1996.

JUPITER - In 1989, the Town prepared a Corridor Study for Indiantown Road; and in 1992-93 implemented a comprehensive strategy (urban design plan) for the Corridor.

LAKE PARK - The Town held a week long planning charrette in 1994 and prepared a draft redevelopment plan based on public input during the charrette. The Town is presently considering a number of the projects recommended in the plan.

LAKE WORTH - In 1993, a five day planning/design charrette resulted in a Master Plan for the redevelopment of the City. The City adopted the plan in 1994, and has initiated a number of the plan recommendations. The City has been very successful in implementing recommendations, especially relative to traffic, bikeway and pedestrian improvements.

PALM BEACH GARDENS - The City held a number of “visioning” sessions in 1994 as a follow-up to the North County Planning Forum held in 1993. The City has adopted a policy statement on the Environment as a result of the visioning effort. Other efforts are moving forward as a result of the preparation of the City Comprehensive Plan Evaluation and Appraisal Report.

PORT SALERNO - This unincorporated area of Martin County had a workshop in 1995 to study redevelopment and revitalization opportunities. Follow up activities by the County and local residents are on-going.

PORT ST. LUCIE - The City held a visioning session in late 1993 to address land use issues along Port St. Lucie Boulevard. The visioning session identified issues such as signage and landscaping/buffering and recommendations were made pertaining to land uses along the corridor. Some of the recommendations have been implemented and others are being implemented.

RIVIERA BEACH - The City has been considering a Development of Regional Impact for its downtown since 1989, and held a planning charrette in 1991 to identify desirable components for the downtown. The DRI has yet to be approved, but the City is in the process of revising the Master Plan for the DRI.

SEBASTIAN - A redevelopment plan was prepared and approved in 1995. Improvements are anticipated as a result of a tax increment financing program and community development block grant funds for utility, streetscape, and pedestrian/bikeways.

STUART - The City prepared a redevelopment plan based on a planning charrette. A number of the plan recommendations have been carried out, as a result of public and
private investment consistent with the plan, including the reoccupation of abandoned
downtown storefronts and the rehabilitation of surrounding residential neighborhoods.

VERO BEACH - The Downtown Redevelopment Plan was adopted in June of 1992. The
Plan focuses on promoting mixed uses and multiple activities, physical and aesthetic
improvements, parking and circulation improvements, and recommendations to property
and business owners.

WEST PALM BEACH - The City has a history of redevelopment efforts, which included
significant demolition in the downtown area. The City has considered at least two DRI’s
in the downtown area for a number of years, including a City initiated downtown DRI.
In 1993, the City carried out a six-day design charrette which led to the preparation of a
Master Redevelopment Plan for the Downtown. The Plan portrays the desired urban
form and architectural design for the area. Both public and private investment consistent
with the Plan has been significant.

The need to prepare a vision for the future has been recognized not only by older cities,
but by the Counties who have been experiencing the majority of new development. Palm
Beach County has spent several years considering an appropriate urban form for
unincorporated areas and is now considering the adoption of a tiered approach to future
development.

In 1995, Martin County held a week long planning Charrette for a 90,000 acre area of
unincorporated Martin County. A charrette report was prepared and its
recommendations are under consideration.

St. Lucie County and its three municipalities (Fort Pierce, Port St. Lucie and St. Lucie
Village) have been working jointly since early 1995 in conjunction with the St. Lucie
County Chamber of Commerce to establish a vision for the County. The established
Vision includes benchmarks to measure progress in the areas of education, quality of life,
economic development, infrastructure, government and leadership.

Indian River County carried out a visioning exercise in 1989-90 during the time the
County Comprehensive Plan was being prepared.

Suburban growth has slowed down, but existing regulations and market practices (i.e.
Bank lending criteria, location of public infrastructure, etc.) still encourage western
expansion. The various participants in the development process are beginning to
experiment with better development patterns, in the hope of preventing some of the
shortcomings of the past. Most banks are lending money to mixed-use projects (i.e.
Mizner Park, etc.) and some developers are designing well balanced neighborhoods
within close proximity of shopping and schools (i.e. Abacoa in Jupiter).

THE FUTURE
After over 400 years of recorded development history, the Treasure Coast Region is still growing. However, growth is not as rapid or as haphazard as it was in the past. The draining of wetlands is no longer permitted. Traffic problems have forced a more careful analysis of development impacts. New development and redevelopment projects have reached new levels of quality.

As the Treasure Coast Region matures, planning efforts should start to differentiate between acceptable and excellent. The Region is ready to set standards that reach beyond the mere provision of basic services and propose the creation of complete and sustainable communities.
**FUTURE GROWTH**

*Significant regional issues:*

- Preserve the Environment
- Revitalize Existing Urban Areas
- Create New Towns
- Prevent Sprawl
A balanced well-planned region includes a variety of land uses, but those uses are all contained in two general areas:

a. Countryside
b. Urban areas

The countryside includes areas that have remained in their natural state and areas that have been developed for agriculture, mining, water management or similar activities. Well-defined urban areas and well-defined countryside should occur around existing natural systems. This creates better environments for people, and also for plants and other animals.

The first step is a determination of the land that should be preserved. While many land uses may change over time, the extent of environmentally significant areas is easier to determine and should not be expected to change in the future. Once environmentally significant lands are identified and protected, it will be easier to plan the areas that are available for development.

**REGULATORY PRACTICES**

The most important components of a region’s countryside are its natural systems. Many of these systems have been altered by the development of land for urban or agricultural uses. Recent regulatory and planning practice has encouraged the preservation of individual elements of the systems (e.g. isolated wetlands among residential lots, small patches of uplands in commercial shopping centers). Generally, each individual parcel is required to address environmental issues, including the preservation of wetlands and endangered habitats and storm water management. This is not the ideal solution to protect natural systems, and may interfere with the creation of good urban environments. Current growth management plans and regulations often result in fragmented and devalued natural systems.

**NATURAL SYSTEMS**

A better approach is the preservation of complete natural systems. This strategy would allow the preservation of larger parcels of land. The preserved natural systems, together with other rural uses, would also limit suburban sprawl, as they would form a permanent greenbelt that would bound development into well-defined areas. Development could occur on either side of this greenbelt but it would have clear edges and would be less likely to result in sprawl.
2. REVITALIZE EXISTING URBAN AREAS AND RETROFIT SUBURBIA

Improving and preserving existing neighborhoods and subdivisions should be a priority. Generally, the Region’s older urban areas are concentrated in a narrow strip of land that parallels the Atlantic Ocean (see Figure 1-11). As developed areas have aged, a variety of problems have emerged. The revitalization of developed areas is important because of the public investment (streets, water, sewer, schools, etc.) made in these areas. Some facilities are underutilized or abandoned. Lagging areas must be improved to share in the general prosperity of the Region.

The types of existing development which could benefit from revitalization range from commercial strip shopping centers along the major roads to older residential areas. Some areas are platted as traditional towns, with continuous networks of streets and public parks in prominent locations, other parcels were developed in isolation and have become part of sprawl.

A REVITALIZATION STRATEGY

A major factor impeding redevelopment has been the absence of an adequate strategy to repair the many neighborhoods and districts that make up the cities, towns and village of the Region or to retrofit sprawl into a more cohesive urban form. In many cases, older developed areas have welcomed any development project, regardless of its impact or its design. The results have often been undesirable, and have further reduced the attractiveness for a comprehensive redevelopment of existing developed areas.

A better revitalization strategy should focus on techniques that encourage infill (see Figure 1-12) and precise changes to the urban structure of lagging developed areas. The principal objectives should be retrofitting poorly planned developments into a structure consistent, as much as possible, with the preferred development form; and, when development is already composed of neighborhoods and districts which form cities, towns and villages, encourage preservation and revitalization.

A major factor impeding redevelopment has been the absence of an adequate strategy to repair the many neighborhoods and districts that make up the cities, towns and villages of the Region.
Figure 1-12
COASTAL INFILL
Conceptual Plan
3. CREATE NEW TOWNS

As an alternative to sprawl, new development should be based on planning concepts that create new communities. Cities, towns and villages composed of neighborhoods and districts should be created.

CITIES, TOWNS AND VILLAGES

Cities, Towns and Villages refer to the form of development that results when land uses are mixed to form complete neighborhoods and districts. Neighborhoods are complex areas that include several types of housing and some commercial and workplace uses. Although diverse, neighborhoods may be predominately residential. Well-designed neighborhoods minimize the need to drive cars for routine trips and provide outstanding public spaces within their boundaries. Neighborhoods attempt to be fairly self-contained and provide locations for most daily activities. Districts, on the other hand, tend to be more specialized. A downtown or an industrial area would be districts. While districts may also include a variety of uses, they are not self-sufficient. Instead, they provide a place for activities that would not fit well within a neighborhood.

FLEXIBILITY

These basic ideas calling for a preferred development form are very flexible. They are not unusual and certainly not new, as they are derived from the example of existing towns on the east coast of Florida and other places. Such simple concepts can help direct growth in ways that are positive for the public and for the private developer.

DESIRABLE GROWTH

Often in American history, development of new communities has been desired by the public. Many people believed that new settlements brought prosperity. Today, many citizens fear that new development will result in a decline in their quality of life, with an increase in taxes. For this and other reasons, citizens often oppose proposals for new development.

Part of the problem is that today’s growth tends to be poorly planned and designed. It is based on assumptions that may work well in the short term, but offer no long term plan. If growth is to be desired once more, if it is to bring long term prosperity and joy, it must create more than a speculative subdivision or an isolated “shopping center.” It should produce New Towns (see Figure 1-13).
4. PREVENT SPRAWL

Contemporary planning has centered on the fight against sprawl. Sprawl has been universally denounced as destructive and expensive. Yet little has been done to prevent it, because it has also been perceived as the inevitable consequence of market forces. Surprisingly, this debate has gone on without a practical definition of sprawl and, more importantly, without any preferable development alternatives.

DEFINITION OF SPRAWL

Sprawl is any type of development that does not create cities, towns and villages composed of neighborhoods and districts. Examples of sprawl are: isolated housing subdivisions; strip commercial development; schools disconnected from the urban areas they serve; isolated office and industrial parks; and isolated gated and walled development.

Sprawl occurs when historic development forms are not respected, existing plats are not continued and excessive amounts of land are opened to development before complete communities can form in older areas. Sprawl tends to be expensive for the long-time residents, as their taxes increase to finance ever-expanding roads, sewer and water lines, sheriff and fire services, schools and other costs created by inefficient subdivisions and PUD’s. The best way to prevent sprawl is to focus growth in ways that create better urban areas.

Future growth should not sprawl. Sprawl is undesirable because it is too costly and it decreases quality of life in the Region.
PREFERRED DEVELOPMENT FORM

Goals, Policies, and Strategies for future development of:

COUNTRYSIDE

CITIES, TOWNS AND VILLAGES

NEIGHBORHOODS AND DISTRICTS

BUILDING TYPES
1. COUNTRYSIDE

The countryside is a general term that refers to all areas that are not urban. Some parts of
the countryside are in their natural state. Other areas are developed for agricultural or
similar uses. The countryside contains the following uses of land:

1. Natural Systems

In its natural state, the Region included a variety of plant and animal habitats. Undisturbed land is
valuable for the preservation of animal and plant communities, drainage patterns and water recharge,
all desirable features of a well-planned region.

Natural systems include:

a. Wetland habitats
b. Upland habitats

2. Agriculture

In the Region, agricultural lands include pasture, row crops and groves.

3. Canals and Reservoirs

4. Barren and disturbed land

Often, such land is infested with exotic species.

5. Rural Villages

Villages are urban enclaves within the countryside.

6. Golf Courses

This use is considered as countryside where it forms the edge between developed and undeveloped
areas, occurs in established greenbelt areas, and is not interspersed or broken with urban or suburban
uses.

7. Regional Facilities

The countryside may, under certain conditions, be the appropriate location for facilities which serve
multiple jurisdictions, but do not fit well within the urban fabric of a village, town or city. Examples
of such facilities are landfills or resource recovery facilities, industrial uses which require a large
amount of buffering (i.e. Pratt-Whitney), and certain public utility uses such as large power plants.

8. Transportation Rights of Way
PREFERRED DEVELOPMENT FORM STRATEGIES

For the purposes of developing a preferred development form, strategies for the countryside should focus on preserving the natural environment and preserving open space.

Regional Goal 1.1

A sustainable countryside.

Indicator:

Number of communities which adopt the Countryside as a concept in their local government comprehensive plan.

Strategy 1.1: Preserve and manage complete natural systems as a network of connected nature preserves.

Policy 1.1.1: Develop a framework of incentives and programs for the preservation of environmentally significant natural systems. Such incentives and programs should include: tax abatement or incentives, conservation easements, transfer of development rights, purchase of development rights and acquisition.

Policy 1.1.2: Manage, restore, and reestablish natural systems.

Strategy 1.1.2: Promote compatibility of urban areas, regional facilities, natural preserves and other open spaces.

Policy 1.1.2.1: Assign future land use designations to: a) nature preserves; b) agriculture; c) landfills and resource recovery facilities; d) canals, reservoirs and water attenuation facilities; e) industry; f) transportation right-of-ways; and g) rural villages.

Policy 1.1.2.2: Encourage agricultural practices and development that reduce impacts to the function and value of natural systems.

Policy 1.1.2.3: Require a planning study to evaluate development proposals in the countryside (see Figure 1-14, 1-15). Such studies shall address the location, design and impacts of: a) landfills and resource recovery facilities; b) canals, reservoirs and water attenuation facilities; c) large industrial uses; d) transportation rights-of-ways; e) rural villages; and f) neighborhoods, districts or golf courses which are planned at the edge of an urban area and adjacent to the countryside.
Regional Goal 2.1

Preserve natural systems.

**Indicator:**

*Number of natural systems where land is preserved or protected.*

**Strategy 2.1.1:** Acquire or otherwise preserve and protect significant natural systems and the components of these systems.

- **Policy 2.1.1.1:** Determine areas that are environmentally significant, using the most current and appropriate data and analysis and map significant natural systems.

- **Policy 2.1.1.2:** Acquire and manage significant natural systems on a cooperative and collaborative effort of all public land acquisition entities.

- **Policy 2.1.1.3:** When public acquisition of significant natural systems is not feasible, work with landowners to secure conservation easements and encourage transfer of development rights programs.

**Strategy 2.1.2:** Discourage sprawling development patterns to ensure compatibility of urban areas, natural preserves and other open spaces.

- **Policy 2.1.2.1:** Encourage clustering and transfer of development rights to new and existing cities, towns and villages.

- **Policy 2.1.2.2:** Encourage densification of and investment in established cities, towns and villages

- **Policy 2.1.2.3:** Locate infrastructure investments in areas designated as existing or future cities, towns and villages.
2. CITIES, TOWNS AND VILLAGES

Cities, towns and villages are general terms that refer to well-planned urban areas (see Figure 1-17). The terms, for the purposes of stating a preferred development form for the Region, refer only to the physical composition and arrangement of urban areas.

Cities, towns and villages share common characteristics. They have centers and edges. They include places to live, work and relax. The buildings preserve the scale and character of their surroundings. The residents feel they belong to a community. They share schools, parks and churches. They are different in their size and their relative importance within a region.

COMPONENTS

Cities, towns and villages result from the aggregations of neighborhoods and districts.

Neighborhoods are diverse areas that include several types of housing and some commercial and workplace uses. Although diverse, neighborhoods may be predominately residential. Well-designed neighborhoods minimize the need to drive cars for routine trips and provide outstanding public spaces within their boundaries. Neighborhoods attempt to be fairly self-contained and provide locations for most daily activities.

Districts, on the other hand, tend to be more specialized. A downtown or an industrial area would be districts. While districts may also include a variety of uses, they are not self-sufficient. Instead, they provide a place for activities that would not fit well within a neighborhood. Districts are not isolated by great distances from neighborhoods. They are well-connected and closely tied to the neighborhood.

If an area develops as an isolated, diverse neighborhood, it would be a village. If it includes at least one district and more than one neighborhood, it would be a town. If it contains many districts and neighborhoods, it would be a city.

Development should be limited to projects that build parts of cities, towns and villages. Developments that do not form one or several neighborhoods or districts within a well-defined urban area are components of urban sprawl.

COMPREHENSIVE PLAN

A comprehensive plan should state the strategy for the creation of a complete community. Every city, town or village is different and must have its own plan. However, a few general elements and qualities are found in every good community:

1. A center
2. Clearly defined neighborhoods and districts
3. A mixture of uses
4. Well-designed and maintained public spaces, buildings, and infrastructure
5. A network of interconnected streets designed for various transportation modes
6. An edge

REDEVELOPMENT

Proposals for redevelopment that eliminate the existing fabric and implant new building types and new street layouts based on suburban examples tend to fail. Redevelopment and revitalization plans must build on the good features of well-planned urban areas (see Figure 1-21). Types of development that should be avoided are: oversized office buildings that do not relate to their surroundings, large parking lots that kill pedestrian life, excessively large passive parks which interfere with the achievement of a good, pedestrian-friendly, urban fabric, and random street closures and replattings around cul-de-sacs which interfere with pedestrian and traffic flow.
Opposite Page:

1. Apartment Buildings
2. Mixed-Use/Office Buildings
3. Tri-Rail Station
4. Transit Oriented Development
5. Warehouse
6. Detached Houses
7. Apartment Buildings
8. School
9. Mixed-Use Building
10. Performing Arts Center
11. Hotel/Convention Center
12. Major Boulevard
13. Commemorative Monument
Opposite page:

1. Entry Boulevard
2. Mixed-Use Building
3. Town Hall
4. Post Office
5. Houses
6. Town Square
7. Church
8. Mixed-Use Building
9. Detached Garage on Alley
10. Parking
11. Large House
12. Apartment Building
13. Rowhouse
14. Golf Course
Opposite page:

1. House
2. Church
3. Stores
4. Village Green
5. Meeting Hall
6. Apartment Building
7. Rowhouse
8. Hotel
Opposite page:

1. Apartment or Bed and Breakfast
2. Park
3. Infill, Detached Houses
4. Redesigned Major Street
5. Manatee Center
6. Moore’s Creek Restoration
7. Mixed-Use Buildings
8. Hotel
9. Parking
10. Main Street
11. Infill
12. Square
13. Library
14. Waterfront Apartment Buildings
15. Restored Theater
16. Courthouse
17. Mixed-Use Buildings
PREFERRED DEVELOPMENT FORM STRATEGIES

For the purposes of developing a preferred development form, strategies for the cities, towns and villages should focus on:

A. Redevelopment of existing urban areas.
B. New development.

Regional Goal 3.1

Revitalization and maintenance of complete cities, towns, and villages.

Indicator:

Number of revitalization and redevelopment plans adopted by local governments.

Strategy 3.1.1: Redevelop, revitalize and infill existing neighborhoods and districts.

Policy 3.1.1.1: The TCRPC should work with local governments and private citizens to prepare redevelopment and revitalization master plans for areas with an identified need (see Figure 1-16, 1-22).

Regional Goal 4.1

Future development should be part of existing or proposed cities, towns, or villages.

Indicator:

Number of local government comprehensive plans which utilize the City, Town and Village criteria.

Strategy 4.1.1: Determine the preferred components of a new city, town, or village (see Figure 1-18, 1-19, 1-20).

Policy 4.1.1.1: New towns can be defined by the following fundamental planning principles:

(1) New towns have a center and an edge;
(2) The center is usually defined by a public square or plaza with mixed-use buildings around it; the edge is defined by countryside;

(3) New towns are separated by countryside;

(4) New towns are composed of one or several neighborhoods and one or several districts;

(5) Neighborhoods and districts have a center and an edge;

(6) Neighborhoods and districts include a variety of uses and buildings types. Residential uses occur in all neighborhood and districts; and

(7) Neighborhoods may be primarily residential and districts may be primarily specialized in other uses.

**Strategy 4.1.2:** Determine preferred locations for new cities, towns and villages.

**Policy 4.1.2.1:** Local governments should determine preferred locations for new towns and prepare maps of such locations, if appropriate.

**Policy 4.1.2.2:** Local governments should facilitate the approval process of new town projects.

**Policy 4.1.2.3:** Urban design and architectural studies should be performed when evaluating development proposals. Such studies should analyze land use, building typology, street design, location of public and civic buildings and other appropriate topics.
3. **Districts and Neighborhoods**

**Districts**

Districts are well-defined areas within a city, town or village (see Figure 1-23). They have specialized uses. Districts may be predominantly commercial, such as a downtown; industrial; or educational, such as a university campus. However, a district needs other types of uses. For example, districts need places to eat. Often, inexpensive housing also fits well within a district.

**Neighborhoods**

Within each neighborhood, most of the activities of daily life can take place. There are houses and apartments, schools and playgrounds, churches and small scale stores, all located close enough to walk to them (see Figure 1-24). The buildings and the public spaces are designed in such a way that they complement each other.

Neighborhoods have the following elements:

1. **40 to 160 acres.**

Urban neighborhoods are walkable. Generally, a five-minute walk is considered a comfortable distance to travel on a regular basis. Therefore, the area of a neighborhood is defined by a five-minute walk radius from the geographical center. That radius circumscribes an area that can range from 40 to 160 acres. 160 acres, the maximum size, is a quarter section. Therefore, the walkable neighborhood fits well within the square mile grid which parcels out most of the land in the United States.

2. **An average gross density of four to ten units per acre.**

Neighborhoods are predominantly residential. A minimum residential density is necessary to support urban amenities. To have mass transit, public parks, neighborhood public schools, and some neighborhood commerce, the minimum residential density should be ten units per acre.

The number of dwelling units per acre is the average density. The neighborhood should contain a variety of residential building types. There should be single family houses on large lots and apartments at higher densities, but neither should overwhelm the character of the neighborhood.

Higher average densities may be appropriate for neighborhoods within larger cities. Densities lower than four to the acre may also create a good neighborhood if the surrounding densities are substantially higher. However, large areas developed at lower densities tend to become sprawl.

3. **A mixture of uses.**

A neighborhood is more than a residential area. Other uses, such as schools, day care, a small grocery store, a neighborhood pub, churches, playgrounds, etc., are indispensable for a good quality of life. They also promote self-containment, a feature which enhances the sense of community. Furthermore,
self-containment reduces the external impacts to the residents. For example, smaller arterial roads would be required because it would not be necessary to drive throughout the city to take care of the needs of daily life. A mixture of uses at the neighborhood level can reduce the cost of city-wide infrastructure, with considerable savings for the local tax payers.

4. A Center.

The most important physical feature of a neighborhood is the center. Every community needs a public space where all the residents are welcome. The neighborhood center is a small-scale open space, paved and landscaped to allow different activities. It is located in front of a school, a church, a commercial building or some other public structure. It has benches, pergolas, gazebos, drinking fountains and art work. It is the place where “chance meetings” occur, the place where a small memorial to a prominent resident would be built. It is the ideal location for neighborhood barbecues and festivals, the area to conduct the public life of the neighborhood. The great cities of the world have an intricate network of neighborhood greens and plazas at the center of each neighborhood. These safe and comfortable public spaces are never seen by tourists. Only the residents, and their friends, know them.

5. Civic sites, including a school.

Local civic buildings (i.e. neighborhood schools, churches, community centers, etc.) need prominent sites. Good locations include the termination of a street, the perimeter of the neighborhood center, the frontage of the neighborhood main street. These are special locations, and important buildings should occupy them. If public buildings and public spaces are designed together, the overall appearance of the neighborhood will be enhanced.

6. A variety of public spaces.

In addition to the neighborhood center, other public spaces are needed.

One type of space is the “Shouting-Distance Playground”. This is a small green space, maybe no larger than one lot, which has some playground equipment and is accessible to all the children in the vicinity. This small playground, which includes no sports fields and does not sponsor organized activities, is the place where very young children can play while a parent or grandparent watches, and where older children can learn the rudiments of sports with informal pickup games. This type of amenity is particularly needed in high density urban areas.

Another type of space is the park. This is a larger green which may not be located in every neighborhood, but which should be easily accessible from neighboring areas by foot or bicycle. The park may be the field of a school. It may also be a city facility. It is the place where organized sports can be played and observed. It has sports fields, seating areas, and support buildings with showers and bathrooms.

There is also a need to have well designed public areas in front of public buildings. They do not have to be large. A small front yard that defines and enhances the entrance into a church is sufficient. The public area marks the importance of the building and provides a public space to conduct open air activities.

Finally, the street must be viewed as a public space. Buildings and front yards must be well kept. Trees must shade the sidewalks and form a canopy above the pavement. Streets should have different treatments to create unique environments. This can be done by planting trees of distinct species on every street.
Each neighborhood may not have every type of public space, but the city as a whole must have all of them.

7. Streets for people, bicycles, buses and cars.

All modes of transportation must be encouraged, starting with walking. In neighborhoods, high-speed car or bicycle traffic is undesirable. Therefore, the streets must be redesigned with wide sidewalks, slow speed bike lanes, trees and narrow car travel lanes. Public transit must be encouraged. Traffic-calming techniques, such as roundabouts and textured pavements, should be studied for streets that carry excessive amounts of through-traffic. The resulting streets will be safer and more attractive.

8. Many separate distinct buildings.

Different uses require different buildings. A neighborhood plan must account for this, and must allow the incremental buildup of the neighborhood. If several small scale building types are allowed by the plan, a vital and beautiful neighborhood can be built. Large scale projects should be avoided.
Figure 1-23
CITY CENTER DISTRICT
Lake Worth, Palm Beach County
PREFERRED DEVELOPMENT FORM STRATEGIES

For the purposes of developing a preferred development form, strategies for the cities, towns and villages should focus on:

A. Redevelopment of existing urban areas.
B. New development.

Regional Goal 5.1

Redevelopment, revitalization and infill of existing neighborhoods and districts.

Indicator:

Number of neighborhood plans prepared by local governments.

Strategy 5.1.1: Identify distressed neighborhoods; and abandoned and underutilized districts and determine appropriate methods to improve them.

Policy 5.1.1.1: Prepare redevelopment and revitalization master plans for distressed urban neighborhoods and districts (see Figure 1-25). Such plans should analyze land use, building typology, street design, and other appropriate topics.

Policy 5.1.1.2: Redevelop obsolete retail/commercial centers within well-developed urban areas as an effort to discourage urban sprawl (see Figure 1-33, 1-34). Proposals for redevelopment may include the following site design features:

a. Design a fine network of streets that continues and enhances the establishment of the adjacent neighborhoods.

b. Include a mix of uses that complements the existing activities of the city, town or village.

Policy 5.1.1.3: Encourage development around transit stations (see Figure 1-26, 1-32). Proposals should:

a. Develop intense mixed-use projects within a quarter mile radius of the station.

b. Include a fine-grained network of streets detailed to optimize the comfort and safety of pedestrians and bicyclists.

c. Include high density residential areas, to enhance the feasibility of transit.
Charrette Proposal

Diagram

Figure 1-25
SOUTHWEST NEIGHBORHOOD CHARRETTE PROPOSAL
West Palm Beach, Palm Beach County
**Policy 5.1.1.4:** Encourage redevelopment of warehouse and industrial districts. Proposals should:

a. Develop well connected street grids that can be utilized by a variety of transportation modes, including bicycles and pedestrians.
b. Adopt building type guidelines that enhance the appearance of the district.

**Policy 5.1.1.5:** Encourage the creation of town centers (see Figure 1-29, 1-30, 1-31, 1-33, 1-34). Proposals should include:

a. A public green or square.
b. Public buildings.
c. Mixed-use private buildings.

**Policy 5.1.1.6:** Encourage the redevelopment and revitalization of historic main streets (see Figure 1-27, 1-28).

---

**Regional Goal 6.1**

Create new neighborhoods and communities.

**Indicator:**

Number of local governments which revise their land development regulations to encourage the development of neighborhoods and communities.

**Strategy 6.1.1:** Encourage the formation of sustainable neighborhoods and communities.

**Policy 6.1.1.1:** New neighborhoods and communities should contain a balanced, well-planned, compatible mix of land uses appropriately located so that State, local and regional goals are achieved.

**Policy 6.1.1.2:** New neighborhoods and communities should have compact designs, with a mix of building types.
Opposite Page:

1. Residential Infill Redevelopment
2. Olympus Avenue
3. Mixed-Use Redevelopment
4. Apartments
5. Shade Trees
6. Apartments / Office
7. Store
8. Arcade
9. A 1 A
10. A 1 A
11. Parking
Intersection of A 1 A and Olympus

Proposed Mixed-Use Building on A 1 A

Figure 1-27
HOBE SOUND
Martin County
Restored Theater on Opening Night

Typical Treatment

Main Street
City of Fort Pierce's Redevelopment and Revitalization Plan
Figure 1-30
CITY SQUARE
Conceptual Site Plan
Figure 1-33
TWIN CITY MALL AREA
Conceptual Development Proposal
Figure 1-34
TWIN CITY MALL AREA
Conceptual Development Proposal
4. BUILDING TYPES

A variety of residential building types is necessary within a well-planned neighborhood or district.

RESIDENTIAL BUILDING TYPES

There is a need to provide housing for many lifestyles and incomes. This is essential to maintain a good population balance that will encourage self-containment. There must be a place for the doctor and a place for the laborer. Some streets may be more expensive than others, but housing should not be segregated behind walls.

One of the unexpected advantages of a complete neighborhood is that children do not have to be bused to other areas, because neighborhood schools achieve a good population balance. Another advantage is that less affluent households can live closer to their work places and can spend less money on transportation. Therefore, complicated issues such as bussing and housing can be addressed indirectly through neighborhood planning. The solution to these issues may be found in the natural development of a well-designed neighborhood where many different building types coexist.

GARAGE APARTMENTS

For example, garage apartments, which have their own distinct entrance from the alleys, are a desirable housing type for a neighborhood. They are small scale and self policing, since they share the lot with a larger unit. They supply an excellent way to house elderly relatives, or to house students who may pay the rent by rendering baby sitting or lawn maintenance services. Garage apartments are also the least disruptive way to provide transients or seasonal residents with a safe and desirable place to stay. From the owners point of view, the income they generate may help a young couple afford a better home.

MIXED-USE

Often, buildings may have mixed uses. The ground floor could be predominantly retail and the upper stories residential. Sometimes, local regulations make it difficult to mix uses. This has a detrimental effect on the marketability of a project. The urban lifestyle that is achieved with such building types is an important selling point for a redevelopment project.
Opposite Page:

1. Proposed Courthouse
2. Historic Commercial Building
3. Improved Sidewalk
4. US 1
5. City Hall
6. Orange Avenue
7. Observation Tower
8. Classroom
9. Viewing Porch
10. Creek


Regional Goal 7.1

A variety of building types.

Indicator:

*Number of local governments which revise their land development regulations to allow for a range of building types.*

Strategy 7.1.1: Assure that development regulations allow an appropriate range of building types which meet the needs of the neighborhood or district.

Policy 7.1.1.1: Identify existing building types within a neighborhood or district and eliminate code constraints that prevent their renovation (see Figure 1-36, 1-37, 1-41, 1-42).

Policy 7.1.1.2: Allow small-lot, single family houses, well-designed multi-family buildings, and garage apartments (see Figure 1-38, 1-39, 1-40).

Policy 7.1.1.3: Identify needed public buildings and encourage their siting in prominent locations and a high architectural standard in their design (see Figure 1-35).

Policy 7.1.1.4: Urban design and architectural studies should be performed when evaluating residential and commercial projects. Such studies should analyze building typology and compatibility, land use mix and the overall impact of the project on the surrounding neighborhood or district (see Figure 1-36, 1-37, 1-41, 1-42).
Apartment Buildings

Detached House

BUILDING TYPES
Typical Neighborhood
Mixed-Use Buildings

Courtyard Apartment Buildings

BUILDING TYPES
Typical Higher Density Neighborhood
Figure 1-38
NEIGHBORHOOD FABRIC
Lake Worth Redevelopment and Revitalization Plan
Figure 1-40
SIDE YARD HOUSE
Floor Plans
Figure 1-41
BUILDING TYPES
New Town

Houses

Rowhouses

Building Type Location
A plan for development based on a preferred development form has a variety of benefits that transcend issues of community structure and design. Cities, towns and villages composed of neighborhoods and districts are the setting for the full-range of necessary human activities. The discussion of community structure and design is emphasized in the SRPP because it is the most effective method to plan for a better quality of life by providing an adequate setting and sufficient opportunity.

The principal benefit resulting from the implementation of the Preferred Development Form is the creation of places that function well and that fulfill the aspirations of its citizens. To facilitate this result, the vision includes additional planning strategies that focus on specific topics that should complement the preferred development form.

Additional strategies:

PUBLIC FACILITIES AND INFRASTRUCTURE

SUSTAINABILITY

ALTERNATIVE MODES OF TRANSPORTATION

ELDERLY AND HANDICAPPED

CHILDREN

AIR QUALITY

PUBLIC SAFETY

INCENTIVES FOR THE PRIVATE SECTOR

IMPLEMENTATION
PUBLIC FACILITIES AND INFRASTRUCTURE

One of the principal roles of public planning is the provision and maintenance of public facilities (roads, sewers, water, libraries, schools, etc.). The siting of public facilities has a powerful influence on land use and patterns of development. Development form directly affects the costs and efficiency of providing these services.

The Preferred Development Form is beneficial because:

1. It minimizes distances. Shorter infrastructure networks, for example, are less expensive to build and maintain.

2. It focuses customers in discrete areas, making the provision of services cost-effective. A water main that serves a typical single-family, detached neighborhood at a density of four dwelling units per-acre is cost-effective. An area that is sparsely developed at densities of one unit per-acre is expensive to serve with public water and may be too dense to guarantee the water quality of private wells.

3. It provides outstanding civic sites. A public library in the downtown district of a town, for example, would be within walking distance of many of its users and could be a prominent building that would enhance the appearance of the community (if it is located fronting a square or terminating a street). The same public library, if located on a suburban highway would not be as convenient for its users and would have a negligible architectural role (it would get lost in the clutter of sprawl).

In order to encourage the implementation of the “vision,” public infrastructure should be planned and financed in locations where it can help develop land in ways consistent with the policies of the plan. Unless the counties and municipalities target their public projects away from sprawl and towards cities, towns or villages (new or old), SRPP concepts will not be implementable.

Regional Goal 8.1

Public facilities which provide a high quality of life.

Indicator:

Changes in the ratio between investment in infrastructure in existing areas versus new areas.

Strategy 8.1.1: Provide levels of public services necessary to achieve a high quality of life, cost effectively.
Policy 8.1.1.1: All development should take place concurrent with or after the provision of necessary infrastructure and services.

Policy 8.1.1.2: Incentives should be made available to encourage development and/or redevelopment in areas where adequate facilities exist in order to maximize the use of those facilities and services.

Policy 8.1.1.3: Encourage patterns of development which minimize the public cost for providing services, maximize the use of existing service systems and facilities and take into full consideration environmental/physical limitations.

Policy 8.1.1.4: Develop local Capital Improvement Programs which maximize development of existing systems before allocating funds to support new public facilities in undeveloped areas.

Strategy 8.1.2: Encourage public investments that facilitate preferred forms of development.

Policy 8.1.2.1: Infrastructure should be planned and built to support and facilitate development of existing or proposed cities, towns and villages or their districts and neighborhoods.

Policy 8.1.2.2: Give high priority to restoring or establishing new public facilities only in areas that have been designated as locations that will be built following preferred development form principles.
Cities, towns and villages, because of their design characteristics, are more energy and water efficient and are built with less materials than other forms of development because:

1. They are compact and use resources efficiently. This is an important economic advantage, as development becomes more cost effective.

2. They encourage walking and bicycling, reducing the dependency on fossil fuels for transportation.

3. They are well planned and can be used by many generations. Towns, and many of their components, can be used for centuries. Investments made by residents through the years have a combined effect, as they build on past efforts. In addition, there is less need to open up new land for development, as the existing areas can be easily redeveloped.

---

**Regional Goal 9.1**

**Decreased vulnerability of the Region to fuel price increases and supply interruptions.**

**Indicator:**

*Number of local governments which adopt or revise land development regulations to promote sustainability and energy efficiency.*

*Number of local governments which adopt pedestrian and bicycle plans.*

**Strategy 9.1.1:** Reduce the Region’s reliance on fossil fuels.

**Policy 9.1.1.1:** Encourage patterns of development and programs which reduce dependency on the automobile, encourage and accommodate public transit, and reduce the overall use of fossil fuels.

**Policy 9.1.1.2:** Local land development regulations should include provisions addressing energy efficiency and conservation.

**Policy 9.1.1.3:** Encourage energy efficient buildings. Strategies should include: 1) proper siting according to solar orientation; b) design of passive architectural systems; c) site designs that provide shade to buildings; d) use of sustainable building materials; and e) use of solar mechanical systems.

**ALTERNATIVE MODES OF TRANSPORTATION**
One of the principal ideas behind the preferred development form is the provision of several alternative modes of transportation. A principal problem with recent development practices has been the focus on the automobile as the only practical mode of transportation. This has proved very expensive and has left some people (children, elderly, handicapped, poor, etc.) at a disadvantage.

The Preferred Development Form:

1. Accommodates the automobile.

2. Incorporates bicycle and pedestrian traffic and transit routes into the daily routine of each neighborhood and district.

---

**Regional Goal 10.1**

**Neighborhoods and communities which are served by a variety of transportation modes.**

**Indicator:**

*Change in the amount of pedestrian and bicycle traffic and transit routes and ridership.*

**Strategy 10.1.1:** Provide incentives to proposed development which will maximize pedestrian and bicycle traffic, and the provision of transit routes and transit ridership.

**Policy 10.1.1.1:** Plan and design development to effectively accommodate alternative modes of transportation.
THE ELDERLY AND THE HANDICAPPED

The elderly are at a disadvantage in poorly planned communities. The preferred development form provides a better environment for older residents because:

1. It provides safe and comfortable alternatives to the automobile. As people age, their driving ability diminishes. If a community provides transit and has well planned, shaded sidewalks, the elderly would be able to function better.

2. It provides a variety of housing types within each neighborhood. As housing needs change, people should be able to stay in their own neighborhood. A variety of building types (from the mansion to the garage apartment) allows a changing lifestyle without moving to another community.

3. It provides public facilities within walking distance, such as parks and community halls.

4. It provides safe streets and accessible buildings for the handicapped, as urban design details are prominently considered in the planning process.

Regional Goal 11.1

Elderly and handicapped residents who are independent and self-sufficient.

Indicator:

Number of local governments which adopt regulations which decrease barriers to housing and transportation for the elderly and handicapped.

Strategy 11.1.1: Encourage patterns of development and programs which:

1. Address the special housing needs of the elderly and handicapped.

2. Eliminate barriers to alternative housing concepts for the elderly and handicapped.

3. Increase the mobility of the elderly and the handicapped.

4. Recognize that the elderly are less mobile than the general population and that all neighborhoods where such persons may live must contain services and facilities conducive to elderly and handicapped access.
CHILDREN

Development form has an effect on a child’s quality of life. For example, when the exclusive practical form of transportation is the automobile (due to the distance between uses or to the layout of the streets), children cannot go to school, a park, the library or to visit friends by themselves. They must be driven. This affects the children and the driver. Time is wasted. An unnecessary dependency is established.

The preferred development form will be good for children because:

1. It provides adequate and safe facilities for walking and bicycling, which are the preferred modes of transportation for children.
2. It includes school and park sites within each neighborhood.

______________________________
Regional Goal 12.1

Improved independence and self-sufficiency of the children in the Region.

Indicator:

Number of local governments which adopt regulations or programs to address the independence and self-sufficiency of children.

Strategy 12.1.1: Encourage patterns of development and programs which improve the independence and self sufficiency of children.

Policy 12.1.1.1: Consider the special mobility needs of children in all development proposals.

Policy 12.1.1.2: Encourage the location and provision of schools, parks, recreational and other uses (e.g., retail, civic uses, etc.) within biking or walking distance.

Policy 12.1.1.3: Make available affordable housing alternatives for families with children in vicinity to schools and parks. Children should be allowed to access those facilities to the maximum extent feasible by sidewalk and bike path.

Policy 12.1.1.4: Provide sites for civic uses such as schools, parks and libraries within neighborhoods.
AIR QUALITY

Air pollution has been a problem in many parts of the region and cars are the main source of pollutants. The preferred development form provides the opportunity to:

1. Use cars less often, as other modes of transportation will be available for some trips.

2. Drive shorter lengths, as the general layout of cities, towns and villages will be more efficient.

As the Region develops following the concepts proposed by the Vision, the per capita emission of pollutants will decrease. In the most congested urban areas, the improvements will be significant.

---

Regional Goal 13.1

Maintenance of acceptable air quality levels.

Indicator:

Change in the levels of air quality based on federal standards.

Strategy 13.1.1: Encourage patterns of development and programs which minimize dependency on the automobile, encourage and accommodate public transit, and reduce vehicle miles traveled and the amount of vehicle emission discharged into the atmosphere.

Policy 13.1.1.1: Implement practices which minimize airborne dust and particulate emission.

Policy 13.1.1.2: Design efficient intersections and traffic light sequences which minimize idle time for automobiles.
PUBLIC SAFETY

Crime and public safety have become major planning issues. The preferred development form provides a safer environment for the Region’s residents because:

1. It emphasizes community structure. Many of the most troubled urban areas are also the most disjointed and poorly planned and managed. Careful consideration of the physical structure of a neighborhood or district helps in the prevention of crime. It also contributes to establishing a sense of pride and ownership throughout a community.

2. It emphasizes public spaces. Eyes on the street deter crime. Building streets instead of roads (in other words, complex spaces where various types of human interaction take place instead of simply traffic conveyers) increases the safety of an area. This is achieved with simple means: having the front of buildings towards the street, having appropriate uses and compatible building types, building wide shaded sidewalks that encourage pedestrian activity, etc.

3. It creates streets that are safer to use. Today’s highways are often dangerous, especially for pedestrians and bicyclists. By using appropriate design techniques, people can share a road regardless of their mode of transportation.

Regional Goal 14.1

Safe cities, towns and villages.

Indicator:

Change in the levels of crimes to property.

Strategy 14.1.1: Design and build neighborhoods and districts which emphasize: 1) informal surveillance of public spaces (streets, squares, parking areas and the like) by encouraging appropriate building types and building orientations, and 2) safe and calm streets, where pedestrians and bicyclists can share the space with automobiles.

Policy 14.1.1.1: Local law enforcement agencies should be consulted by local and regional land use officials when major building projects are proposed within their jurisdictions for their comments on the safety of the design and the adequacy of existing law enforcement resources to provide protection.

Policy 14.1.1.2: Police and fire station facilities should be integrated into neighborhoods and districts.

Policy 14.1.1.3: Support crime prevention efforts and programs which further the goals of the Strategic Regional Policy Plan.
INCENTIVES FOR THE PRIVATE SECTOR

The preferred development form provides examples of the type of growth that would be beneficial for the Region. The intent of the Strategic Regional Policy Plan’s vision is to:

1. Define in clear terms what types and patterns of development are desirable.
2. Provide strategies to make them possible.
3. Propose incentives to make them marketable.

No land owner should be required to develop land in conformance with the proposed ideal. Land owners should retain all rights and opportunities they have under adopted comprehensive plans. However, the Region should encourage the implementation of the preferred development form by demonstrating that the application of its concepts is very attractive.

---

Regional Goal 15.1

Preferred forms of development which result in downtown redevelopment and infill, the containment of suburban sprawl and the creation of new cities, towns, and villages.

Indicator:

Number of communities which adopt land development regulations which facilitate a preferred form of development.

Strategy 15.1.1: Identify and protect archeological and historical resources in the Region.

Policy 15.1.1.1: Incentive programs through local, State, and federal governments should be further developed to provide incentives to owners to protect known archeological or historical resources.

Policy 15.1.1.2: Encourage rehabilitation and adaptive reuse of historic properties when appropriate.

Policy 15.1.1.3: Fund historic preservation projects to help safeguard community heritage, contribute to the quality of life, revitalize older communities, and to promote local economic development and diversification.

Policy 15.1.1.4: Establish tax abatement ordinances that will grant tax abatement to qualified historic restoration properties.
Strategy 15.1.2: Develop revitalization, redevelopment and historical programs and resources.

Policy 15.1.2.1: Local governments should establish community redevelopment agencies, downtown development authorities, architectural review boards, and/or historic preservation boards as a means of protecting historical resources.

Policy 15.1.2.2: Encourage excellence in urban design and architecture in communities, especially in public buildings, in order to give future generations a sense of pride and feeling of importance in historic structures and resources.

Strategy 15.1.3: Provide appropriate financial and planning incentives to encourage preferred forms of development.

Policy 15.1.3.1: Increase the clarity of local land use plans so that preferred forms of development can be preapproved.

Policy 15.1.3.2: Increase public investment and assistance to foster infill, redevelopment, and refurbishing of infrastructure in existing urban areas.

Policy 15.1.3.3: Encourage the use of compact, mix-use development and redevelopment projects that are less costly to serve, have less impact to the natural environment, and help strengthen the economies of existing urban areas.

Policy 15.1.3.4: Give high priority to infill projects in order to assist in discouraging suburban sprawl and encouraging sustainable economic development.

Policy 15.1.3.5: Simplify and shorten the review process applying to infill, redevelopment, and preferred forms of development to the extent that the public’s health, safety and welfare are not compromised.

Policy 15.1.3.6: Assist developers in implementing infill, redevelopment and other preferred forms of development.

Policy 15.1.3.7: Develop concurrency provisions which support and encourage redevelopment, infill, and new development projects that meet preferred development form criteria.

Policy 15.1.3.8: Develop an impact fee structure which supports infill, redevelopment, and new development projects that meet preferred development form criteria.

Policy 15.1.3.9: Develop a tiered system of impact fees which recognizes cost differences of providing public services to development based on the size, type, form, location, and service demands of the development proposed.
Policy 15.1.3.10: Provide a menu of tax incentives to be offered to infill, redevelopment, and new development projects which follow preferred development form criteria.

Policy 15.1.3.11: Examine a more land value-based tax assessment system which increases assessments on land and lowers assessments on private buildings and improvements to encourage investment and economic opportunities within existing urban areas, reduce land speculation, and to contain sprawling, low-density, development patterns.

Policy 15.1.3.12: Coordinate land use planning and the provision of public facilities to assist the private sector in building preferred forms of development and to create infill and redevelopment opportunities.

Policy 15.1.3.13: Make non-preferred forms of development occurring in undeveloped areas responsible for the full and true infrastructure costs to support the development through buildout.
IMPLEMENTATION

The Regional Plan charts general strategies that, if deemed desirable by individual counties and municipalities, will be implemented at the local level. Implementation may require changes in local development regulations and some amendments to comprehensive plans, depending on the specific conditions and needs of each local government. Most often, such changes will be minor, as many of the ideas included in the Plan are found in local planning documents. Perhaps the two most powerful changes in policy direction that local and State government can make to help implement the vision are: 1) amend development regulations to allow and encourage preferred forms of development to occur; and 2) direct and focus public infrastructure projects and dollars to encourage, assist, and support efforts to plan and construct preferred forms of development. Unless positive changes are made in these areas the “vision” will not be implemented. Some possible changes along those lines should focus on:

1. Consolidation and simplification of land development regulations to encourage preferred forms of development.
2. Revision of future land use maps to better reflect each municipal “vision” of the future.
3. Encouraging a constructive and proactive site plan and building review process.
4. Preparation of infrastructure plans that support and facilitate preferred forms of development.
5. Identification by local governments of areas and opportunities for implementing preferred form of development.

Regional Goal 16.1

The formation of new towns, cities and villages.

Indicator:

The number of new towns, cities and villages developed utilizing the preferred development form.

Strategy 16.1.1: Encourage and facilitate preferred forms of development.

Policy 16.1.1.1: Local governments should identify appropriate locations for preferred forms of development.
Policy 16.1.1.2: Future land use plans should be prepared for locations considered appropriate for new towns, cities, and villages.

Policy 16.1.1.3: Review and revise land development regulations where appropriate to facilitate and allow for preferred forms of development.

Policy 16.1.1.4: Prepare and implement infrastructure plans that support and facilitate the formation of towns, cities and villages.

Strategy 16.1.2: Upon request, provide planning assistance to local governments that will encourage preferred forms of development.

Policy 16.1.2.1: Organize and staff planning and design charrettes.

Policy 16.1.2.2: Assist in the implementation of master plans and programs developed during the charrette process which have been adopted by the local government.

Policy 16.1.2.3: Assist in the review and rewrite of land development regulations, requested by local governments.

Policy 16.1.2.4: Assist in the review and redrawing of future land use maps, as requested by local governments.
Affordable Housing
2. Affordable Housing

A. Trends and Conditions

1. Introduction

Housing is obviously one of the most basic of human concerns. In the United States, the cost of housing is normally the largest item in the household budget. Persons of low-income and those just entering the work force have always had some difficulty with the affordability of housing. However, until about the last 20 years, the market price of housing and the purchase power of most people were such that most families could enter the housing market successfully (Keen, 1992).

During the last two decades, a combination of events and trends has resulted in a rift between market price of housing and purchase power. This rift has been caused by periods of rapid inflation and high interest rates, spiraling land costs, a preponderance of low density development patterns, shrinking real wages and other non-economic factors such as extensive building regulations and the demolition of many affordable apartments.

These trends have been particularly troublesome for those of lower incomes. Many lower income citizens are renters, and rents have risen faster than incomes. There is a large and growing gap between the cost of decent housing and household income, especially for those renter households. In fact, a 1989 national survey found that half of all poor rental households spend more than 50 percent of their annual income on housing costs, leaving little money for other essential needs (Dolbearne, 1991). For the very poor, this has resulted in overcrowded and substandard shelter conditions, or in homelessness.

a. The definition of affordable housing - In its most simple terms, affordable housing is that housing which the household could pay for and still have enough income remaining for the other basic necessities of life (i.e., food, clothing, transportation, etc.). "Textbook" definitions normally go one step further by defining a maximum proportion of income to be devoted to housing to meet the standard of affordability. The Florida Statutes define affordable as monthly rents or mortgage payments including taxes, insurance, and utilities, which do not exceed 30 percent of the amount which represents the percentage of median adjusted gross annual income for households classified as very low, low and moderate income.

b. Implications of the lack of affordable housing for neighborhoods and communities - Traditionally, people of all income ranges have lived throughout our communities. Although some neighborhoods had concentrations of families with similar incomes, very low, low and moderate income residents were often scattered throughout the community in a variety of apartments and older homes or homes of modest dimensions. (Jackson 1985).
The rift between housing price and earning power has complicated matters. Modern housing "developments" and subdivisions have resulted in large areas of housing of common style and price. In many cases, codes are passed which prevent alternatives such as accessory apartments, above garage apartments, or small detached units often known as cottage homes. Residents become segregated by income type.

As a result, young adults just entering the work force, young families, and the working poor are forced into units they cannot afford, or into substandard units. There becomes more competition for decent quality rental units, increasing the price, and forcing low-income families to pay too much of their income for shelter. Rental units and regulations which permit accessory apartments in the neighborhoods are often opposed by homeowners. Special needs households such as the elderly, the disabled, or farmworkers are most seriously affected.

To further complicate matters, a great deal of housing which was affordable to the low-income has been demolished as a result of various redevelopment and revitalization efforts in cities throughout the Region. A good deal of the housing removed was deteriorated or dilapidated. Efforts to revitalize downtown areas, by necessity, included the removal of many structures which had fallen below code standards. However, many redevelopment efforts consisted of the removal of existing housing units and the replacement with commercial structures or parking lots. These sometimes overzealous efforts left abandoned structures, vacant lots, and parking lots which are utilized only during the day. The results are well-known. Where downtowns were once busy, vibrant places during both day and night, they have become literally abandoned after 5:00 p.m. Deteriorated housing has been removed, but not replaced. The removal of such housing may, in fact, have simply been the final chapter in the abandonment of our downtowns...preceded by the loss of business and commercial establishments. More importantly, the construction and development of new housing units in the downtowns should be a foremost component of revitalization efforts if they are to be successful.

In summary, the apparent rift between the cost of housing and incomes has been further widened by development decisions (to build large expanses of single-type, similar price housing) and resistance to housing alternatives which might help alleviate the critical housing shortage for those of low and moderate-income.

c. Affordable Housing/State of Florida - In Florida, the issue of affordable housing is critical, despite the relative young age of the housing stock. In fact, some of the housing stock in Florida has aged to the point of needing substantial renovation or demolition. Statistically, Florida appears to produce enough housing units for its rapidly growing population, but not enough ownership and rental housing which is affordable to the very low, low and moderate-income.

In 1989-90, the annual median household income in Florida was $27,483, but the median value of an owner-occupied home was $77,100. The State has estimated that 60 percent of its very low-income households, 35 percent of its low-income households and 25
percent of its moderate-income households pay more than 30 percent of their income for housing (FDCA, 1995). A recent survey indicates that Floridians as a whole spend 38 percent of their income on housing. Looking at traditional data sources such as vacancy rates is of limited value in assessing the housing situation in Florida, because of the tremendous temporary or seasonal population, and the significant number of housing units which are used only occasionally or seasonally.

In response to the increasing concern over the lack of affordable housing, the Florida Legislature created an Affordable Housing Study Commission in 1986. Among the results of the study prepared by the Commission were that more than 2 million Floridians spend over 35 percent of their incomes on housing or live in substandard conditions. An estimated 600,000 housing units were in need of rehabilitation or demolition.

In 1985, the newly adopted State Comprehensive Plan decreed that "the public and private sectors shall increase the affordability and availability of housing for low and moderate income persons." Rules adopted by the State (Chapter 9J-5, FAC) which guided the preparation of local government comprehensive plans indicate that local governments must make provisions for affordable housing for their current and future populations. Under these rules, local governments are to consider using public/private partnerships, improving regulatory and permitting processes, using federal, State and local subsidy programs, and establishing principles and criteria guiding the location of housing for needy groups in order to better address affordable housing needs.

In 1990, the State Legislature pledged that decent and affordable housing would be available for all of its residents by the year 2010. Yet, safe and affordable housing remained out-of-reach of many Florida families. Finally, in July of 1992, the Florida Legislature passed the William E. Sadowski Affordable Housing Act, in a landmark effort to stimulate the production of affordable housing. A primary component of the Act was the State Housing Initiative Partnership (SHIP) Program. This program provides funds, from a dedicated funding source, to local governments as an incentive to create public/private partnerships to produce and preserve affordable housing. Implemented through a Local Housing Assistance Program, SHIP requires the creation of an affordable housing trust fund and an affordable housing advisory committee which prepares a local housing incentive plan. Funds can be utilized to implement the local housing assistance program, to enhance funding of other State housing programs, to provide the local match for federal housing programs, and to fund emergency repairs under weatherization assistance provisions. Funds cannot be used for rent subsidies or debt service.

d. Conclusion - Affordable housing is an issue throughout the nation. The 1990 U.S. Census results indicate that 50 percent of American families and 91 percent of renters cannot afford a median priced home in their community (Keen, 1992). Families are overburdened with the cost of housing, especially those households with incomes below the median.

2. Past and Existing Conditions
Population increase has been dramatic. The ability to adequately house the population of the State and the Region has been affected by Florida's tremendous growth. Between 1970 and 1990, the State's population nearly doubled from 6.8 million to 12.9 million. The Treasure Coast Region's population grew at an even faster rate during the same period; nearly tripling in size from 464,000 to 1.2 million. Such explosive growth has made the timely provision of housing very difficult.

Consistent with a 20-year trend, the average household size continues to decline (see Table 2.1). Thus, the increase in the number of households has been even more rapid than would be expected based on population growth.

**TABLE 2.1**

Household Size and the Elderly
Treasure Coast Region

<table>
<thead>
<tr>
<th></th>
<th>Average Size of Household</th>
<th>% of Population 65 and Over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River</td>
<td>2.49</td>
<td>2.33</td>
</tr>
<tr>
<td>Martin</td>
<td>2.40</td>
<td>2.28</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>2.42</td>
<td>2.32</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>2.65</td>
<td>2.54</td>
</tr>
<tr>
<td>Florida</td>
<td>2.55</td>
<td>2.46</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>2.76</td>
<td>2.63</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau

Part of the reason for the declining household size in the Treasure Coast Region is as a result of the large influx of retirees to the Region. Many of these retirees comprise one or two person households. As Table 2.1 indicates, all Treasure Coast Counties significantly exceed the State in the proportion of citizens over the age of 65. The proportion has increased substantially in each County between 1980 and 1990.

a. **Characteristics of the housing stock** - As the population has increased, the number of housing units has grown rapidly. The State increased its housing stock from 4.4 million units in 1980 to 6.1 million in 1990, an increase of 39 percent. The Region's housing stock increased 59 percent, from 400,000 units in 1980 to 637,000 in 1990.

Table 2.2 summarizes some of the general characteristics of housing units in the Treasure Coast Region.

**TABLE 2.2**

Selected Housing and Household Characteristics
The Counties in the Region share a number of similarities relative to their housing stock. All Counties in the Region have a much higher proportion of owner-occupied units than does the State as a whole, although Martin and Indian River Counties are particularly high in that respect. Consequently, all counties are significantly lower than the State average in the proportion of units which are renter-occupied. Again, Indian River and Martin Counties are particularly low in terms of renter-occupied units.

The Counties are also different in many respects. Palm Beach County has a much lower proportion of their housing stock in single-family detached units than the other counties. Palm Beach also has a significantly smaller percentage of mobile homes (5.7 percent of its housing stock) than do the other three counties, which all have a larger proportion of mobile homes to all dwelling units than does the State as a whole (Table 2.3).
TABLE 2.3

Occupancy Status of Occupied Housing Units

<table>
<thead>
<tr>
<th></th>
<th>Owner-Occupied</th>
<th>Renter-Occupied</th>
<th>Mobile Home or Trailer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River</td>
<td>75.1</td>
<td>25.0</td>
<td>15.2</td>
</tr>
<tr>
<td>Martin</td>
<td>76.9</td>
<td>23.1</td>
<td>15.1</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>71.9</td>
<td>28.1</td>
<td>5.7</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>71.9</td>
<td>28.1</td>
<td>16.3</td>
</tr>
<tr>
<td>State</td>
<td>67.2</td>
<td>32.8</td>
<td>12.5</td>
</tr>
</tbody>
</table>

Source: 1990 U.S. Census

The age of the housing stock is also significantly different in the Treasure Coast Region. In the State as a whole, 35 percent of the housing stock was built between 1980 and 1990. Treasure Coast counties vary between 41.6 percent in Palm Beach County to 49.7 percent in St. Lucie County (see Table 2.4).

TABLE 2.4

Age of Housing Stock

<table>
<thead>
<tr>
<th></th>
<th>% of All Housing Units Constructed 1980-1990</th>
<th>Constructed Before 1939</th>
<th>Median Age of Housing Units (yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River</td>
<td>44.3</td>
<td>2.7</td>
<td>17–</td>
</tr>
<tr>
<td>Martin</td>
<td>43.1</td>
<td>2.2</td>
<td>17</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>41.6</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>49.7</td>
<td>2.3</td>
<td>15</td>
</tr>
<tr>
<td>State</td>
<td>35.0</td>
<td>3.7</td>
<td>36</td>
</tr>
</tbody>
</table>

Source: 1990 U.S. Census

b. Income characteristics - General statistics suggest that the residents of the Treasure Coast Region have among the highest average incomes in the entire State. In 1989, Treasure Coast Counties ranked 4th (Palm Beach), 5th (Martin), 13th (Indian River) and 19th (St. Lucie) of the 67 Florida counties in median household income. The counties ranked 1st (Palm Beach), 2nd (Martin), 5th (Indian River), and 32nd (St. Lucie) in per capita personal income in 1992. As would be expected, Treasure Coast counties are well below the State average (9%) in the percentage of families below the property level.

Table 2.5 presents a series of selected housing and income characteristics which show how variable the income and housing value figures can be within a geographical area.
What the Table does not show is the great variability within a single municipality. For Census Tracts in unincorporated Palm Beach County for instance, median value of owner-occupied housing units varies from a low of $36,400 to a high of over $500,000; and in the City of Boca Raton, median housing value by Census Tract varies from $107,300 to $462,900.

**TABLE 2.5**

Selected Housing and Income Characteristics, 1990

<table>
<thead>
<tr>
<th>Location</th>
<th>Population 1990</th>
<th>% of Units Owner Occupied</th>
<th>Median Value of Owner Occupied Units</th>
<th>Mean Contract Rent</th>
<th>Median Family Income</th>
<th>% Families Below Poverty Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fort Pierce MSA</td>
<td>251,071</td>
<td>74.0</td>
<td>82,400</td>
<td>432</td>
<td>33,541</td>
<td>7.1</td>
</tr>
<tr>
<td>Martin County</td>
<td>100,900</td>
<td>76.9</td>
<td>112,700</td>
<td>470</td>
<td>37,732</td>
<td>5.0</td>
</tr>
<tr>
<td>Stuart</td>
<td>11,936</td>
<td>64.5</td>
<td>76,100</td>
<td>453</td>
<td>33,500</td>
<td>6.3</td>
</tr>
<tr>
<td>St. Lucie Co.</td>
<td>150,171</td>
<td>71.9</td>
<td>73,300</td>
<td>409</td>
<td>31,226</td>
<td>8.5</td>
</tr>
<tr>
<td>Fort Pierce</td>
<td>36,830</td>
<td>51.8</td>
<td>55,100</td>
<td>316</td>
<td>22,601</td>
<td>20.1</td>
</tr>
<tr>
<td>Port St. Lucie</td>
<td>55,761</td>
<td>76.4</td>
<td>78,900</td>
<td>527</td>
<td>34,634</td>
<td>4.2</td>
</tr>
<tr>
<td>West Palm/Boca/ Delray MSA</td>
<td>863,503</td>
<td>71.9</td>
<td>98,100</td>
<td>530</td>
<td>38,539</td>
<td>6.2</td>
</tr>
<tr>
<td>Belle Glade</td>
<td>17,249</td>
<td>37.1</td>
<td>59,700</td>
<td>253</td>
<td>24,692</td>
<td>25.5</td>
</tr>
<tr>
<td>Boca Raton</td>
<td>64,818</td>
<td>74.5</td>
<td>165,300</td>
<td>626</td>
<td>53,544</td>
<td>3.6</td>
</tr>
<tr>
<td>Boynton Beach</td>
<td>48,428</td>
<td>76.5</td>
<td>78,400</td>
<td>527</td>
<td>34,186</td>
<td>6.2</td>
</tr>
<tr>
<td>Delray Beach</td>
<td>48,644</td>
<td>70.3</td>
<td>92,100</td>
<td>530</td>
<td>36,191</td>
<td>7.5</td>
</tr>
<tr>
<td>Greenacres</td>
<td>22,385</td>
<td>64.8</td>
<td>68,800</td>
<td>528</td>
<td>32,634</td>
<td>4.6</td>
</tr>
<tr>
<td>Jupiter</td>
<td>27,291</td>
<td>71.8</td>
<td>111,500</td>
<td>672</td>
<td>42,244</td>
<td>3.9</td>
</tr>
<tr>
<td>Lake Worth</td>
<td>28,327</td>
<td>55.6</td>
<td>66,500</td>
<td>393</td>
<td>25,010</td>
<td>13.6</td>
</tr>
<tr>
<td>Palm Beach Gardens</td>
<td>28,635</td>
<td>74.0</td>
<td>137,700</td>
<td>698</td>
<td>51,654</td>
<td>3.5</td>
</tr>
<tr>
<td>Riviera Beach</td>
<td>27,308</td>
<td>58.6</td>
<td>61,300</td>
<td>414</td>
<td>26,990</td>
<td>17.9</td>
</tr>
<tr>
<td>Royal Palm Beach</td>
<td>16,546</td>
<td>85.4</td>
<td>90,900</td>
<td>632</td>
<td>42,787</td>
<td>1.7</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>68,008</td>
<td>50.3</td>
<td>71,600</td>
<td>453</td>
<td>30,981</td>
<td>12.7</td>
</tr>
<tr>
<td>Indian River Co.</td>
<td>90,208</td>
<td>75.0</td>
<td>77,800</td>
<td>462</td>
<td>33,569</td>
<td>5.9</td>
</tr>
<tr>
<td>Sebastian</td>
<td>12,154</td>
<td>82.2</td>
<td>68,200</td>
<td>449</td>
<td>29,464</td>
<td>4.6</td>
</tr>
<tr>
<td>Vero Beach</td>
<td>17,404</td>
<td>62.1</td>
<td>104,300</td>
<td>331</td>
<td>35,268</td>
<td>6.2</td>
</tr>
</tbody>
</table>

Source: U.S Census Bureau

Despite the high per capita and median family income figures for the Region, perhaps the most revealing statistic is the number of very low-income residents. Very low-income residents are generally characterized as those who earn less than 50 percent of the median median income.
household income for the area. Between 20 and 25 percent of the households of each Treasure Coast county fall into this low-income category. These are the residents who cannot enter the housing market without a significant amount of assistance.

3. Recent Trends

Income and housing costs in the Region have been steadily increasing. Table 2.6 documents the tremendous increase in both income and the cost of housing in the Region in the last 10 years. This increase is most pronounced in Martin County where both median family income and the median value of an owner-occupied housing unit more than doubled in the ten-year period. What the Table does not show, but it does suggest, is the difficulty for the lowest income people to secure affordable housing. The difficulty is suggested by the increase in median contract rent which has sky-rocketed in the last ten years.

**TABLE 2.6**
Income, Housing Value, Rent

<table>
<thead>
<tr>
<th></th>
<th>Indian River</th>
<th>Martin</th>
<th>Palm Beach</th>
<th>St. Lucie</th>
<th>Florida</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Family Income (1979)</td>
<td>17,607</td>
<td>18,311</td>
<td>19,917</td>
<td>15,884</td>
<td>17,280</td>
</tr>
<tr>
<td>Median Family Income (1989)</td>
<td>33,569</td>
<td>37,732</td>
<td>38,537</td>
<td>31,226</td>
<td>32,212</td>
</tr>
<tr>
<td>% Change</td>
<td>90.7</td>
<td>106.1</td>
<td>93.5</td>
<td>96.6</td>
<td>86.4</td>
</tr>
<tr>
<td>Median Value Owner-Occupied Unit (1980)</td>
<td>46,000</td>
<td>53,200</td>
<td>55,300</td>
<td>44,100</td>
<td>45,100</td>
</tr>
<tr>
<td>Median Value Owner-Occupied Unit (1990)</td>
<td>77,800</td>
<td>112,700</td>
<td>98,100</td>
<td>73,300</td>
<td>76,000</td>
</tr>
<tr>
<td>% Change</td>
<td>69.1</td>
<td>111.8</td>
<td>77.4</td>
<td>66.2</td>
<td>68.5</td>
</tr>
<tr>
<td>Median Contract Rent (1980)</td>
<td>212</td>
<td>233</td>
<td>234</td>
<td>188</td>
<td>208</td>
</tr>
<tr>
<td>Median Contract Rent (1990)</td>
<td>419</td>
<td>441</td>
<td>499</td>
<td>409</td>
<td>402</td>
</tr>
<tr>
<td>% Change</td>
<td>97.6</td>
<td>89.3</td>
<td>113.2</td>
<td>117.6</td>
<td>93.3</td>
</tr>
</tbody>
</table>

Source: U. S. Census Bureau

Not only do the very low- and low-income residents of the Region have a great deal of difficulty entering the housing market; but moderate-income residents do as well. According to information recently received from the National Builder's Association, a median-income ($38,700) family in the Fort Pierce Metropolitan area (MSA) could afford to purchase only 77 percent of all homes sold in the last quarter of 1994 (average home sold - $78,000). In the West Palm Beach-Boca Raton-Delray MSA, a median income family ($44,500) could purchase only 67 percent of the homes sold in the quarter (average home sold - $108,000).
a. **Perspective from local officials** - As part of the effort to prepare this regional plan, local elected officials from throughout the Region were interviewed during 1994 to gather information on the key issues in the Region and how they should be addressed. Comments and concerns from those interviews were consolidated into a draft summary document in February of 1995. Within the general subject area of Housing/Community Development, the following issues were identified or opinions rendered:

1) **Urban development/design** - There are a number of older communities in the Region which contain a wide variety of building types and land uses, but recent development has been dominated by large areas which contain single uses. Developers should be required to provide a variety of housing types. A good ratio of rental/home ownership is needed for a well-balanced community. We should provide incentives for the infill and redevelopment of coastal cities. Although the development of "walled" communities has not produced healthy, balanced communities, they remain in great demand because of the real or perceived security they provide. The security of a neighborhood is very important to its residents.

2) **Affordable housing** - There must be a cooperative effort between counties and cities to address affordable housing issues. The definition of affordable housing is a matter of interpretation. The Region has enough affordable housing, but there are shortages in certain areas. Housing assistance programs are available for homeowners, but not for renters. There is a severe shortage of rental units in many areas, especially for young professionals. Not everyone can or should own their own home. There is generally little variety to the housing stock in many areas. Codes need to be more flexible to allow alternative and affordable housing units such as "granny flats." There is a need for special housing for migrant agricultural workers, but Federal regulations make it too expensive for the agricultural industry to supply such housing. Some communities ignore their responsibility to address the need for a variety of affordable housing because housing for the low- and moderate-income is available in a nearby community. However, there are areas of the Region where it is difficult for the private sector to profitably provide housing in certain price ranges due to a surplus of such housing in a nearby community.

b. **Existing housing programs** - The passage of the William E. Sadowski Affordable Housing Act, which was summarized previously, has provided the opportunity for every county and many cities in the State to create or expand an Affordable Housing Program. The State Housing Initiative Partnership (SHIP) Program is the centerpiece of the 1992 Housing Act, and provides funding to all counties and Community Development Block Grant entitlement cities. The State has, however, a number of additional funding programs to assist in the provision of affordable housing. Examples of these programs include:

- State Apartment Incentive Loan (SAIL)
- Home Investment Partnerships
- Low-Income Rental Housing Tax Credit (LIHTC)
- Single-Family Mortgage Revenue Bond Program
- Florida Home Ownership Assistance Program (HAP)
- First Time Homebuyers Bond Program
- Rental Housing Bond Program
- State Guarantee Fund Program

The SHIP Program has also enabled communities in Florida to be more active in pursuing federal funds from programs such as HOPE (Home Ownership for People Everywhere) and HOME (Home Investment Partnership Program).

There are numerous examples in Florida and in the nation of communities which have been very creative in approaching the issue of affordable housing. Prior to SHIP, Dade County used a special legislative act to create a special housing trust fund utilized as a revolving loan fund and to counsel participating families. In Columbus, Ohio, a partnership was established between local lending institutions and churches which encourages low-income residents to become home owners.

In the Treasure Coast Region, each County has now implemented an Affordable Housing Program utilizing SHIP funding. The Cities of Boca Raton, Delray Beach, Fort Pierce, Port St. Lucie and West Palm Beach also receive SHIP funding as entitlement cities. Although several cities in the Region have been involved in federal housing programs (public housing and rent subsidies) via local housing authorities for some time, counties (with the exception of Palm Beach) in the Treasure Coast Region have not previously had affordable housing programs.

c. **Local affordable housing programs** - As part of the research into affordable housing issues, county officials/personnel were interviewed to determine the history and present status of housing programs. Palm Beach was the only county with a comprehensive affordable housing program prior to the passage of the Sadowski Act. Several city housing authorities and the Palm Beach County Housing Authority had, however, been in existence for some time in response to federal housing initiatives for public housing and rental assistance programs. Of the four counties, only Palm Beach County has been an active Community Development Block Grant (CDBG) participant for a number of years. St. Lucie County has been a participant for the past two years. Many of the local governments in Palm Beach County signed an interlocal agreement which allows the County to address affordable housing on an areawide basis.

No local funding was provided to affordable housing programs prior to the Sadowski Act in the northern three counties, except for the utilization of discretionary "district funds" by a Martin County Commissioner for housing in the Indiantown area. Palm Beach County's Comprehensive Plan requires a minimum contribution of $1 million per year to the County Housing Trust Fund. The County has contributed a significant amount of local funds to affordable housing including an initial $12 million in 1986 for a Glades Housing Program.
All counties currently receive SHIP funding and have either created a program as a result of the funding or utilized it to supplement an existing program (Palm Beach). SHIP funds can be utilized for a number of purposes including new construction, down payment assistance, rehabilitation, land acquisition, impact fee loans, closing cost loans, and funding for community based organizations to provide housing. Each County offers a wide range of assistance, but based on interviews during early 1995, some counties have decided to focus their funds on certain activities such as downpayment assistance (St. Lucie County) or rehabilitation (Martin County). CDBG entitlement cities in the Region (Boca Raton, Delray Beach, Fort Pierce, Port St. Lucie, West Palm Beach) also receive SHIP funding and may create their own program or enter into an interlocal agreement with their County. All cities in the Region have at this time elected to operate an independent program.

Each of the counties has decided to focus on home ownership. Indian River County also has $3.7 million available from a Revenue Bond Program originally established by Escambia County. Martin County focuses almost exclusively on home ownership, and indicated that rental projects are difficult to administer because of income verification requirements. Palm Beach also emphasizes home ownership and is very active in the Federal HOME Program. St. Lucie utilizes 100 percent of its SHIP funds for home ownership.

Although SHIP guidelines permit the utilization of some program funds for housing for the moderate-income (defined as those with incomes between 80 percent and 120 percent of the median family income for the area), both Martin and Palm Beach Counties will utilize 100 percent of their program funds for the very low-income (up to 50 percent of the median family income for the area) and low-income (50-80 percent of the median family-income for the area). Both Palm Beach and Indian River Counties have established a maximum home price for their program. Indian River indicates that they will provide a very limited eligibility for the moderate-income. St. Lucie County will stay within the program guidelines which provide eligibility for very low, low and moderate-income families.

The subject of streamlining of development regulations is frequently raised as a method of reducing the cost of housing. Indian River and Palm Beach Counties have instituted a regulatory efficiency program intended to reduce front-end costs of housing development. The need to allow accessory residential units (accessory apartments, above garage apartments, cottage homes, etc.) in residential areas has been identified as another effective means of providing affordable housing. None of the counties have moved aggressively to permit such units in residential areas. Martin County is presently considering code revisions to permit accessory units. Accessory units are generally not permitted in Palm Beach and St. Lucie Counties. Indian River County now allows accessory units in all residential and agricultural areas via an administrative permit process. None of the counties has any special incentive or incentive program to promote the development of rental housing, nor do they have any program to combat NIMBYISM ("not in my back yard" syndrome), although each acknowledges that it is a problem in the
siting of rental housing. Palm Beach County has a comprehensive plan policy which acknowledges the problem of NIMBYISM.

Relative to incentives for the development of low-income housing, Indian River, Martin and Palm Beach County have voluntary density bonus provisions. In Martin County, impact fees can be deferred for units that are designated for very low or low income households for one year or until the issuance of the certificate of occupancy. Indian River County has loan funds available for impact fees. Martin County sets a reduced rate for utility connection fees. Palm Beach County has special traffic concurrency standards for affordable housing projects.

Key affordable housing problems as identified by local officials/staff are:

- difficulty that low-income residents have in paying the downpayment, closing costs and impact fees;

- high market costs/conditions prevent the development of housing affordable to the low-income;

- the difficulty of providing affordable housing in areas where land values are extremely high. It is acknowledged that land costs for housing are extremely high in many areas of the Region, even for the provision of housing for the moderate income. Costs have become almost prohibitive in certain areas; such as barrier islands;

- the scarcity of non-profit sponsor organizations and for profit entities interested in developing affordable housing;

- the shortage of program funds;

- lack of economic development, jobs;

- public perception of lack of need for affordable housing.

Problems which are not being adequately addressed according to these same people include the lack of good paying jobs, the lack of rental housing, negative public perception of housing programs, and the lack of public understanding of the need for affordable housing. Only two issues were mentioned in response to the question of what housing issues the regional plan should address: farmworker housing, and the need to emphasize the differences in communities (demographics, level of urbanization, etc.) when discussing the problem of affordable housing.

None of the counties indicated that the issue of housing in proximity to employment and services was a significant local issue. However, Indian River County may encourage affordable housing development in the vicinity of its I-95 interchanges since the County has installed public facilities (sewer and water) in each area and anticipates that the
majority of new jobs will be generated at these locations. Martin County indicates that housing for very low, low and moderate income residents is difficult to provide, because of high land costs, lack of available sites, lack of experience or willingness to develop affordable housing by all sectors, nimbysim and the location of a large amount of such housing in the adjacent City of Port St. Lucie.

Finally, local officials/staff provided some common perceptions/feelings of their residents. These were:

- that community-based organizations, not the local government, should take care of people in need;
- that public sector involvement in the development of affordable housing has a negative perception because it is considered synonymous with public housing projects for welfare recipients;
- that there is a significant taxpayer residence/backlash against supplying every need (including housing) for those who will not help themselves; and
- that the private sector should take the primary responsibility for the provision of housing, and that the County government should not own land or build housing.

d. Conclusion - Relative to the issue of affordable housing, the following problems face the Treasure Coast Region at this time:

1) rapid population growth has stressed the ability of the private sector to provide a range of affordable housing concurrent with need. A great number of the migrants to the Region are the elderly, and Caribbean migrants, both of which have different needs/desires for housing type and location (South Florida Regional Planning Council, 1995, Office of Rural Health, 1994);

2) the cost of housing in much of the Region is much higher than the ability of persons employed in the Region to pay. Speculation and regulations have driven the price of land up and much of the new housing supply caters to wealthy retirees moving from other areas of the U.S. and other nations;

3) an increasing proportion of the population earns low wages. The most dynamic portion of the economy is the service sector, which generates a large number of low-paying jobs (U. S. Census Bureau, 1993, Florida Department of Labor and Employment Security, 1995);

4) there is a lack of rental housing of alternative types for low-income residents. This has led to overcrowding and even to homelessness although the shortage is not well documented statistically, the shortage appears to be more serious in some
areas than others. There is little interest from the private sector in building rental housing for the low and moderate income market, apparently due to the lack of profitability and nimbysism;

5) there is a lack of housing in proximity to employment opportunities. As a result, transportation costs increase and residents have less income available to pay for housing;

6) special needs groups (i.e., agricultural workers, low-income migrants, the elderly) have great difficulty finding adequate housing;

7) the private sector, considered the appropriate vehicle for the provision of housing, is not providing enough housing for low-income residents. Part of the reason for this is the high cost of land and construction, but part is also due to unnecessary regulatory barriers and the lack of incentives to produce such housing from the public sector; and

8) there is a great deal of public opposition to the siting of subsidized housing and to rental housing, in general.

**B. Important Regional Issues**

1. **Increasing the Number of Affordable Housing Units**

   As the earlier sections of this element suggest, there is an inadequate match between income levels and housing price in this Region. Many very low, low and moderate income residents cannot afford safe and decent housing and still have sufficient money to meet other basic needs.

   There is a great and growing public reluctance to address the affordability housing need by providing traditional “public housing”. There is also a strong preference for housing to be provided exclusively by the private sector. It is well documented, however, that without significant incentives, the private sector cannot build housing which is affordable to the Region’s lower income groups. Therefore, there must be a strong commitment by local government to work with the private sector, in a partnership, utilizing a variety of strategies, if affordable housing is to become available to working citizens of our communities.

2. **Providing Housing in Proximity to Employment and Essential Services**

   An important factor which makes the existing housing stock less affordable to the general public is the money a family must budget to cover transportation costs. Income which might have been available to spend on housing must instead be spent to maintain and operate automobiles. Today's sprawling development patterns not only increase the cost of housing, but make multiple car ownership a prerequisite to survival, thus reducing the money available to pay for housing.
In 1935, transportation costs accounted for only 5.9 percent of the family's budget and ranked well behind a family's expenditures for food, clothing, and shelter. Today, household expenditures for transportation are nearly 25 percent of the family budget, with many households allocating more for private transportation than they do for food or shelter (Jacobs, 1990). Expenditures for transportation have increased as a result of sprawl. The average family now has less money to spend on housing, in part, because of unnecessarily excessive transportation costs. This prevents access to a wider range of housing that would otherwise be affordable.

In 1993, there were nearly 11.2 million registered vehicles in the State (BEBR, 1994). With a population of 13.6 million, this suggests that there is nearly one vehicle for every person. If a family could eliminate the need for one vehicle, this would increase its buying power to the point where they could afford a much more expensive home. For example, it is estimated that owning and operating an automobile an average of 10,000 miles per year costs the owner an average of $5,062 per year (nationwide tests included Ford Escort, Chevrolet Caprice, and Ford Taurus) (AAA 1995). At 8 percent, a 30-year mortgage of $55,000 can be retired for $5,000 per year. A family that could only afford a $50,000 mortgage would be able to afford a $105,000 mortgage, if only they could eliminate the need for one automobile. Because of the patterns of development that have occurred, most families are precluded from this option and have little choice in the matter.

The development patterns which have prevailed over the last few decades have created places to live that require the maintenance of multiple cars per family and that almost everything requires a car to reach. This trend has: 1) set the family's transportation budget; 2) limited choices and opportunities to purchase high quality housing, and 3) failed to produce an adequate supply of affordable housing. It also has required a disproportionate amount of taxpayer money to be spent on road building that could be used elsewhere (e.g., housing, education, etc.) and has interfered with developing any sort of mass transit system that could relieve families and individuals of some of the drain on their budgets.

The development patterns of today are not the products of laissez-faire. They are the direct result of public land use, fiscal and transportation policy which has encouraged and subsidized low density, sprawling development patterns. At the federal policy level, federal tax code encourages businesses to abandon old structures often well before the end of their useful life by permitting greater tax benefits for new construction than for rehabilitation of existing buildings. In this way, government subsidizes an acceleration in the rate at which economic activity is dispersed to new peripheral locations.

The Federal Highway Act of 1916 and the Interstate Highway Act of 1956 moved the government towards a transportation policy emphasizing and benefiting the road, the truck, and private automobile. In conjunction with cheap fuel and affordable automobiles, the interstates and expressways led to low marginal transportation costs and greatly stimulated decentralization of the population. Discriminatory lending and
appraisal practices and policies of the Federal Housing Administration between 1933 until the late 1960s clearly favored homogeneous subdivisions over urban, aging or heterogeneous neighborhoods. Thus, “the main beneficiary of the 119 billion in FHA mortgage insurance issued in the first four decades of FHA operation was suburbia, where almost half of all housing could claim FHA or VA financing in the 1950s and 1960s.” (Jackson, 1985). This, along with federal income tax incentives to detached home living provided by the deduction of mortgage interest and real estate taxes have had a large impact on the sprawling spatial patterns of metropolitan areas.

On the State and local level the potential for influence is also significant. Since the early 1900s local zoning and building regulations have increasingly imposed requirements which encouraged decentralization and new subdivisions disconnected from established towns and cities. For example, zoning codes which encouraged and required excessive separation of residential and non residential land uses, wide streets and curb radii, large lots, building setbacks, and parking requirements, large minimum square foot requirements for housing units, as well as restrictions against on street parking, residential units above commercial use and residential outbuildings have all played an important role in accelerating suburban development. Land use planning at the local level for the last 30-40 years has also provided direction in favor of low-density suburban development patterns by designating and organizing land on the periphery not for new towns or cities, but as large expenses of homogenous areas. Finally, the concept of growth management by “concurrency” has had the unintended effect of dispersing new development to less urbanized locations in search of remaining roadway capacity.

Changes in family spending, especially for transportation, arguably has had a significant affect on the quantity of housing units that are affordable to the general public. Public policy has played an important role in affecting the family budget in the area of transportation through its treatment of land use issues. Fortunately, transportation and land use are areas where public policy can make a real difference in reducing the amount of money we must spend on vehicle expenses, simply by giving people viable choices for reducing their dependency on the automobile.

Efforts need to be made to encourage development patterns which do not require an automobile to accomplish every day activities and provide families and individuals with lifestyle choices that will increase their access to housing in the Region. Coincidentally, it is these development patterns which will also naturally increase opportunities for a diversity of affordable housing types.

3. **Stabilizing and Revitalizing Existing Neighborhoods and the Creation of New Neighborhoods**

Traditional towns and neighborhoods have always provided housing opportunities for all of their citizens. Lower income citizens were housed in smaller units and apartments which were accessory to more expensive units, or found in above store and above garage apartments.
Traditional towns and neighborhoods in the Treasure Coast Region provided such housing opportunities. In recent years, however, several trends have occurred which have resulted in a loss of the housing stock and a failure to replace it. As some of the vitality of traditional communities was lost to suburban areas, some neighborhoods began to deteriorate. When this deterioration became serious, revitalization proponents were able to have countless affordable housing units removed but not replaced. In new developments, affordable units and certain building types were strictly forbidden in an attempt to meet a real or perceived market of similar income classes.

As a result of the loss of units in traditional neighborhoods and the failure to permit or provide them in new development, the number of affordable units has declined, at least in relative terms. At the same time, the Region was experiencing an explosion of new residents in the lower income groups, employed in service, retail, landscaping, and agricultural pursuits.

It seems clear that these two trends must be changed. New communities must include a range of housing types, and affordabilities so that we have diverse, non income-segregated neighborhoods and communities will develop which have neighborhood schools and parks and the other amenities which characterize desirable places to live.

Second, a great deal of effort must be put into revitalizing existing neighborhoods before they reach some critical level of deterioration. In order to do so, the problem of housing conditions must be addressed, as well as, the conditions which impact upon the neighborhood. An excellent example of such a strategy is presently occurring in Palm Beach County under the LISC program. This is a multi-faceted cooperative program which includes Community Development Corporations, Social Services Agencies, neighborhood organizations, churches, and local governments in a comprehensive program of neighborhood improvement.
4. The provision of adequate housing for agricultural workers

As the Economic Development Element of this Plan documents, agriculture is of great significance in the Region. Because of the nature of the primary crops in the region (sugar cane, citrus, vegetables), much of the harvest has been by hand. Therefore, there has always been a large number of farmworkers in the Region, at least on a seasonal basis. Although mechanized harvesting is increasing, a significant increase in the amount of acreage devoted to crops has resulted in a continued high number of farmworkers. The large number of seasonal and migrant farmworkers in the Region is shown in Table 2.7.

**TABLE 2.7**

Farmworkers and HRS Housing Facilities

<table>
<thead>
<tr>
<th></th>
<th>Palm Beach</th>
<th>St. Lucie</th>
<th>Martin</th>
<th>Indian River</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Migrant Residents</td>
<td>65,437</td>
<td>8,460</td>
<td>7,890</td>
<td>5,985</td>
</tr>
<tr>
<td>Resident Seasonal Farmworkers</td>
<td>45,263</td>
<td>1,971</td>
<td>5,396</td>
<td>4,094</td>
</tr>
<tr>
<td>Resident Migrant Farmworkers</td>
<td>20,174</td>
<td>6,489</td>
<td>2,494</td>
<td>1,891</td>
</tr>
<tr>
<td>#HRS Permitted Housing Facilities</td>
<td>69</td>
<td>32</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>% Migrant Residents in HRS Permitted Facilities</td>
<td>24.3%</td>
<td>6.7%</td>
<td>5.4%</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

Source: Office of Rural Health, 1994

Traditionally, farmworkers were housed in migrant labor camps, located in or on the edges of the agricultural areas. Conditions at these labor camps were often less than desirable for the health of the workers. As a result of the deterioration of the camps and increasing standards governing their construction and condition, far fewer workers are housed in these camps today, despite an actual increase in the number of farmworkers.

Farmworkers in southeast Florida today are generally Hispanic. Mexicans constitute a large majority of the labor force. Traditionally the workers have low educational levels, live in substandard housing, are in poverty, and are subject to occupational hazards and arduous physical work. The majority speak little or no English. The workers have an unpredictable income, and their mobility is limited because of their inability to afford means of transportation (Office of Rural Health, 1994).

As referenced above, many of the old migrant camps have closed, forcing migrants to seek housing in urban areas. Many are now housed in “rooming homes”, with large concentrations in Fort Pierce and Belle Glade. The migrants often end up in urban slum...
areas, in conditions actually worse than some of the migrant labor camps. Migrant workers are more inclined today to bring their families with them. Families must double up to meet the high rental rates charged by unscrupulous landlords for marginal or substandard units. Families end up in dormitory-type rooming houses, which are more suitable for single workers. There are often inadequate or inoperative sanitation facilities. Health problems result due to the lack of running water, sanitary facilities, and overcrowding. The migrants lack the financial credit needed to secure better housing, or credit is unavailable. Many are not aware of existing government subsidy programs or assume they do not qualify (Office of Rural Health, 1994).

Recently, there has been a renewed concern over the plight of migrant farmworkers, especially the conditions under which they are housed. However, there are significant constraints to the provision of better housing. There is little private developer interest in building for the low cost housing market due to the high land and construction costs and slim profit margins. There is uncertainty over the long range housing demand, concerns about building units to be utilized only during the 6 month peak season, and a great deal of government regulation/red tape for publicly financed units. Comprehensive plans and zoning ordinances generally do not allow housing development in areas designated for agricultural purposes. In some areas, land for housing is in short supply. In others, local residents oppose the development of housing for farmworkers.

To address the plight of the farmworker, Regional Farmworker Housing Coalitions have been organized. Membership on these coalitions include staff of the State Department of Human Resources (HRS), city and county code enforcement, fire inspectors, migrant housing owners and operators, organizations representing farmworkers, public health professionals, Indian River and Gulf Citrus Leagues, U.S. Department of Labor and the Occupational Safety and Health Authority (OSHA). Two different coalitions serve this area: Indian River (Martin, Okeechobee, St. Lucie, Indian River Counties), and Glades (Palm Beach, Broward, Dade, Monroe, Collier, Glades, Hendry and Lee Counties). Their purpose is to solve problems related to migrant farmworker housing and health. The coalitions meet monthly (Glades) or quarterly (Indian River). According to the Office of Rural Health, Migrant Farmworker Program, the following need to be carried out to address farmworker needs:

1) Determine whether there is an actual need for additional migrant housing. Are statistics accurate? Should surveys be done?
2) Investigate sources of government funding or guarantees. (Farm Credit Service, etc.);
3) Organize non-profit corporations (Indiantown Non-Profit Housing, Inc. has had success);
4) Address local politics, zoning, building statutes;
5) Determine appropriate and preferred locations for housing;
6) Solicit support and cooperation of agencies and agricultural industry leaders;

7) Utilize agricultural ad valorem taxes to support farmworker housing; and

8) Planning

- Local housing elements should address farmworker housing
- Designate areas for farmworker communities
- Utilize appropriate criteria for the design of such communities
- Require minimum levels of housing per agricultural land
- Housing Incentive Plans should address farmworkers housing separately.
- Consider financial incentives and streamlining of permit process for agricultural housing.

5. A Change in Development Patterns and Trends

Correction of the Region's affordable housing shortage will only occur if there are sufficient sites and opportunities available for constructing a diversity of affordable housing types. With the changes in development patterns and trends experienced over the last 40 years, the supply of such sites and opportunities has diminished and is not being replenished by new development.

Before affordable housing shortages can be addressed in any meaningful or permanent way, development patterns need to be encouraged which will address the fundamental cause of the shortage problem. There must be sites and opportunities for affordable housing types which can occur naturally within a neighborhood or community free from subsidies and stigma.

Traditionally, sites and opportunities for a diversity of affordable housing types widely occurred in the older neighborhoods and plats. Smaller lot sizes and several building types and land uses were encouraged rather than prohibited. Over the last 40 years, the Region has experienced a shift away from this development pattern to one of large lot, single-use housing developments and resorts. This pattern of development is unreceptive to a variety of building types that have historically provided an assortment of more affordable housing options. Consequently, this has placed an excessive and unfair demand and responsibility on the Region's existing neighborhoods to provide more than their fair share of the affordable housing stock.

The shift in development pattern has meant that families and persons of moderate means have few choices for housing in the Region, and has arguably caused imbalances in previously healthy, long-standing neighborhoods. Some would also argue that this shift has further isolated age and economic classes and led to an over-reliance on "affordable housing projects" to address shortage problems.
The shift in development patterns and trends in the Region has greatly contributed to the inability to adequately address affordable housing shortages. Efforts need to be made to encourage a better balance of development patterns that will provide alternatives to "affordable housing projects", naturally increase the number of sites and opportunities for affordable housing at the neighborhood and community level, and promote a permanent and voluntary solution to affordable housing shortages.

An important factor impacting housing costs is the pattern of development within which housing is provided. If homes are constructed at low density in isolated locations they will cost more to service than they would if provided in a more traditional context. If land uses are rigorously separated, such that jobs and services are remote from where people live, the price of houses may not increase, but they may still be unaffordable for other reasons, such as the costs that are required to meet transportation needs.

It is not just the actual cost of a home that influences its affordability. Rather, it is how much money is available for housing once all other required expenditures have been made. Patterns of development influence these expenditures dramatically. They impact the need for roads, miles of water and sewer lines, the number of police and fire units needed, whether a family will need one, two, or three cars, etc. Pattern of development effects out of pocket costs for cars, and also ongoing expenses such as taxes.

6. Conclusion

Housing cannot be looked at as a separate, independent problem, unrelated to other issues. In order to truly address the problem, and do it cost-effectively, we need to look at the patterns of development, and the structure and function of communities.

A few observations provide ample evidence for the need for immediate attention to this approach.

1. If patterns of development which require automobile ownership for survival are approved, housing becomes less affordable because a large amount of income must be spent for transportation. (Jacobs 1990). This will hurt the poor more than the wealthy.

2. If people of limited financial means are precluded from living within the very communities that they work, they are required to pay larger than necessary commuting costs, and spend an excessive amount of time commuting which could be better spent on other activities such as time with children.

3. If excessive minimum size and material requirements are set for houses within developments, it will preclude the construction of small, well-built, more affordable homes.

4. If walled and privately guarded communities are built, the cost of housing will be increased for all that live there.
5. If low-density, sprawling developments and the rigorous isolation of land uses such as housing, work place, and shopping are encouraged the per unit cost of infrastructure, taxes or user fees, and the level of income needed to obtain housing are all increased.

All of these issues need to be addressed before a comprehensive and meaningful solution to the affordable housing problem can be accomplished.
C. Significant Regional Resources and Facilities

1. All housing units which meet current municipal code and are affordable to very low- and low-income residents.

2. All public housing authorities and local government housing programs.

3. All historic housing structures on the National Register of Historic Sites, the State of Florida Register, and on lists developed by bona-fide local historic districts and commissions.
D. Goals, Strategies and Policies

Regional Goal 2.1

An adequate supply of safe and affordable housing to meet the needs of the very low, low and moderate income residents of the Region.

Indicator:

Change in percentage of very low and low income households spending more than 30 percent of their income for housing.

Increase in the number of housing units which are affordable to the very low, low, and moderate income households (rental or owner units).

Increase in the amount of funds allocated to affordable housing from the local level.

Strategy 2.1.1: Create a planning/regulatory climate which is conducive to the production of affordable housing.

Policy 2.1.1.1: Local governments should reduce unnecessary regulatory barriers which make it more difficult to build affordable housing. Examples of such barriers are large lot sizes, minimum unit size and floor space, and set backs.

Policy 2.1.1.2: Local governments should allow zero lot line development, cluster development, accessory apartments, high-density zoning, mixed-use buildings, modified site improvement standards, alternate construction techniques, etc.

Policy 2.1.1.3: Encourage projects that address the unique problems of first-time home buyers.

Policy 2.1.1.4: Local governments should consider the enactment of incentives such as density bonuses, linkage programs, and inclusionary housing policies.

Policy 2.1.1.5: Local governments should designate adequate sites where affordable housing can be developed.

Policy 2.1.1.6: Local governments should create and maintain an adequate housing/housing conditions data base.

Policy 2.1.1.7: Local governments should provide adequate funding for housing agencies or housing staff so that a program can be carried out which adequately addresses local affordable housing problems.
**Strategy 2.1.2:** Create and expand public/private partnerships among all entities involved in the provision of affordable housing including financial institutions, developers, contractors, government agencies, social service and other non-profit organizations, churches and realtors.

**Policy 2.1.2.1:** Work closely with non-profit organizations who are interested in sponsoring housing projects which serve very low, low and moderate-income residents.

**Policy 2.1.2.2:** Encourage partnerships between affordable housing developers and organizations interested in water and energy conservation to create sustainable homes that are less costly to maintain.

**Strategy 2.1.3:** Utilize existing funding mechanisms and create new ones.

**Policy 2.1.3.1:** Local governments should utilize the opportunities available under the Sadowski Housing Act and all other available funding mechanisms to address their needs for affordable housing.

**Policy 2.1.3.2:** Financial incentives should be provided for the private sector by local governments which will promote the production of affordable housing.

---

**Regional Goal 2.2**

**A range of housing types and affordabilities in proximity to employment and services.**

**Indicator:**

The percentage of new housing units built in proximity to employment and services.

The ratio of rental units to units intended to be owner occupied in new developments.

**Strategy 2.2.1:** Ensure that all areas have a reasonable mix of housing, employment opportunities, and services.

**Policy 2.2.1.1:** Improve/expand the public transit system and encourage the development of affordable housing in locations best served by transit.

**Policy 2.2.1.2:** Consider utilizing excess public lands for affordable housing.

**Policy 2.2.1.3:** Encourage the development of a mix of residential land uses which provide for a range of housing types and affordabilities.
Strategy 2.2.2: Ensure that all areas have a reasonable mix of housing types and affordabilities, for both owner and renter households.

Policy 2.2.2.1: Local governments should carefully assess their existing housing stock and their existing needs during the preparation of Evaluation and Appraisal Reports. Particular attention should be paid to the housing needs of the elderly, young adults, single-parent households and others who may find the traditional single-family home to be unaffordable and/or inappropriate for their needs.

Regional Goal 2.3

The stabilization and revitalization of existing neighborhoods.

Indicator:

*Increase in the number of communities which undertake neighborhood revitalization/stabilization programs.*

Strategy 2.3.1: Preserve affordable housing and rehabilitate substandard housing.

Policy 2.3.1.1: Wherever economically feasible, substandard housing should be rehabilitated and renovated rather than removed. When housing must be removed it should be replaced with alternative housing in proximity to employment and necessary public services.

Policy 2.3.1.2: Historic structures should be preserved as important components of the neighborhood to encourage infill and revitalization efforts.

Strategy 2.3.2: Acknowledgment that the health of neighborhoods depends on many factors, including structural soundness, crime prevention, adequate infrastructure, social services, and others.

Policy 2.3.2.1: Pursue a multi-faceted cooperative program between local government, non-profit organizations, and neighborhood organizations in order to improve and maintain neighborhoods.

Strategy 2.3.3: Identify neighborhoods in need of assistance and determine appropriate methods to improve them.

Policy 2.3.3.1: Local governments should focus the use of affordable housing assistance funds to identified neighborhoods as part of a comprehensive program of neighborhood improvement.

Regional Goal 2.4
An adequate supply of safe and affordable housing to meet the needs of agricultural workers, and others with special needs.

Indicator:

Number of farmworkers seeking housing assistance; number of farmworkers provided with housing assistance.

Number of programs targeted to producing private sector farmworker housing.

Increase in the number of housing units accessible to disabled and others with special needs.

Percentage change in the number of identified homeless citizens.

Percentage change in the number of homeless shelter spaces.

Increase in the supportive services available to homeless persons.

Increase the number of housing units for the elderly population, including adult congregate living facilities, continuing life care, nursing, etc.

Strategy 2.4.1: Work with non-profit and for profit organizations representing citizens with special needs to prepare an assessment of need and a recommended plan to meet that need.

Policy 2.4.1.1: Provide adequate housing opportunities for agricultural workers.

Policy 2.4.1.2: Work with Regional Farmworker Housing Coalitions to develop a program for meeting the housing needs of farmworkers.

Policy 2.4.1.3: Recognize the cultural differences and financial and mobility constraints of farmworkers when locating and designing farmworker housing and neighborhoods.

Policy 2.4.1.4: Support the efforts of coalitions for the homeless in order to address the sheltering, food, and medical needs of these citizens.

Policy 2.4.1.5: Care facilities, group homes and retirement communities which house citizens who are handicapped, abused or elderly should be integrated into residential areas.
**Strategy 2.4.2:** See that the special housing needs of the elderly are adequately addressed in the Evaluation and Appraisal Reports of local government comprehensive plans.

**Policy 2.4.2.1:** The need for adult congregate living facilities, continuing life care and nursing homes should be identified and addressed.

**Policy 2.4.2.2:** Barriers to alternative housing concepts for the elderly should be eliminated.

**Policy 2.4.2.3:** The existing and projected population of the advanced elderly should be determined and the need for special housing determined.

---

**Regional Goal 2.5**

**Future growth which results in the creation of neighborhoods and communities, and not in isolated patterns of development.**

**Indicator:**

*The number of plans which are prepared or amended to allow for diverse and well connected neighborhoods and communities.*

*The number of new neighborhoods and communities which are developed consistent with such plans.*

**Strategy 2.5.1:** Encourage the development of neighborhoods and communities, and discourage new development which will not contribute to the creation of new neighborhoods and communities consistent with local government plans.

**Policy 2.5.1.1:** Assist local governments in preparing area plans which establish diverse and well connected neighborhoods and communities.
Economic Development
3. Economic Development

A. Trends and Conditions

1. Introduction

It is recognized that the economic development needs of each municipality and county of the Region are different. This holds true for the social and physical character of each community, which in turn influences their ability and desire to attract certain types of industry and employment. No one economic development strategy is completely applicable to all communities. What may work well for one community may fail or be inappropriate for another.

Not all economic development strategies suggested in the Council’s SRPP will be applicable or useful to each and every community in the Region. Efforts have been made, however, to develop a full range of short and long-term strategies, some of which every community in the Region will find useful in supporting their economic development efforts locally, and some which will help increase the power of the Region, both nationally and internationally, to attract and sustain economic development in all sectors.

2. The Role of the SRPP and Growth Management Policy in Expanding Economic Development

Fundamental to public and private sector efforts to bring sustainable economic development and prosperity to the Region, is the recognition that growth management policy at all levels influences the ability to achieve economic development goals and objectives.

Just as misdirected growth management policy has the potential to retard economic development and encourage inefficient patterns of development, growth management done properly has the potential to increase development efficiencies and expand economic development opportunities. As articulated by Nelson and others, growth management policy has the potential to expand and support economic development in the following ways:

a. Informed investment decision-making. Growth management plans inform developers where, when, and the extent to which significant public investments will be made to accommodate new development. This improves the certainty and predictability of the investment decision-making process and helps take some of the guesswork out of the development approval process.

b. Protect the integrity of real estate investments. The greatest concern of pension funds, insurance companies and everyday investors, such as...
homeowners, is equity. One of the reasons equity may not improve in a given area is when far more land is designated for development purposes than projections would warrant. Good real estate investment strategy advocates steering away from areas that oversupply land for economic development.

c. **Protect against overbuilding.** In 1990, office space vacancy rates among many non-growth management states exceeded 30 percent, but were less than 2 percent in the “economic dynamos” of Germany, Japan, Korea, Hong Kong, Singapore, and Indonesia, which all have sophisticated growth management policies. The United States economy will lose $500 billion in economic resources because of high vacancy rates resulting in the nation’s savings and loan bailout (Nelson, 1994).

d. **Protect against shortsighted losses of resource land.** Agriculture is the nation’s and this Region’s leading export sector. With the new General Agreement on Trade and Tariffs (GATT), many more agricultural markets are open to the United States. Yet, the best agricultural land is often most susceptible to negative impacts of low-density, suburban sprawl. Conservation of agricultural land in the short term will create agricultural opportunities in the future.

e. **Protect against unnecessary losses of open space and natural systems.** Travel and tourism has in the past and continues to play a major economic role in the Region. Travel and tourism has been predicted to be the leading industry in the United States and the world by the year 2000 (National Park Service, 1990). A poll commissioned by the President’s Commission on Americans Outdoors found that the natural beauty of open space was the single most important criterion for tourists. Florida growth management policy officially recognizes open space as a key element in improving “quality of life” and as the foundation of the multi-billion dollar tourism industry and economic growth. In Palm Beach County alone, tourism contributed approximately $1.5 billion to the local economy and $675 million to household earnings. It also helped support an estimated 70,787 jobs in all sectors. (Sunbelt Research Associates, Inc., 1995).

The value of protecting open space and natural systems goes far beyond the dollars and cents of the tourism and travel industry. The real economic benefits of protecting meaningful open space ranges from filtering, recharging, and reducing the cost of the water supply, cleaning the air, and channeling flood waters; to attracting large and small business, avoiding the increased costs of serving homes arranged in sprawling development patterns, or even influencing the bond ratings that govern the cost of long-term debt. Success in attaining and sustaining economic health depends on recognizing the economic contribution that undeveloped land already makes.
f. **Stimulate increase retail and service efficiencies.** The fastest growing sectors of the Region’s economy are retail trade and services. These opportunities are highly sensitive to thresholds based on distance and density. Too few people spread out over too much area will prevent expansion of many retail and service activities and reduce the number of viable sites for business and commerce. Yet, the same number of people closer to each other will stimulate those activities.

g. **Improve global competitiveness.** “Image is everything” - popular advertising slogan. Nothing could be more true. Image is everything. The success of all economic development goals and strategies will be predicated on how the world views the Treasure Coast.

By discouraging overbuilding, taxpayer and investor funds are available for economic development. By conserving the agricultural land base, expanded exports under GATT and expansion of value-added agricultural industry are possible. By making government and patterns of development more efficient, taxes are lowered and more capital is available for economic development. By protecting meaningful open space, several free but otherwise very expensive services are provided, quality of life and real estate values are bolstered, and the attractiveness of the Region to tourism and other industry sectors is improved. By stimulating retail and service industries, greater economic exchange occurs, generating more investment capital. By making cities into vibrant, efficient, world-class centers, more global investment will be attracted to regional and local economies (Nelson, 1994).

Efforts within the economic element of the SRPP are focused on identifying the strengths and weaknesses of the Region’s economy and existing growth management policy and suggesting short- and long-term solutions/strategies to address and correct them. Implementation of these strategies at the State, local, and regional level are intended to: 1) support public and private sector initiatives, 2) increase the Region’s competitiveness in the domestic and international marketplace; and 3) protect the quality of life for residents of the Region.

### 3. Past Trends

a. **Early History of Economic Development.** Native Americans were originally attracted to the Treasure Coast and other areas of South Florida because it was one of the few places in the country where they could live the year round without planting crops or storing food. Subsequently, early settlers took up farming in the same area because it was one of the few places in the country where crops could be produced year round. Agriculture, therefore, became the original foundation of the Treasure Coast Region's economy. In the western communities around Lake Okeechobee, sugarcane production became a major crop producer and remains the primary economic
base for that area today. Pineapple was established as one of the first cash crops in the eastern communities, highly encouraged by Henry Flagler who owned the Florida East Coast Railway. The Indian River Lagoon, as one of the most diverse estuaries in North America, Lake Worth, and other marine resource areas in the Region have historically provided excellent shellfish, commercial and sport fishing and recreation activities for residents and tourists. These resources continue to be important to the Region’s economy.

The building of Flagler's Railroad along the east coast in the early 1900s gave birth to the older coastal communities of the Region, and provided settlers with a means of transporting their crops to the northern markets. It was the success of the railroad extending to Key West, however, which eventually caused the demise of pineapple production in the Treasure Coast Region. This extension in 1912 opened up competition from Cuba. Its growers were then able to ship their pineapples to Key West and on to the northeast by rail to sell at lower prices. Pineapple was then replaced with tomatoes as a cash crop in areas of Palm Beach County and pineapple canning factories were replaced with ketchup canneries. (McIver, 1988)

In the northern part of the Region, particularly St. Lucie and Indian River counties, citrus was established as the main cash crop, and continues to be an important contributor to the Region's economy today. Martin County was once one of the world's top producers of chrysanthemums until it lost its market to the lower prices of South American growers.

b. Asset of Climate and Location. The railroad linkage of the coastal communities, the warm seaside climate, excellent fishing, and 110 miles of sandy shoreline brought thousands of visitors and new residents to the Treasure Coast Region. Located along the south central area of Florida's east coast, the Treasure Coast area quickly became a popular tourist destination and seasonal address for the wealthy.

As more and more people poured into the Region annually, its seasonal and permanent populations increased substantially. In the sixty year period between 1930 to 1990 the Region's population grew from 70,673 to 1,204,797. Historically, the Region's population has increased at a faster rate than that of the state and the nation. This trend still continues. For example, between 1980 and 1990 the Region's population increased at a rate of 53 percent, as compared to the state's 33 percent.

c. Population Growth Drives Recent Regional Economy. Transportation linkages and continued population growth established an excellent setting for economic growth. Many communities in the Treasure Coast Region quickly changed from quiet farming villages to metropolitan areas. According to the 1993 population estimates, 9.4 percent of the State's total population reside in the Treasure Coast Region. The Fort Pierce and West Palm Beach-Boca
Raton areas have grown into Metropolitan Statistical Areas (MSAs) containing a large portion of the Region’s population and providing employment opportunities to neighboring and outlying communities. The close proximity of the larger metropolitan areas of the south, such as Fort Lauderdale and Miami, means easy access to these markets and, other employment opportunities.

FIGURE 3-1

In-migration rather than natural growth has traditionally accounted for most of the growth in the Region. Ninety-six percent of the population growth during the 1980s was due to in-migration. Tourism and in-migration have become the leading factors driving the Region's economy. These two elements have fueled the construction, services, and retail trade industries. During the 1980s, 416,842 persons were added to the Region (an average of over 41,000 persons per year or 800 persons per week). Based on the 1990 average household size of 2.34, 342 households were being added to the Region each week during this 10 year period. These households often require new housing, repairs and additions to existing housing, furniture, appliances and related products and services. Most of the growth in recent decades, however, has occurred outside the older coastal cities.

CHALLENGE OF THE ELDERLY

The warm climate, lower taxes, and low densities have also lured large numbers of retirees from the northeast to the Treasure Coast. As a result, the elderly population group has steadily increased in proportion to the rest of the population over the past several decades. Table 3.1 indicates that the 0-24
The advanced elderly population, the 75+ group, grew even more dramatically during the 1980's, increasing by 102 percent, Table 3.3. This age group made up only 7 percent of the Region's population in 1980, but represented 10 percent by 1990.

Demands for public services by elderly dependents will become an increasing burden to the public if these trends continue. There was a 34 percent increase of persons 65 years and older who have incomes below the poverty level between 1979 and 1989 (Table 3.4). As costs for medical and other needs and services increase beyond an individual's ability to pay, the public will be called upon to make up the difference.
For example, it currently costs over $10 million a year for the Area Agency for the Aging, (AAA) a non-profit organization, to provide homebound care services (transportation, homemaker, meals, adult day care) to over 10,000 homebound elderly in The Treasure Coast Region. According to the AAA, the Treasure Coast Region’s Planning & Service Area 9 (PSA9), has more elderly than any of the other ten PSA’s in the State. In the last three years there has been approximately a 20 percent increase in the demand for services, and a continuous waiting list of 2,500-3000 requests that are not met because of lack of funds.

Because of the vastness of the Region, and the distribution of the elderly throughout the Region, transportation is noted as the greatest barrier to providing services to the elderly. A rapid growth in requests for homebound elderly services is being experienced in the largely sparsely developed western sections of the Region. With continued cuts in federal programs, more of these costs will fall at the local and state level, if services are to continue. Based on the waiting list information, estimated increases in requests for services, and other factors, it is estimated by the year 2000 that homebound services for the elderly could easily exceed $15 million a year (AAA 1995 and AAA personal correspondence, June, 1995).

In the Treasure Coast Region in 1994 there were approximately 7000 patients in nursing homes. Of these patients, Medicaid and Medicare covered costs for 54.4 percent and 11.4 percent, respectively. Based on the average cost for care of a patient of $38,690 per year, the total costs for nursing home care for the elderly covered by Medicaid and Medicare is over $178 million a year in 1994. With an average increase in demand and costs of 2 - 5 percent per year, by the year 2000, these costs could increase to $200-$240 million a year (Treasure Coast Health Council, personal correspondence, June, 1995).

The concentration of a large elderly population also has a number of positive effects on the regional economy, such as the development of a number of health-related businesses. The medical and health care industry are among the fastest growing service industries in the Region.
### Table 3.4 Age 65 and Older, Incomes Below Poverty Level

<table>
<thead>
<tr>
<th>Areas</th>
<th>1979</th>
<th>1989</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGION</td>
<td>15,772</td>
<td>21,021</td>
<td>+34</td>
</tr>
<tr>
<td>Florida</td>
<td>209,330</td>
<td>247,426</td>
<td>+18</td>
</tr>
</tbody>
</table>

Source: U.S. Census Handbook, 1980, Table 7.11, U.S. Census, 1990, Table 149
Table: TCRPC

4. **Description of Region’s Economy**

Immigration and tourism have traditionally been key components of the Region’s economy. Most of the tourism is seasonal in nature, therefore, much of the Region’s employment is seasonal, resulting in high seasonal unemployment rates. Because of its reliance on agriculture, construction and service industries for jobs, unemployment in the Region is generally higher than the nation during periods of national recession. An over-dependence on construction and a weak industrial base often prolongs the effects of recession, as was experienced in the 1970s and the early 1990’s.

Services and Retail, the two fastest growing employment sectors in the Region, are highly reliant on tourism and in-migrating population for continued growth. This dependency causes fluctuating employment, and makes the local economy susceptible to economic cycles. Durable goods manufacturing industries are also susceptible to economic cycles as demonstrated by the recent recession. A more diverse economy is needed to provide year round employment to help stabilize the Region’s economy.

Despite the fact that large corporations and manufacturing industries tend to be more visible, nine out of 10 jobs in Florida are created by small firms. This pattern is also reflected in the Region where small businesses make up over 97 percent of the total commercial establishments, and provide over 56 percent of the total employment (BEBR, 1994). There is a certain degree of instability associated with small businesses because they have difficulty in obtaining capital and remaining solvent. As most of the small business jobs are in the service sector, it makes this particular job market especially susceptible to seasonal and economic cycles.

A diversified employment base is needed to support the Region’s large labor force and to stabilize the job market. A diversified economy is better able to withstand recession, provide a steady increase in the number and types of jobs available and increase personal income. It also lessens the seasonality and spatial clustering of economic activity, lowers and stabilizes the unemployment rate, and provides for a stabilized tax base.
a. Employment

LABOR FORCE. Figure 3-1 and Table 3.5 indicate that the Region's labor force has grown steadily. In recent years, the labor force has grown at a faster rate than the overall population. In 1990, the Region's labor force made up 48 percent of the total population, and the labor participation rate was 59 percent (U. S. Census, 1990). Unemployment rates in more recent years, however, have been higher in the Region than the State. This is particular true in Indian River and St. Lucie counties where the average unemployment rates range between 3-5 percentage points higher than the State (Table 3.6). The most consistent cause for high unemployment rates in these two counties is associated with the seasonal employment cycle of the citrus industry. This industry continues to be an important employer in St. Lucie and Indian River counties, but routinely has high and low activity periods, similar to the tourist industry.

JOBS CREATED. There were 247,854 jobs added in the Treasure Coast between 1980 and 1992 (369,092 to 616,946), or an increase of 67 percent (BEBR, 1994). This translates to an average of 20,655 jobs per year, or a 5.6 percent increase annually. The three largest employers, services, retail trade and government, make up 65 percent of the Region's total employment.

<table>
<thead>
<tr>
<th>Year</th>
<th>IRC</th>
<th>MC</th>
<th>PBC</th>
<th>SLC</th>
<th>REGION</th>
<th>FLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>6.9</td>
<td>8.9</td>
<td>9.2</td>
<td>10.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>9.0</td>
<td>4.2</td>
<td>8.2</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>9.1</td>
<td>6.4</td>
<td>6.2</td>
<td>7.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>9.8</td>
<td>6.6</td>
<td>11.5</td>
<td>7.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>10.9</td>
<td>9.2</td>
<td>12.4</td>
<td>9.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Regional Profile, 1979, Regional Description, 1985, TCRPC; BEBR 1994
Table: TCRPC
### Table 3.7 Major Economic Sectors, 1980, 1992

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>95,464</td>
<td>25.9</td>
<td>215,825</td>
<td>35.0</td>
<td>126.1</td>
<td>1,193,573</td>
<td>24.4</td>
<td>5,412,347</td>
<td>34.7</td>
<td>12.5</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>70,276</td>
<td>19.0</td>
<td>122,077</td>
<td>19.8</td>
<td>73.7</td>
<td>677,491</td>
<td>13.8</td>
<td>1,958,115</td>
<td>12.5</td>
<td>12.5</td>
</tr>
<tr>
<td>Fin/Insurance</td>
<td>45,349</td>
<td>12.3</td>
<td>59,047</td>
<td>9.6</td>
<td>30.2</td>
<td>392,322</td>
<td>8.0</td>
<td>1,461,890</td>
<td>9.4</td>
<td>11.9</td>
</tr>
<tr>
<td>Real Estate</td>
<td>42,863</td>
<td>11.7</td>
<td>67,576</td>
<td>11.0</td>
<td>57.7</td>
<td>535,916</td>
<td>10.9</td>
<td>1,855,427</td>
<td>11.9</td>
<td>11.9</td>
</tr>
<tr>
<td>Government</td>
<td>36,704</td>
<td>9.9</td>
<td>38,565</td>
<td>6.3</td>
<td>5.1</td>
<td>646,447</td>
<td>13.3</td>
<td>1,032,763</td>
<td>6.6</td>
<td>6.6</td>
</tr>
<tr>
<td>Construction</td>
<td>36,158</td>
<td>9.8</td>
<td>39,958</td>
<td>6.5</td>
<td>10.5</td>
<td>778,064</td>
<td>15.9</td>
<td>1,824,279</td>
<td>11.7</td>
<td>11.7</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>15,308</td>
<td>4.2</td>
<td>29,024</td>
<td>4.7</td>
<td>89.6</td>
<td>110,106</td>
<td>2.2</td>
<td>425,933</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Agriculture</td>
<td>13,575</td>
<td>3.7</td>
<td>22,265</td>
<td>3.6</td>
<td>64.1</td>
<td>273,719</td>
<td>5.6</td>
<td>818,509</td>
<td>5.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Forest/Fish</td>
<td>12,705</td>
<td>3.4</td>
<td>21,515</td>
<td>3.5</td>
<td>69.3</td>
<td>206,516</td>
<td>5.3</td>
<td>800,666</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Trans/Com/Util</td>
<td>690</td>
<td>0.2</td>
<td>1,094</td>
<td>0.2</td>
<td>58.6</td>
<td>86,401</td>
<td>1.8</td>
<td>29,673</td>
<td>0.19</td>
<td>0.19</td>
</tr>
<tr>
<td>Total Employment</td>
<td>369,092</td>
<td></td>
<td>616,946</td>
<td></td>
<td>67.2</td>
<td>$4,900,555</td>
<td></td>
<td>$15,619,602</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: BEBR, 1994 Perspective
Table: TCRPC

### b. Major Economic Sectors

The following is a summary of the role of each economic sector on the Region’s economy:

1. **Services** continue to be the largest employment sector. It is the fastest growing sector in the Region, with employment increasing by 126 percent between 1980 and 1992. Services provide 35 percent of the jobs in the Region and generated over $5.4 billion in earnings in 1992. Tourism and in-migration have contributed to the success of the service industries. Services provide a wide range of full time professional, skilled and unskilled jobs as well as part-time and entry level positions. In addition, service industries provide numerous jobs for retirees who supplement their income. Motion pictures, business services, medical and health services are among the rapidly growing industries within this sector.

2. **Retail Trade** is another fast growing sector of the economy in the Treasure Coast and makes up 20 percent of the total employment. Employment in retail trade has increased 74 percent in the last 12 years and currently contributes almost $2 billion dollars to the local economy. Much of the employment is at the six regional malls located in the Treasure Coast Region, and at countless strip shopping centers.

3. **Finance/Insurance/Real Estate.** This sector dropped from third to fourth place in employment in the Region between 1980 and 1992. It provides
nearly 60,000 jobs in the Region and contributes almost $1.5 billion to the local economy.

4. **Government** provides over 67 thousand jobs in the Region and contributes $1.85 billion to the local economy. It jumped from fourth to third place in employment between 1980 and 1992. In a Region that has experienced rapid population growth over the past several decades, it is not surprising that government has become a major employer. In order to meet the greater demands of a rapidly growing population, more personnel are needed to administer increased services such as infrastructure, law enforcement, fire, health, solid waste and associated services. (See Issues Section for further discussion.) The top employers in this sector include the Palm Beach County School District (14000) Palm Beach County Government (7000), the Martin County School District (1980), Martin County Government (1290), St. Lucie County School District (2850), and St. Lucie County Government (1200), and the Indian River County School District (1600).

5. **Construction** has traditionally been an important industry to the Region. It is fueled by high growth due to in-migration, and contributes over $1 billion to the local economy yearly. Although it makes up only six percent of the total employment in the area, it contributes directly, as well as indirectly, to the job market by supporting jobs in other employment sectors. Construction appears to be much more sensitive to cyclical changes than other economic sectors. Data shows that employment in construction drops very rapidly during economic lows, and recovers very quickly as the economy turns upward. During the recent recession (1988-1991) for example, there was a loss of 9,000 construction jobs in Palm Beach County (BEBR, 1994). Compared to other employment sectors, construction had the smallest increase (5%) in employment between 1980 and 1992, reflecting the recent recession.

6. **Manufacturing** makes up 6.5 percent of the Region's employment, and contributes $1.8 billion to the local economy. Because of the high value-added activities and potential for new jobs associated with manufacturing, this industry is highly sought after, particularly light, clean manufacturing type activities. Durable goods manufacturing, however, is also very susceptible to recessional cycles and experiences high layoffs. For example, during the early 1990's recession, high levels of layoffs were experienced by Northrop Grumman (-33%) in Martin County and Pratt & Whitney (-23%), as well as IBM (-45%) in Palm Beach County. These layoffs in turn slowed down the economic growth in the Region. Piper Aircraft Corporation in Indian River County is again becoming a major employer after recovering from recent bankruptcy. It plans to increase its employment to 525 this year.

Currently, eighty-two percent of the manufacturing employment is located in Palm Beach County. Large manufacturers in the Region include: Pratt &
Whitney, jet engines (6200); IBM, personal computers (4500); Siemans Information, communication devices (1750); Motorola, Inc, electronic pagers (1750); Palm Beach Newspapers, Inc., newspaper publisher (1330); Northrop Grumman, aviation (450); Piper Aircraft, aviation, (475); Tropicana Products, Inc., citrus juice (275). Manufacturing is less prevalent in the Region than in the State as a whole, where it makes up 10 percent of the total employment.

7. Agriculture, Forestry and Fishing provide 29,000 jobs and make up 4.7 percent of the Region's total employment. Agriculture, however, continues to be the most important industry in this sector. Compared to other employment industries, it is somewhat unique. While supporting relatively small employment it contributes substantially to the Region's economy through cash receipts from product exports. In addition, it creates multiple jobs in primary and secondary markets (St. Lucie County, 1994) Cash Receipts from the marketing of agricultural products in 1992 were $1.9 billion (BEBR, 1994). Large agriculture employers include: U.S. Sugar Corp., (2100) Sugar Cane Growers Co-op (2900); South Bay Growers Corp. (2000); and Dole Citrus (200)

8. Transportation, Communications and Utilities. This sector grew by 64 percent in the 1980s with the highest increases in Martin and Palm Beach Counties. The Port of Palm Beach ranks second among Florida's 14 deep water ports in the number of containers handled (Palm Beach County, 1993). With the anticipation of the Cuba market opening up, both the Port of Fort Pierce and the Port of Palm Beach are preparing to expand and or improve their facilities. These improvements will be useful to the Florida East Coast Railroad which hopes to capture a larger share of the freight market.

Palm Beach International Airport is the only major commercial service airport and continues to be the fifth most active commercial service airport in the State with 2.4 million enplanements in 1993, a 26 percent increase over 1983. There are 11 airports located in the Region. Florida Power & Light Co., is the major electric utility provider in the Region and employs 4000 persons.

9. Wholesale Trade provides 3.5 percent of the total employment in the Region and contributes about $8 million to the local economy. This sector had one of the highest increases in employment (69%) since 1980, ranking fourth in employment growth, from 12,705 to 21,515 jobs.

10. Mining had a 58 percent increase in jobs between 1980 and 1992, but, contributes less than $300 thousand to the local economy and provides the smallest number of jobs.

c. Tourism
Tourism has in the past and continues to play a major economic role in the Region. Many residents who live in the area year round came initially as tourists or as seasonal residents. Many of these visitors ultimately brought businesses and sometimes large corporations with them, such as IBM.

According to surveys, beaches remain one of the top attractions enjoyed by visitors to Florida. Of the 110 miles of shoreline in the Region, 30 percent are dedicated for public use and access. Both Martin and Palm Beach Counties have substantial frontage on Lake Okeechobee, the second largest fresh water body in the nation. The Indian River Lagoon is designated as an estuary of national significance, and the Loxahatchee River is designated as a wild and scenic river. The Region contains a wealth of opportunities and facilities for boating, fresh and salt water fishing, tennis, golf and other recreational pursuits.

Studies also show that most visitors from outside the state come from the Northeast, and more and more are coming from the international market. For example, of 3.5 million tourists visiting PBC in 1992, 14 percent were international visitors. Out of these, 50 percent were from Canada, England and Germany (Palm Beach County, 1992-93).

The 1993 Florida Visitor Study, shows that $9.7 million was collected in "bed taxes" in the Region, and over $178 million was generated through tourist recreational sales tax receipts. There are 322 hotels and motels and 3477 food service establishments located in the Region. In Palm Beach County alone, tourism contributed approximately $1.5 billion to the local economy and $675 million to household earnings. It also helped support an estimated 70,787 jobs in all industries. (Palm Beach County, 1993). St. Lucie County included outdoor recreation activities with traditional tourism measures in estimating the effects of tourism on its local economy. Based on a study of outdoor recreation activities in the county, the net tourism/recreation sales tax generated in 1990 was $11.6 million (St. Lucie County, 1994). Trends identified from studies suggest that over 60 percent of the visitors come during the winter months.

The seasonal cycle of tourist activities causes large employment gaps that affect the local economy and contribute to high unemployment rates. There is a need to extend the tourist season and reduce the employment gap to help stabilize the local economy.
d. Income

Palm Beach and Martin Counties rank 1st and 2nd in the State on per capita income and Indian River County ranks 5th. The Region’s per capita income has increased dramatically since 1980 (Table 3.8). Although St. Lucie County’s per capita income has been consistently below that of the State’s, its median household income is above the State average (BEBR 1994). St. Lucie County also contains the highest proportion of households below the poverty level in the Region (BEBR 1994).

<table>
<thead>
<tr>
<th>Area</th>
<th>1980</th>
<th>1990</th>
<th>% Chg</th>
<th>1979</th>
<th>1989</th>
<th>% Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRC</td>
<td>$11,295</td>
<td>$25,028</td>
<td>122 %</td>
<td>$15,101</td>
<td>$28,961</td>
<td>92 %</td>
</tr>
<tr>
<td>MC</td>
<td>12,585</td>
<td>28,443</td>
<td>126</td>
<td>15,749</td>
<td>31,760</td>
<td>101</td>
</tr>
<tr>
<td>PBC</td>
<td>12,820</td>
<td>29,103</td>
<td>130</td>
<td>16,665</td>
<td>32,542</td>
<td>95</td>
</tr>
<tr>
<td>SLC</td>
<td>9,276</td>
<td>14,959</td>
<td>61</td>
<td>13,878</td>
<td>27,710</td>
<td>99</td>
</tr>
<tr>
<td>REGI</td>
<td>12,488</td>
<td>27,201</td>
<td>117</td>
<td>15,425</td>
<td>28,961</td>
<td>88</td>
</tr>
<tr>
<td>Florid</td>
<td>9,835</td>
<td>18,785</td>
<td>91</td>
<td>14,675</td>
<td>27,483</td>
<td>87</td>
</tr>
</tbody>
</table>

As the above discussion indicates, the Region includes some of the most wealthy communities in the State and also areas that are well below the state average income levels. There is a very uneven distribution of wealth found within the Region's boundaries. There is a growing need to see that the poorer communities improve their income levels.

B. Important Regional Issues

1. Distressed Communities

While certain areas of the Region continue to prosper, others have lagged behind or have declined as important economic centers and become secondary places of economic activity.

Many older cities and towns in the Region are among those that have lagged behind, or have lost their standing economically. A certain amount of urban decline has been caused by basic society-wide forces and government policy, rather than by the traits of individual places. Among these forces are the decline of in-migration from farms to urban areas in the 1970s, tremendous increases in the use of cars and trucks, the building of thousands of new suburban housing units and thousands of miles of highways, and the abandonment of mass transit systems. These influences attracted households and businesses out of older cities and towns, made remote areas more accessible, and urban areas less desirable. These factors combined to slow the overall rate of population growth and economic development.
of urban areas. They also caused continuation of suburbanization and sprawl away from established cities and towns, and encouraged disorganized and unfocused economic development in the Region (Brookings Institute, 1982).

Other noticeable distressed areas are rural communities located in the western part of the Region. Many of these communities have not progressed economically. Often the community's economic base is reliant on one industry, such as agriculture. Agricultural activity is seasonal and employs seasonal labor that is mostly transient. The fluctuating employment cycles, transient labor force, and low wages are not very attractive to outside businesses.

2. The Importance of Agriculture

The importance of agriculture can be seen in the Region's contribution to food production for the State and for the nation. Palm Beach County ranks first in the State for producing sugarcane and first in income derived from all agricultural products sold (BEBR, 1994). The Everglades Agricultural Area (EAA) contains the largest known contiguous body of organic soils in the world. A large portion of the EAA is located in western Palm Beach County, and a small area of western Martin County. The rich organic or muck soils and the subtropical climate permits year round farming of sugarcane, sod, winter vegetable, and rice. Fresh fruits and vegetables are produced in the EAA throughout the winter months, which are distributed throughout the country. The agricultural output supported by the EAA has an economic impact worth hundreds of millions of dollars annually to the Region (SFWMD, 1992). The Agricultural Reserve area in Palm Beach County is also a prime producer of winter vegetables that are distributed throughout the country. St. Lucie County is the State's leading producer of grapefruit and a major producer of oranges as is Indian River County, ranking second and fourth in the State, respectively.

Because agricultural activities are seasonal, employment in agriculture peaks during the winter months and declines in the summer. During the off season, some workers find employment in construction and lawn services, while others become temporarily unemployed. This cycle is reflected in the fluctuating unemployment rate that can be seen in Figure 3-2.
The agricultural issue is a complex one. The farmers themselves continually face challenges that can affect their economic existence. The uncertainty of the North American Free Trade Agreement (NAFTA), competition from Central and South America, changes in production and seasonal output, plus the uncertainty in the marketplace are some of the economic challenges faced by farmers today. These and other reasons often motivate farmers to convert their land to uses other than farming (St. Lucie County, 1994). Many food and crop producing farms become locations for new suburban developments. Table 3.9 demonstrates the demands being place on farmlands for development and other uses. The change is most noticeable in the amount of land that has been removed from the farmland category and reclassified. For example, in less than ten years there has been a net loss of over 137 thousand acres (214 square miles) of farmland in the Region (BEBR, 1982, 1994).

Table 3.9 Change in Farmland Acreage 1981-1990

<table>
<thead>
<tr>
<th>Area</th>
<th>1981</th>
<th>1990</th>
<th>Change in Acreage</th>
<th>Change in Square Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRC</td>
<td>223,000</td>
<td>210,161</td>
<td>-12,839</td>
<td>-20</td>
</tr>
<tr>
<td>MC</td>
<td>300,000</td>
<td>278,000</td>
<td>-22,000</td>
<td>-34</td>
</tr>
<tr>
<td>PBC</td>
<td>640,793</td>
<td>569,135</td>
<td>-71,658</td>
<td>-112</td>
</tr>
<tr>
<td>SLC</td>
<td>325,000</td>
<td>294,158</td>
<td>-30,842</td>
<td>-48</td>
</tr>
<tr>
<td>REGION</td>
<td>1,488,793</td>
<td>1,351,454</td>
<td>-137,339</td>
<td>-214</td>
</tr>
</tbody>
</table>

Source: BEBR 1982, 1994
In most cases the agricultural industries in the area have not developed beyond crop production. With the competition caused by NAFTA, it is essential for the local agricultural industry to find a special niche in order to remain competitive in the marketplace. For example, a recent effect on local farmers caused by NAFTA has been having to deal with the large amounts of produce shipped from Mexico that are flooding the domestic markets (National Public Radio, May, 1994). To remain competitive, other markets need to be opened up and explored to take advantage of the surplus produce to the benefit of the local farmer and farming communities. One strategy that should be studied is the potential for local farmers to take on the roles of food processors, product brokers and distributors. With the availability of lower cost produce being shipped from outside the country (given that the source is reliable and steady), it may be more cost effective to process the raw produce locally and distribute the value-added products to local and distant markets.

A recent agricultural economic study done by the American Farmland Trust for Palm Beach County suggested that specialty foods development, processing of South Florida and Caribbean Basin food products, and the expansion of the equine industry should be explored to strengthen and diversify the county's agricultural industry for long term sustainability. These recommendations could help provide economic flexibility, expand and sustain the agriculture industry, strengthen the economic base of distressed agricultural communities, create jobs and help stabilize the industry's job market.

Agricultural conservation programs could help sustain, expand, and promote the farming industry in the Region. A Purchase of Agricultural Conservation Easement (PACE) program is being considered in Palm Beach County to compensate property owners for their willingness to accept a deed restriction on their property that perpetually limits it to agricultural uses. The Agricultural Reserve (20,000 acres), which accounts for more than $200 million per year in economic output and more than 4,000 jobs is the focus of the PACE program. It is recognized that all land is not created equal, that our food cannot be grown just anywhere and the land on which we grow our food may be some of the most important land we have. PACE will provide capital to make farms more productive, reduce debt, allow farmers to compete more effectively with foreign imports, open up new markets, convert to alternative high-value crops and improve compliance with environmental regulations. PACE provides farms with a way to get cash out of their land without borrowing against it and without selling it for development or nonfarm uses. It also keeps farmland affordable for young farmers who want to enter the business and for farmers who want to expand their operations.

3. **The Importance of Tourism**

Tourism has traditionally provided strong economic support to the Region. This industry contributes billions of dollars to the local economy. The 110 miles of oceanfront beaches have traditionally been a strong regional attraction, and continue to lure thousands of tourists and residents to the Region.
As one of the most desirable locations for recreational, residential and commercial development to occur, the Region’s beaches front on some of the highest ranking commercial and residential real estate in the country. As a limited natural resource it is essential that the Region’s beaches remain a viable economic asset to the Region.

The seasonal pattern of more winter than summer visitors, however, creates gaps of low activity similar to agriculture. This cycle in turn affects a number of associated industries and their employment cycles. (See Figure 3-2). To close this gap, there is a need to expand the tourist season and capture a larger share of the international market.

Eco-tourism is an emerging tourist interest that focuses on marketing of the environment. The intent of eco-tourism is to become educated of the natural resources and to experience an unspoiled natural environment that can be enjoyed without the environment being threatened (Teller 1993). The Region contains large areas of pristine natural habitats which could provide ideal settings for establishing eco-tourism outposts. This presents a unique opportunity to attract an eco-tourism market. Developing this special niche with activities such as backpacking, birding, horseback riding, canoeing, camping, and fishing will help expand the tourism season and also reduce the unemployment gap.

Eco-tourism is an option to explore for development in western rural communities. All counties in the Region have multiple opportunities for ecotourism to occur. A number of such areas have already been identified. For example, the rural pastoral setting around Lake Okeechobee provides an excellent setting to develop nature-oriented tourism. Another obvious regional eco-tourism opportunity presents itself in the natural corridor area stretching along the borders of Palm Beach and Martin Counties, between the Indiantown-Lake Okeechobee and Jupiter-Hobe Sound area.

Cultural tourism and ecotourism are the most rapidly growing segments of the travel industry today. The character and charm of small cities is a major factor in attracting tourism. People travel in large part to visit the past or to experience a form of rural or small town life unavailable in their own home area. In certain areas of the country, over half of the tourist industry is from travelers seeking cultural and historic attractions.

4. The Importance of Public Infrastructure

The lifestyle enjoyed by a community and its ability to attract and sustain economic development is predicated on the quality of its public facilities. Public facilities are the skeletal structure which supports community life and economic development. These basic supporting structures are often referred to as “infrastructure.” A community’s infrastructure includes buildings; roadways and bridges; airports; electrical generation and transmission systems; drainage and stormwater facilities; water and wastewater systems; solid waste collection,
transfer, recycling and disposal facilities; schools; parks; prisons and any other facility that is basic in daily life.

Density, land use and distance are the three basic factors of urban development patterns generally considered to affect public facility and service delivery costs. Studies have shown that the more dense and compact a development, the less expensive it is to provide services on a per unit basis. Compact and contiguous mixed-use development patterns are more cost effective than growth patterns of a linear or scattered nature. The more cost-effectively we can deliver infrastructure and services the more efficient and diverse the Region’s economy will become.

New public facilities will have to be built as the Region’s population increases. Ideally, existing infrastructure will be used to its best and fullest capacity, given the cost and time required to build new facilities. A more cohesive link between land use planning and public facilities must be developed. Comprehensive growth management and fiscal policy should be used to channel new growth into areas where underutilized infrastructure capacity exists. This technique, exemplified by the concept of infill development, produces additional tax and usage fee revenues while limiting the expense for public services provision. Infill development policies must encourage adaptive reuse of vacant and underutilized buildings as well as undeveloped lots in built-up areas.

Related to the encouragement of infill is the discouragement of suburban sprawl. Suburban sprawl is characterized by scattered, unplanned, low density development which is not functionally related to adjacent land uses. This type of development increases the cost of service delivery to the Region’s citizens. The Region must encourage the development of vibrant and functional towns, cities, villages, downtowns, and fiscally efficient suburban areas. The public and private sectors must plan for and build more efficient development patterns in order to address current infrastructure backlogs and provide for future services concurrent with the impacts of the developments using those services.

The issues of equity and fairness in how we spend public infrastructure dollars should also be reexamined and challenged, especially related to their effects on maintaining and increasing small business development. For example, when public roads are expanded and built to the extent that the public is encouraged to bypass existing and planned local markets, such markets will never develop as planned and where they exist are sometimes blighted or destroyed. This frequently occurs when public infrastructure funds are spent in ways that make it easy and convenient to drive past small neighborhood businesses in favor of more distant regional discount facilities. These facilities only exist where they are supported and subsidized by road building and taxes, paid for in part by the small businesses and the people who now drive past them. The true costs of needed infrastructure to support small business vs. large regional retailers (i.e., a two lane road vs. a six-or eight-lane facility) are not accounted for in existing growth management and concurrency regulations.
Capital improvement programs (CIPs) should promote the redevelopment of existing systems as opposed to supporting new public facilities. The Capital Improvement Elements (CIE) of local government comprehensive plans identify what projects must be provided by a certain year in order to maintain the adopted level of service standards. It is important that the multi-year CIP implement the schedule of capital improvements contained in the CIE to meet current and projected demands on public services and facilities. Coordination of public services and facilities with current and projected demands has resulted in a close linkage between the CIE of the comprehensive plans, CIPs, and Concurrency Management Systems.

A basic tenet of the 1985 Growth Management Act is the “concurrency” provision. Concurrency requires that development only be approved when adequate infrastructure exists to serve that development or can be provided concurrently with the demands. What constitutes “adequate” infrastructure is established in the local government comprehensive plans (except for state road standards set by FDOT).

Under current practice, “concurrency” is often a disincentive to infill, redevelopment of existing infrastructure and buildings, expansion of existing business, and revitalization of our downtowns. The theory behind concurrency is sound. A reexamination of how we implement it is needed.

Local governments should provide assistance in meeting concurrency requirements where we are trying to encourage preferred forms of downtown and neighborhood redevelopment or the creation of new areas of sustainable and economically beneficial forms of development. For this to happen, local and State capital improvement programs will have to be refocused to lean heavily towards redevelopment and rebuilding of existing infrastructure.

5. The Importance of Downtowns and Existing Towns and Cities

Downtowns have been the major economic centers of the Region since their emergence as urban areas. Millions of dollars have been invested in these areas on infrastructure, commercial businesses, housing, and associated services. A strong, healthy downtown can be a city’s centerpiece. In many ways it is the heartbeat of a community. It is the place where business, commerce, culture and higher educational opportunities collide and create a focus for economic development. It is also typically the center for entertainment and a variety of leisure and special retail activities which influences the attractiveness of the entire community. If a downtown is allowed to decay, the surrounding neighborhoods normally follow suit, with crime and a host of other problems following behind. A thriving downtown can generate a good and positive feeling throughout the community which is a powerful attraction to business and economic development (Rigsby 1995). Investors and developers often judge a community’s vitality by the quality and character of its downtown.
Some urban communities in the Region have been more successful than others in maintaining a stable and reliable economic base. Other previously thriving areas have declined. Some of the older coastal cities that once provided the economic pulse for the Region have experienced extensive deterioration. After losing their economic tenants to the suburbs, these once thriving cities have been left with a number of problems, including deserted central business districts.

The rapid development that has been driving the Region's economy over the years has become lower in density and moved westward. This has severely impacted the economic base of the older communities, straining government budgets and public infrastructure needed to support it. Unless there are public policy changes that will allow older urban areas to compete on an equal basis, these communities may continue to deteriorate.

Another concern associated with the westward trend of growth and development is the impact on land use. Urban development covered approximately 339 square miles in 1973. By 1993, 851 square miles in the Region had been converted for urban development. Continued use of the Region’s land resources at this rate for urban development purposes may interfere with achieving other regional goals such as maintaining agriculture as an important industry, efficiently using infrastructure, protecting large natural systems and securing a sustainable water supply.
Figure 3-3 illustrates that, although the population is expected to grow at a slower pace (66%) between 1990 and 2015, there will still be almost 800,000 people added to the Region. This is almost twice the population of 1980. Based on an average household size of 2.34 persons, approximately 260 households per week will be added to the Region within the 25 year period. If the current trend in development patterns continues, unnecessarily large sums of public monies will need to be spent expanding highways and other infrastructure that could otherwise be spent for enhancing the economic development climate of the Region (e.g., improving schools, cultural facilities, damaged natural systems, transit systems, etc.). Huge parcels of additional land will also be removed from natural and agricultural uses. Conversion to suburban type development could reduce agriculture's important input to the Region's economy, jeopardize the Region's ability to be self sufficient, and also reduce the potential to develop eco-tourism activities that require large areas of land and natural systems to be sustainable.

Several studies have demonstrated that low density, sprawling development patterns disproportionately cost more to serve and that higher costs to the taxpayer for services are directly related to sprawl-type development Downs, 1992: Ewing, 1993, et. al). These studies also help explain the significant increase in government expenditures and higher per capita costs to residents. Table 3.9 identifies large increases in government expenditures to provide public services, and the per capita cost increase to residents between FY 1979-80 to FY 1992-93. These studies also
help to explain why the Government sector has become a major employer in the Region.

Table 3.10 Municipal/County Government Expenditures - Costs Per Capita
FY 1979-80, FY 1992-93

<table>
<thead>
<tr>
<th>Total Expenditures Municipal and County</th>
<th>IRC</th>
<th>MC</th>
<th>PBC</th>
<th>SLC</th>
<th>REGION</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 1979-80</td>
<td>$54,560,469</td>
<td>$23,404,763</td>
<td>$454,185,162</td>
<td>$66,602,961</td>
<td>$598,753,355</td>
</tr>
<tr>
<td>FY 1992-93</td>
<td>$226,510,999</td>
<td>$188,345,936</td>
<td>$2,476,520,322</td>
<td>$279,151,929</td>
<td>$3,170,529,186</td>
</tr>
<tr>
<td>Expenditures Percent Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 1979-80 to FY 1992-93</td>
<td>315%</td>
<td>705%</td>
<td>445%</td>
<td>319%</td>
<td>430%</td>
</tr>
<tr>
<td>Costs Per Capita</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 1979-80</td>
<td>$911</td>
<td>$366</td>
<td>$787</td>
<td>$764</td>
<td>$760</td>
</tr>
<tr>
<td>FY 1992-93</td>
<td>$2,368</td>
<td>$1,764</td>
<td>$2,697</td>
<td>$1,711</td>
<td>$2,469</td>
</tr>
<tr>
<td>Per Capita Percent Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 1979-80 to FY 1992-93</td>
<td>160%</td>
<td>382%</td>
<td>243%</td>
<td>124%</td>
<td>225%</td>
</tr>
</tbody>
</table>

Florida County Atlas & Municipal Fact Book, 1994
Table: TCRPC

Money that is needed to pay taxes reduces the amount residents have to fuel the economy, enhance the business climate, and add to the quality of life of the Region. These and other impacts must to be factored in when measuring the real impact of growth as a stimulus to the Region's economy.

6. The Importance of Downtown Redevelopment and Historic Preservation

Historic preservation projects have been found to be very far-reaching. They touch many areas of the local economy such as finance, real estate, government, and affect retailing, employment and tourism. They are more labor intensive and create more new jobs than new construction. They contribute to the quality of life, improve the image of a community and in turn attract businesses and industrial development while fostering tourism. Restored historic buildings also serve well as locations for incubator businesses and provide stability to a neighborhood and community. In weighing relocation decisions, businesses place increasingly more value on quality of life considerations. Historic preservation provides a safeguard of our heritage, revitalizes neighborhoods and makes communities better places in which to live. Structural costs on an older building usually make up 5 to 20 percent of the total project cost, which is half the average expenditure of new construction. Investors and developers often judge a community’s vitality by the quality and character of the central business district. It has been found that even when a firm is going to locate in the suburbs, its image of
the area is formed largely by the appearance of the downtown area (National Trust for Historic Preservation, 1994).

Over the past few years Council staff has worked with 17 cities, towns and villages in the Region. These communities have blighted downtowns, commercial districts and neighborhoods. Master plans have been prepared which are designed to reverse the deterioration, instill new hope and expectations and reopen these areas for new economic development opportunities.

For example, since the planning charrette in 1987 and with the ongoing efforts of its Main Street Program, the City of Stuart has had several millions of dollars in public and private monies invested in its downtown area. The City of West Palm Beach has made multiple improvements to its downtown area resulting from a combination of a planning charrette, strategy development, financing and action planning of its Downtown Development Agency. Likewise, the City of Lake Worth has received large grants from the State and has secured local public and private funds for improvements to its downtown as a result of the planning charrette master plan done in 1993. The City of Boynton Beach has already begun to see investment ventures and serious inquires for more development based on the recent charrette master plan in 1994, and follow-up by its Downtown Development Agency. Most recently, the City of Fort Pierce has received commitments of several million dollars of public and private funds to do several projects based on the charrette master plan done in January 1995 and follow-up support of its Main Street Program.

7. Importance of Linkages

The Region's ability to efficiently move people, goods, and services is an important component of economic development. The Region has good transportation access to larger markets. The FEC and CSX railroads traverse the entire Region as do the Florida Turnpike and Interstate I-95. There are also two deep water seaports and a major regional airport. St. Lucie County International Airport has the potential to become another important commercial airport in the Region, increasing transportation linkages further. A State University and a number of community colleges and private and technical schools are located in the area. Still, the linkages of transportation within the Region to outside markets and to educational facilities can be improved.

Maintenance of the Region's existing roadway network, and expansion of airside, waterside, rail and other mass transit opportunities are needed to increase the mobility of the population, and the movement of goods. Continued improvement is needed in order to enhance the Region's attractiveness and competitive edge for economic development.

8. Developing Economic Clusters
Studies indicate that similar companies tend to locate together and form "clusters" of industries that have similar characteristics and require similar types of employees, products and services (Indian River County 1995). This is somewhat evident in southern Palm Beach County where high-tech companies have clustered (IBM, Siemen., Motorola., Northern Telecom Electronics, Philips Components). Pratt & Whitney, Northrop Grumman, Piper Aircraft are all aviation related industries located within a 25-50 miles radius of each other. An honors university and other higher educational facilities nearby create the potential for providing an education-aviation linkage that could establish a sound marketing foundation to attract related industries. Marine-related and aquaculture industries are in their early stages of development at St. Lucie County International Airport and represent a potential cluster opportunity. Such industry clusters should be capitalized upon in marketing the Region and linked to the Region's educational systems. With the institution of the net ban in the State of Florida, the aquaculture industry may increase in importance and presence in the Region. Clustering means all related industries as well as industries sharing their own products and benefiting from being located near related industries.

9. The Importance of Quality of Life

The Treasure Coast Region as a whole is perceived as having excellent quality of life. While this topic is subjective to a certain degree, there are commonly used criteria to describe quality of life components. These include the natural environment, recreation, culture, safety, education, housing and health services.

The large amounts of open space, strong efforts to expand educational and cultural facilities, public safety programs, and increasing health-related services, suggest that maintaining the quality of life is a high priority in the Region. The perception of an area having a good quality of life is critical for many businesses when determining whether or not to invest in an area. Studies indicate that cultural and natural assets form the basis for economic development in communities. The greatest attractions for economic growth are quality of life, natural environment, historic legacy and cultural context. These qualities and the character of a city influence a wide range of business and residential location decisions and can serve as either a dampener or catalyst for tourism and other economic and cultural activities. In relocation decisions, businesses place increasingly more value on quality of life considerations. Continuous investment in infrastructure as well as in various amenities (museums, theaters, sports, entertainment, recreation) are necessary to maintain a competitive posture. The arts, culture, and historic resources are big factors in a city’s quality of life and provide it with something more tangible - a leveraging tool. If a community wants to attract capital and investment, it must be prepared to call attention to its diversity, identity, and individuality. In addition, a continued effort should be made to maintain, improve and/or expand these amenities to sustain a quality of life that is enjoyed by the Region's residents and found attractive to outside businesses.
10. Youth Out-Migration

“None of the kids ever come back here to live after they’ve gone away to school.” A common concern voiced by many smaller communities across the country including the Region. Young people often go on to find jobs in industries or businesses far from where they grew up, or they go away to college or technical school and get the kind of training for which a small town, with its limited opportunities, simply cannot offer a demand. Out-migration of the young adults from smaller communities has been a trend intensified over time with the influence of television, catalogs, telephones, and other factors (Fremn & Wilson, 1976). Studies indicate that education is frequently related to youth out-migration. That is, people with some college education are considerably more migratory overall than those with only an elementary education, and nearly four times as likely to migrate across the state line. Generally, the higher the education level, the higher the rate of migration (McNeill, Adams, 1976). These factors continue to account for the out-migration of youths today, along with advances in telecommunications, computers, and other high tech activities which provide easy access to outside ideas and opportunities.

Out-migration of the youth is being viewed by many communities as a drain on their economic base and per capita income growth potential. Based on results of a focus group study that looked at the effects of youth out-migration on a community, it was estimated that the cost of care and education to a community for one child over a period of twenty years is at least $156,000. Consequently, a community with an out-migration of 100 youths per year would lose $15.6 million investment in one year or $156 million in a decade (Luke, 1995).

According to the study, those who migrate to other places are frequently a community’s “best and brightest,” leaving behind a larger percentage of the unskilled and less educated youths to develop the community’s future economic base and its income potential. To reduce this out-migration, communities need to begin to acknowledge and nurture their youth in their early working years by providing summer and part time jobs, and continually plan for their future as young adults who will one day have growing families. As an incentive for youths to remain in an area, there should be a continual surplus of quality jobs provided. There should be more emphasis placed on developing education-business partnerships that would provide the education to service high quality jobs needed to retain the youth and support a productive workforce.

With tighter budgets, community colleges and businesses are beginning to recognize the need to develop partnerships. With their own survival being threatened more aggressive community college administrators are seeking ways to make themselves more valuable to business, and businesses are relying more and more on community colleges to improve the skills of their employees and to retain high school graduates for the workplace (Florida Trend, Sept. 1995). Having realized that traditional educational methods of teaching are not meeting the
challenges being faced by today’s workforce as well as growing and established businesses, there has been a willingness by some educational institutions to bring the professor to or near the workplace to provide continued education programs or training needed to support companies (National Public Radio August, 1995). These types of efforts are crucial if communities, businesses and educational institutions in the Region are to remain viable and compete successfully with other regions in the nineties.

11. Establishing an Economic Development District.

Ongoing healthy economic growth is important if the Region is to remain competitive in national and global markets. To achieve this objective, a coordinated regional approach is needed to promote economic development in the Treasure Coast. This approach would establish the direction and support needed to meet multiple challenges produced by competitive, expanding economies. One method to achieve the objective is to have the Treasure Coast Region designated as an Economic Development District. This designation would increase the power of the Region to promote and help implement State, regional, and local economic development goals throughout the Region.

12. Incentive Programs

Incentive programs have become a popular method utilized around the country to attract companies to relocate. This trend has intensified over the last few years because of a reduction in the number of relocations in this country. According to NPR, an average of over 400 companies were relocating annually in recent years. In the last year, only approximately 200 companies have located/relocated within the United States. Due to labor costs and other factors, more and more companies are “going off shore.” This reduction makes competition among communities extremely severe.

There are extensive incentive programs offered by the State and local governments and used to attract businesses to an area. Most communities in the Region feel a need to provide incentives to remain competitive in today’s shrinking business relocation market. These programs frequently have direct or indirect impact on local citizens and should have local approval for successful implementation. Tax exemptions, abatement programs, business and employee relocation cost assistance, up-front cash investment, job creation investment vouchers, tax credits, local bond financing, utility deposit waivers, and tax avoidance programs, Downtown Development Authorities, and Community Redevelopment Agencies are examples of such programs utilized by communities. To the extent that the incentives used to attract economic development into the Region make fiscal sense, such incentives should be encouraged. Having the Region designated as an Economic Development District is an additional incentive and will complement existing incentive programs.
13. Targeted Industries

Counties in the Region have targeted certain industries they would like to foster, retain, expand, or relocate to the Region. The matrix below is a compilation of targeted industries identified by each county as desirable to have as job providers.

Table 3.11 Targeted Industries

<table>
<thead>
<tr>
<th>Targeted Industries</th>
<th>Indian River</th>
<th>Martin</th>
<th>Palm Beach</th>
<th>St. Lucie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace/Engineering</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Agriculture/Aquaculture/ Food Processing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Boats and Marine Related Manufacturing</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Business/Financial Services (Back Office Operation)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Electronic Related Industries (Computer /Communications)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Electrical Utility-related Industries</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Improvement Industries</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fabricated Metal Products</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Film Industry</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instruments Related Products</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Trade</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Machinery</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Medical Industries</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Transportation Hub Development Multi-modal Distribution</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastics Manufacturing</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printing/Publishing</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Sports</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism/Entertainment</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Source: IR Planning Dept; MC Business Development Board; PBC Economic Planning; SLC Chamber of Commerce
14. **Establishing and Increasing Better Locations for Economic Development**

Renovating and creating new locations for economic development and businesses in existing cities, towns, and villages is of highest priority. While it is likely that land outside these central locations will be sought for economic development, well-defined cities, towns, and villages provide fertile ground for business and commerce because of good transportation networks, dense infrastructure, close proximity of neighborhoods (employees) to workplace, high density of customers and support businesses, and proximity to cultural, recreational, and educational opportunities. In fact, there is evidence that corporate employers, as well as small business, seek these same attributes when scouting locations for relocating or establishing a base of operations.

Finding such locations outside of established central cities, towns, and villages is becoming increasingly difficult in the Region because of the unplanned, unfocused, and uncoordinated way it has recently developed. This kind of pattern of development does not create good and prestigious addresses for business. It limits economic development sites to a relatively thin layer of land which hugs the interstates and other large highways. It increases congestion and limits sites for those businesses that would like to become part of a close-knit community and play a positive, philanthropic role in its growth and development. This is of special concern because this is exactly the kind of economic development that should be highly sought for the Region.

More thoughtful local land use planning, zoning, and fiscal policy is needed to encourage patterns of development that will foster redevelopment and infill of existing cities, towns, and villages and cause new ones to form in a way that will increase good locations for economic development.
C. Significant Regional Resources and Facilities

1. Cultural Facilities and Historic Attractions
   All historical sites and structures on the State’s Historical Register list
   All archeological resources on the State’s Historical Register list
   Flagler Estate
   House of Refuge
   Raymond F. Kravis Center for the Arts
   Lyric Theater
   Elliot Museum
   Norton Museum
   Sunrise Theater
   Vero Beach Center for the Arts
   Old School Square Theater and Museum

2. Educational Facilities
   Public and private school, college and university systems

3. Regional Organizations
   Area Chambers of Commerce
   Areawide Agency on Aging and Its Contract Agencies in the Region
   Councils on Aging
   Economic Forum of the Treasure Coast
   Private Industry Councils
   St. Lucie River Initiative
   Treasure Coast Builders Association
   Treasure Coast Job Training Center

4. Recreation/Natural Resources
   Beaches
   Atlantic Ocean Beaches
   Natural freshwater lake systems
   Major sports arenas and complexes
   Blue Cypress Marsh Conservation Area
   Blue Cypress Lake
   Florida Intracoastal Waterway
   Ft. Pierce Inlet State Recreation Area
   Indian River Lagoon
   Johnathan Dickinson State Park
   Lake Okeechobee
   Lake Okeechobee Scenic Trail
   Loxahatchee River
   Sebastian Inlet State Recreation Area
   St. Lucie Inlet State Preserve
   St. Lucie River including North and South Forks
Atlantic Ocean
Loxahatchee National Wildlife Refuge
St. Lucie Inlet State Park
Pelican Island National Wildlife Refuge
Rotenburger Area
Holey Land Area
Dupuis Reserve
Pal-Mar Area
Savannas State Reserve
Sea Branch Reserve
MacArthur State Park
West Palm Beach Water Catchment Area
Old Indiantown Grade/Trail
Corbett Wildlife Management Area
Hobe Sound National Wildlife Refuge

5. Special Agricultural Resource Areas
Agriculture Reserve Area
Glades Mucklands

6. Transportation Infrastructure
Regional airport facilities
Florida intrastate highway system
Intracoastal waterway
Regional mass transit and railway systems
Port of Fort Pierce
Port of Palm Beach
Regional Roadway Network
D. Goals, Strategies and Policies

Regional Goal 3.1

An improved economy for the Region’s distressed communities.

Indicator:

Increase in per capita income.

Percent change in public and private investment in distressed communities.

Strategy 3.1.1: Carry out activities designed to assist distressed neighborhoods to share in the overall prosperity of the Region.

Policy 3.1.1.1: Attract investors to help broaden the economic base and strengthen the job market.

Policy 3.1.1.2: Encourage redevelopment projects which will promote economic opportunities.

Policy 3.1.1.3: Develop a preapproval program for projects in order to encourage investment and assist developers in the approval process.

Policy 3.1.1.4: Give a high priority to infill projects which are consistent with redevelopment plans for the area.

Policy 3.1.1.5: Support local efforts to address the problems of distressed communities. For instance, assist the Glades redevelopment efforts by supporting the development, enhancement and promotional activities of the Glades area that include eco-tourism development, potential establishment of a regional version of the Main Street program and the launching of a promotional campaign and procurement of funds to support these programs.
Regional Goal 3.2

An extended agricultural season, expanded agricultural activities, and a sufficient agricultural land base to increase the sustainability, expansion, and diversification of agricultural activities throughout the Region.

Indicator:

Percent change in agriculture land acreage.

Change in types of agriculture activities.

Strategy 3.2.1: Extend the agricultural season.

Policy 3.2.1.1: Expand the agricultural season by producing value-added goods for distribution throughout the nation and the Caribbean basin.

Policy 3.2.1.2: Develop specialty foods, farmers market products, and food processing industries to increase and diversify the agricultural economic base and extend the agricultural employment season.

Policy 3.2.1.3: Develop an organic vegetable market to offset competition from international imports, meet the increasing public demand, and extend the agricultural season.

Strategy 3.2.2: Expand agricultural and aquaculture activities.

Policy 3.2.2.1: Develop alternative crop potential in the Region to help diversify the agricultural economic base.

Policy 3.2.2.2: Encourage, maintain and expand industries such as equine and aquaculture to increase and diversify agricultural activity and encourage continued agricultural land use.

Policy 3.2.2.3: Encourage and support agricultural and aquaculture research and development activities.

Strategy 3.2.3: Maintain a sufficient agricultural land base.

Policy 3.2.3.1: If local governments determine that the redesignation of agricultural land is necessary to meet urban needs, new future land use map designations should require preferred forms and patterns of development.
Policy 3.2.3.2: Implement voluntary programs such as Purchase of Agricultural Conservation Easement (PACE) or other conservation easement programs and incentives that would help sustain, expand, and promote the agricultural industry in the Region.

Regional Goal 3.3

Maintenance and expansion of the tourism sector of the Region’s economy.

Indicator:

Percent change in number of tourists visiting the area.

Strategy 3.3.1: Maintain and improve existing features which are attributes to the attraction of tourists.

Policy 3.3.1.1: Protect the Region’s natural resources and countryside to ensure their continued existence for the benefit and enjoyment of future generations.

Policy 3.3.1.2: Protect and, where appropriate, adaptively reuse the Region’s historic sites and buildings to preserve its heritage, promote economic development, enhance quality of life, and add to the tourist experience. Sites and buildings should be restored using appropriate State and federal guidelines.

Policy 3.3.1.3: Support local initiatives to preserve the Region’s art, architecture, natural heritage and cultural heritage.

Policy 3.3.1.4: Beautify and landscape major transportation corridors to promote the image and natural beauty of the Region.

Strategy 3.3.2: Initiate marketing efforts and seek new opportunities to promote tourism.

Policy 3.3.2.1: Market the Region as a vacation destination with multiple outdoor recreation and natural amenity resources, historic sites, cultural activities and facilities.

Policy 3.3.2.2: Promote and market entertainment and sports activities in the Region domestically and internationally to increase the Region’s tourism market.

Policy 3.3.2.3: Increase cooperation between public agencies and private organizations to present a unified positive image of the Region, for example
through beautification programs along highly traveled highways and major entrances to the Region.

**Policy 3.3.2.4:** Develop eco-tourism opportunities to help extend the tourist season in the Region, help sustain large areas of open space, preserve natural habitat, discourage sprawling, low-density development, and broaden the Region’s economic base.

**Policy 3.3.2.5:** Encourage and strengthen the role of sports activities in economic development by attracting and soliciting amateur and professional multi-sports events throughout the Region.

---

**Regional Goal 3.4**

Patterns of development which are proportionately less costly to provide with public services and facilities, and the redevelopment and revitalization of older communities into important and viable economic centers of the Region.

**Indicator:**

*Number of communities which adopt redevelopment and revitalization plans.*

*Percent change in public and private investment in older communities.*

**Strategy 3.4.1:** Promote patterns of development which allow public services and facilities to be provided more cost effectively.

**Policy 3.4.1.1:** Encourage the use of compact, mix-use development and redevelopment projects that are less costly to serve, have less impact to the natural environment, and help strengthen the economies of existing urban areas.

**Policy 3.4.1.2:** Coordinate land use planning and the provision of public facilities to assist the private sector in building preferred forms of development and to create infill and redevelopment opportunities.

**Policy 3.4.1.3:** Non-preferred forms of development which occur in undeveloped areas should be responsible for and bear the full and true infrastructure costs to support the development through buildout.

**Policy 3.4.1.4:** Develop a tiered system of impact fees which recognizes cost differences of providing public services to development based on the size, type, form, location, and service demands of the development proposed.
Strategy 3.4.2: Return older communities to their historic prominence as important and viable economic centers through redevelopment and revitalization.

Policy 3.4.2.1: Give high priority to infill projects in order to discourage suburban sprawl and encouraging sustainable economic development.

Policy 3.4.2.2: Simplify and shorten the review process which applies to infill, redevelopment, and preferred forms of development to the extent that the public’s health, safety and welfare are not compromised.

Policy 3.4.2.3: Provide assistance to developers who propose infill, redevelopment and other preferred forms of development.

Policy 3.4.2.4: Local governments should provide concurrency assistance for redevelopment, infill, and new economic development projects that meet preferred development form criteria.

Policy 3.4.2.5: Provide financial incentives for infill, redevelopment, and new economic development projects that meet preferred development form criteria.

Policy 3.4.2.6: Provide a menu of tax incentives to be offered to infill, redevelopment, and new economic development projects which follow preferred development form criteria.

Policy 3.4.2.7: Increase public investment and assistance to foster infill, redevelopment, and refurbishing of infrastructure in existing urban areas.

Policy 3.4.2.8: Utilize appropriate business incentive programs that would attract outside businesses and assist retention and expansion of existing businesses.

Strategy 3.4.3: Recognize and support the value of historic properties.

Policy 3.4.3.1: As a viable option to new construction, restore and rehabilitate historic sites and districts as an efficient usage of existing infrastructure (roads, water, sewer, gas, electricity and telephone lines).

Policy 3.4.3.2: Fund historic preservation projects to help safeguard community heritage, contribute to the quality of life, revitalize older communities, and promote local economic development and diversification.

Policy 3.4.3.3: Establish tax abatement ordinances that will grant tax relief to qualified historic restoration properties.
Regional Goal 3.5

Improved transportation and education linkages throughout the Region.

Indicator:

Increase in number of commuter transportation services linking education and workplace facilities.

Strategy 3.5.1: Support and encouraged better transportation linkages to service residence, the workforce and students in the Region.

Policy 3.5.1.1: Improve multimodal transportation opportunities throughout the Region in order to provide better access to educational and workplace facilities.

Policy 3.5.1.2: Provide better transportation linkages between workplace and educational facilities.

Policy 3.5.1.3: Provide commuter and long distance passenger service on the FEC right-of-way throughout the Region and beyond.
Regional Goal 3.6

Diversification of the year-round economy and establishment of an economic climate that will allow the Region to compete effectively in the global economy.

Indicator:

Percent change in foreign trade activity.

Strategy 3.6.1: Support efforts to diversify the Regional Economy and to make the Region an effective competitor.

Policy 3.6.1.1: Local governments should develop areawide land use plans that will increase opportunities for business and commerce.

Policy 3.6.1.2: Recruit desired businesses that would provide year-round employment opportunities.

Policy 3.6.1.3: Identify locations for and encourage development of economic clusters for business that would benefit from being located near related industries in the Region.

Policy 3.6.1.4: Support the development of clean industry clustering (e.g., aerospace, marine, aquaculture) at appropriate locations in the region, as identified by county and local economic/business development organizations.

Policy 3.6.1.5: Local economic councils and organizations should prepare and maintain an inventory of preferred business programs, housing stock and available sites to accommodate future businesses in the Region.

Policy 3.6.1.6: Support public/private communications, and provide an atmosphere for international trade to occur in the Region.

Policy 3.6.1.7: Local governments should work with economic councils and business and community developers to determine ways in which regulatory (permitting) processes could be made more user friendly.

Policy 3.6.1.8: Establish a Treasure Coast International Trade task force or consortium to contact and work with international trade business agencies to help develop and promote international trade in the Region.
Policy 3.6.1.9: Promote development of foreign trade zone services to the Region.

Policy 3.6.1.10: Encourage synergy among manufacturers in the Region to share technology and knowledge with each other.

Policy 3.6.1.11: Provide incentives to encourage and enhance film industry and cluster development in the Region.

Strategy 3.6.2: Establish procedures and tools to encourage business development and assist economic development in the Region by including an Economic Development Element in local comprehensive plans.

Policy 3.6.2.1: Establish a point-person or interagency/inter-department permit team within local government whose purpose is to assist in facilitating the movement of preferred economic development projects through the regulatory process.

Policy 3.6.2.2: Local economic development organizations should establish an Economic Development Program to assist start up incubator businesses.

Policy 3.6.2.3: Establish a program to assist developers/businesses in locating appropriate facilities for their relocation needs. Provide information on those who are willing to build to the specifications of such businesses.

Policy 3.6.2.4: Encourage a public/private partnership to build the necessary infrastructure that will support expansion of clean industries, and will attract higher income industries to the area.

Regional Goal 3.7

Education/business cooperative programs which foster economic growth in the Region.

Indicator:

Number of new education/business partnership programs.

Strategy 3.7.1: Provide appropriate educational opportunities, programs and facilities to meet business needs.
Policy 3.7.1.1: Develop more vocational and higher educational facilities to encourage outside investors to locate in the Region.

Policy 3.7.1.2: Cultivate education/business partnerships to encourage and develop education/training support programs that will benefit existing businesses and employees, and encourage high-tech, and research and development businesses to locate in the Region.

Policy 3.7.1.3: Work closely with school officials and the media in order to present a positive image of the Region’s educational system.

Policy 3.7.1.4: Attract industry and continually provide a surplus of jobs that will allow the Region’s educated youth in the Region to stay and work in the Region.

Policy 3.7.1.5: Market the Region as a whole as a way to attract large, new employers to the Region.

Policy 3.7.1.6: Establish an introductory and annual refresher education program on economic development for local elected officials and planning staff. The program should include the basic strategies associated with economic development in the Region and those initiatives being supported by local economic development councils and boards.

Policy 3.7.1.7: Encourage and support research and development opportunities provided by the Harbor Branch Oceanographic Institute, USDA Laboratory, IFAS, Smithsonian Institute, and Florida Atlantic University, etc., to encourage and enhance clustering of high tech businesses, and to support expansion of manufacturing agriculture/aquacultural, marine and tourism industries in the Region.

Regional Goal 3.8

Establish the Treasure Coast Region as a Regional Economic Development District.

Indicator:

Establishment of the Treasure Coast Regional Development District

Strategy 3.8.1: Initiate efforts necessary to support regional economic development.
Policy 3.8.1.1: The TCRPC should prepare a Regional Overall Economic Development Plan in cooperation with local economic development agencies and submit it for approval. The Regional Plan shall support and be a complement to county Overall Economic Development Plans.

Policy 3.8.1.2: Maintain economic development staff to carry out regional economic development initiatives and to support local economic development efforts consistent with the Strategic Regional Policy Plan.

Policy 3.8.1.3: Local governments should prepare and adopt economic development elements as part of their comprehensive plans.

Policy 3.8.1.4: The Regional Planning Council should support regional coordination among chambers of commerce and other economic development agencies to promote regional economic development.
4. Education

A. Trends and Conditions

1. Introduction

Education is one of the most important issues in the Region. It is a critical issue because it will help determine the future of our citizens and communities. Education is a controversial topic of discussion in the communities of the Region as well as the entire nation. The Goals 2000: Educate America Act in 1994 outlined eight national education goals. These goals are similar to those outlined in Florida’s Blueprint 2000, which was adopted in 1991. Blueprint 2000 and the Educate America Act are the latest attempts at educational and societal reform. These reforms are different because they include accountability, flexibility and recognition of successful results.

The attainment of these goals, however will require the participation of everyone—parents, teachers, administrators, local government officials, civic and business leaders. Commissioner of Education Frank Brogan said in a speech at the Eighth Annual Growth Management Conference, “The problems are so large, the only way to fix them is to work together.”

Florida’s public school system is the fourth largest in the nation. Approximately 2.3 million students attended school in Florida in 1993-94. There are four school districts in the Treasure Coast Region: Indian River, Martin, Palm Beach and St. Lucie. Over 170,000 students are enrolled in the Region’s 237 public schools. The Region’s student population in the year 2000 is expected to reach 208,000 students.

TABLE 4.1

COMPARISON OF PUBLIC AND PRIVATE SCHOOL ENROLLMENT IN THE FOUR COUNTIES, REGION AND STATE FOR 1990 AND 1993

<table>
<thead>
<tr>
<th>Total Enrollment</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River</td>
<td>12,425</td>
<td>13,381</td>
</tr>
<tr>
<td>Martin</td>
<td>12,724</td>
<td>13,776</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>115,255</td>
<td>130,124</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>22,778</td>
<td>25,173</td>
</tr>
<tr>
<td>Region</td>
<td>163,182</td>
<td>182,454</td>
</tr>
<tr>
<td>State</td>
<td>1,973,349</td>
<td>2,150,504</td>
</tr>
</tbody>
</table>
2. **Student Performance**

By improving the performance of students, the Region’s economy will ultimately benefit from an enhanced and skilled workforce. The cost of students dropping out and becoming dependent on the welfare system can be quantified and compared to the cost of dropout prevention programs. Drop out prevention is less costly than programs to support those who become dependent on public welfare or turn to criminal activities.

While reform in education is not new, accountability with standards in reform is new. The national and state goals outline proficiency in specific areas at specific grades. The State’s goals go even further by measuring the success or failures of individual schools.

Other measures of student performance include the number of students continuing their education after high school and the dropout rate. In the 1992-93 school year, 91,000 students graduated from Florida’s high schools. Of those graduating, almost 66 percent planned to continue their education. Over 7100 students graduated from the Region’s high schools and only 37 percent planned to continue their education at postsecondary schools or technical institutions. In 1993-94, the dropout rates in the Region ranged from 3.7 percent in Indian River County to 6.2 percent in St. Lucie County. The State’s dropout rate was 5.6 percent in 1993-94.

3. **Skilled Work Force**

There is a vital link between education and the economy. The students of today are the human capital of tomorrow.

In the past, learning a trade was enough to find and keep a job. Many of the jobs of the future will require a higher level of not only basic skills (reading, writing and mathematics), but thinking skills such as problem solving. Business and industry leaders know a well-educated labor force is needed if we are to compete in a global economy. In recognition of the global competition and the need for skilled workers, national education goals stress achievements in math and science at an international level.

The importance of education to business is evident by the many local partnerships in all of the Region’s counties, to increase the quality of education in their immediate areas. In addition, cooperation between businesses and the community college systems will be necessary to meet the technological and vocational demands of the future work force. The quality of education in a community can impact major economic decisions such as corporate relocation.
4. Intergovernmental Coordination

The siting of public facilities such as schools has a powerful affect on patterns of development. The timing, pace, form and type of development, and the cost of providing services to an area are all greatly influenced by where and how schools are sited. This is why it is vitally important to have local government and school board staff and officials equally involved in school siting decisions. The level of coordination and planning between school boards and local governments varies throughout the Region. It is safe to say, however, that the coordination, planning, and decision-making process affecting school siting can be improved.

Coordination between local governments and school districts has been strengthened and emphasized in the Educational Facilities Act of 1995. The requirement for improved coordination is a recognition that the problems are too big for school districts to solve alone; that there are limited resources; and that education is a shared effort.

The tremendous growth in the Region impacts the four county school districts. For example, Palm Beach County School District experiences an annual increase of 5000 students per year. Almost 50 percent of the elementary schools in the Region are filled to over 110 percent of their design capacities. The critical need for new schools in Palm Beach County has spurred the creation of a task force spearheaded jointly by the Board of County Commissioners and the School Board. This task force is exploring levels of service and funding opportunities for the backlog and future needs.

The coordination required under the Educational Facilities Act should greatly improve the fulfillment of shared goals and objectives. A specific goal of many local governments in the Region is the continued investment, both public and private, in the coastal areas. The maintenance and revitalization of coastal schools play a key role in the efforts of local governments to revitalize areas of their communities.

5. Schools, Community, and Patterns of Development

The provision of quality schools is important to the success of a community. Perhaps no one thing in a town or neighborhood can help to establish the bonds of an authentic community between its citizens better than access to high quality public schools located in the center of or within the fabric of a neighborhood. In this regard, the children living within a community should be allowed to attend schools either in the neighborhood (that is within walking distance of their residents), or within a relatively short bus ride from those residences. It is equally important that the schools serving these children afford each of them an appropriate, high-quality education.
Currently, the Palm Beach County and St. Lucie County school districts are using student assignment plans other than strict geographic attendance zones to maintain compliance with federally mandated racial desegregation goals. This means that some students from one town or neighborhood may be bused to attend school in another town, neighborhood, or area. Although the parents of many of these students would prefer that their children not be transported outside their immediate community because of concerns over severing youthful friendships, safety, etc., many others have chosen less proximate schools because of curriculum or other offering (magnet programs, for instance) that are more appropriate to the particular educational needs of their children. However, schools that are disconnected from the urban areas they serve and school bus rides that are unreasonably long in time or distance may limit a neighborhood that is endeavoring to establish strong community bonds.

In contrast, choice programs, whether presented through district-wide magnet schools or controlled choice plan, provide parents and students with a broad range of educational options without predetermining a particular school based solely on a place of residence. Moreover, in high growth areas having varying population densities, such as the Treasure Coast Region, choice programs often provide more stability than standard geographic attendance zones, which must be redrawn each time a new school is added or demographic shifts occur. Such programs have evolved as a necessity and represent a compromise between providing quality education opportunities and responding to the Region’s sprawling settlement patterns and federally mandated racial desegregation goals.

Communities value choice in education. Magnet and controlled choice student assignment plans strive to foster innovative education by affording choices from among a number of schools that are available to each family. Moreover, the importance of neighborhood schools is often recognized within these student assignment plans by proximity preference. Overall, the perception of equitable educational opportunities for all students, through choice, is considered by some to be as important to a local community as the availability of access to the most proximate school. Indeed, some studies have demonstrated that when students are given a choice to attend either the most proximate school or school outside the neighborhood, as many students choose to attend a school outside the neighborhood as choose the most proximate facility. Usually these decisions are driven by educational opportunities and programs that vary from school to school within a system that is endeavoring to afford its students a variety of educational options, and are not based on the inherent value of neighborhood schools to strengthen the structure and public realm of a community.

Over the last 40-50 years, and especially in Florida, suburban development types which foster and require wide separation of uses have prevailed. In many cases, these
suburban development types have resulted in economic, social, and even racial segregation. In nearly all cases studied, these housing developments, by their own design, evolved into large, isolated monocultures creating unnaturally large pockets of rich, poor, and middle class; black, white, and Hispanic; and old, middle age, and young people scattered across the landscape, with no relationship to one another. Schools have been sited and constructed or have evolved to accommodate these large monocultures which resulted in a similar monoculture of students. As these developments were allowed to spread further and further away from the more racially mixed urban areas, the chance for any natural balance was lost.

It can be argued that imbalances caused by sprawling low-density patterns of development were unknowingly required by our own land use plans. Only recently has this development type and land use pattern come under serious question by planning professionals and education officials as the potential root cause for a variety of ills being experienced today. As noted above, among the problems created by sprawling, low-density development is segregated housing patterns. Such patterns render far more difficult a school system’s ability to maintain desegregation in student assignment.

Neighborhood schools can also play a role in local government’s efforts to stabilize areas and promote a sense of community. The presence of a school in a neighborhood can increase community activity, spirit, and pride. As noted above, however, a school district may elect to seek a similar result by affording each neighborhood access to a variety of high quality educational programs, each within a reasonable distance of that neighborhood. It is not completely clear at this point on how successful this strategy will be over the long term and what affect it will have on the structure, maintenance and quality of existing neighborhoods and communities.

The Palm Beach County School District has researched the concept of school size and its relationship to learning and the associated costs of smaller versus larger. There is evidence to suggest that dropout rates, violence and school involvement and pride are directly related to the number of children in attendance (i.e., the larger the school’s student population the greater the propensity for problems). There is also evidence, however, that smaller is not always or necessarily better, and nationally, the issue of smaller versus larger schools is being debated. School districts should be supported in their efforts to create and maintain smaller schools that are more proximately located to their respective student bodies when those efforts comport with sound education principals and reasonable fiscal planning. A community’s most precious resource is its children, and each school district should be encouraged to maintain a broad range of options for its students including, when feasible, providing access to schools within walking distance of the neighborhood. The unquestioned benefits of a safe, intimate and supportive learning environment, however that goal is achieved, are smarter, happier and safer children.
Since education is one of the most important issues facing the Treasure Coast region, the public and private school systems are considered to be regionally significant resources. The school systems directly affect the everyday lives of Treasure Coast residents through economic development opportunities, quality of life and public investments. Each school in the region is a regionally significant resource as part of the larger system. It is at the level of the individual school where the future of the region is being molded.
B. **Important Regional Issues**

1. Many students in the region are under prepared or unprepared for the work force of the 21st century.

2. The Treasure Coast Region falls short of the State’s total percentage of students continuing their education.

3. The ever-changing economic environment requires an immediate response to the needs of business and industry.

4. Society can no longer afford the autonomous decision making of school districts and local governments.

5. Expanded joint efforts of local governments and school districts are needed to realize and actualize common goals.

6. Sense of community, patterns of development, and the cost of providing public services is affected by the location of schools.

7. Schools are being built to accommodate larger populations of students.

8. Low-density, sprawling patterns of development are reducing opportunities for establishing neighborhood schools, increasing the length and frequency of student bus trips, and increasing the costs of providing schools and student transportation.

C. **Significant Regional Resources and Facilities**

1. All public and private school, college and university systems.

2. All public library systems.
D. Goals, Strategies and Policies

Regional Goal 4.1

A more highly skilled and educated work force through improved student performance.

**Indicator:**

*Increase in the percentage of students in the Region continuing their education either at postsecondary colleges and universities or technical institutions.*

**Strategy 4.1.1:** Develop an educational curriculum with programs that meet the existing and future employment needs of Region.

**Strategy 4.1.2:** Develop an educational system with programs that respond to the special education and learning needs of all children.

Regional Goal 4.2

Educational programs that respond to the needs of the Region.

**Indicator:**

*Increase in the number of educational programs and partnerships.*

**Strategy 4.2.1:** Develop, encourage and foster cooperative partnerships between education, business and industry to address the needs of the business community in the 21st century.

Regional Goal 4.3

Improved planning, coordination and cooperation between local governments and school districts.

**Indicator:**

*Number of local governments with interlocal agreements with school districts.*
Strategy 4.3.1: Make all school siting decisions a cooperative effort between school districts and local governments.

Strategy 4.3.2: Local school districts in coordination and agreement with local governments should adopt level of service standards for public schools and include a financially feasible public school capital facilities program in the local government capital improvement element.

Strategy 4.3.3: Establish a task force within each county to facilitate the coordination of local governments and school districts.

Strategy 4.3.4: Implement and monitor the requirements of the Educational Facilities Act.

Strategy 4.3.5: Recognize and support the importance of schools in the efforts of local governments to revitalize and stabilize existing communities.

Strategy 4.3.6: Provide support to school districts in locating new school sites by coordinating technical assistance from local governments and other applicable, local, regional and state agencies.

Strategy 4.3.7: As suggested by the “Act Relating to Educational Facilities,” include educational facilities elements in local government comprehensive plans.

Strategy 4.3.8: Through interlocal agreements, local governments and school districts should develop procedures for siting of schools, facilitating the development review process and coordinating public investment in infrastructure.

Strategy 4.3.9: Support implementation of school concurrency as a means to ensure the availability of educational facilities.

Regional Goal 4.4

Increased development and redevelopment of neighborhood schools.

Indicator:

Number of new schools located in existing neighborhoods.

Strategy 4.4.1: Encourage patterns of development that will create new towns and neighborhoods and foster redevelopment of existing urban areas.
**Strategy 4.4.2:** Reduce the length and frequency of student bus trips by promoting the development of neighborhood schools.

**Strategy 4.4.3:** Recognize the differences between urban and suburban, and neighborhood and non-neighborhood locations and adjust school design and size requirements consistent with the scale, character, and architecture of the area.

**Strategy 4.4.4:** Restore and reopen existing neighborhood schools in urban communities of the Region when consistent with sound education principles and reasonable fiscal planning.

**Strategy 4.4.5:** Support the decentralization and reduction in size of school facilities as an option to improve the quality of the learning environment and the safety of students.

**Strategy 4.4.6:** Increase the sharing of public school recreational and building facilities with the community.

**Strategy 4.4.7:** Maintain and strengthen the role of schools in communities.
5. Emergency Preparedness

A. Trends and Conditions

1. Introduction

To many Treasure Coast residents, the term emergency preparedness is most often associated with hurricanes and those community or personal precautions utilized to lessen the immediate effects of such events. This impression is only partially correct. As recently witnessed here in Florida and in many other parts of the nation, our population has become so large and society so dependent upon technology that any major disaster, either natural or manmade, causes extensive recovery and redevelopment costs. Furthermore, these immediate costs do not reflect long-term social, economic, and ecological impacts. Such events do not recognize any political boundaries; the Region is just as susceptible to experiencing a disaster as anywhere else in the nation.

This plan element addresses the concept of modern comprehensive emergency preparedness and how its application will affect the immediate and long-term future of the Treasure Coast Region. In order to better understand the significance of emergency preparedness and its intrinsic link to planning for the vitality and well-being of the Region, a brief review of regional characteristics is necessary.

POPULATION GROWTH

The Region has become noted for its pleasant year-round climate, affordable lifestyle, unparalleled lakes, rivers, tidal inlets and waterways, abundant and diverse wildlife, and some of the finest ocean beaches in the United States. It is therefore not surprising that the area, comprised of Indian River, Martin, Palm Beach, and St. Lucie Counties, is one of the most rapidly growing in the State. In fact, according to the 1990 U.S. Census of Population, regional growth rate in population for 1980-1990 was 57.6 percent. The Treasure Coast Region is currently the fourth largest of Florida’s eleven Regions based on population. In 1987, Florida replaced Pennsylvania as the fourth most populous state behind California, New York, and Texas. The State’s 1994 population was nearly 14 million and the Region’s population was estimated at over 1.3 million. The population density of the Region was 356 persons per square mile, ranking well above the national average for coastal population density of 237 persons per square mile, but below Florida’s coastal average of 417 persons per square mile (Institute of Science and Public Affairs, 1994). Higher population densities, while desirable when justifying expenditures for the enhancement of public transit systems and other population-intensive infrastructure, require special planning considerations with regard to emergency preparedness. This is especially so when populations are concentrated in traditional at-risk areas such as barrier islands, waterfront areas with ocean access, flood plains, and mobile homes.
For example, emergency management officials within the Treasure Coast Region estimate that there are approximately 466,200 residents who may be vulnerable to the effects of a Category 3 hurricane event (USACOE et. al, 1994). This figure is based on 1990 population figures, highest seasonal occupancy, and includes those persons residing in mobile homes and areas subject to storm surge. It is noteworthy that the figure given is for a storm event less severe than Hurricanes Hugo (1989) or Andrew (1992). Table 5.5 lists the greatest estimated storm surge heights for hurricane Categories 1, 3, and 5, and worst case vulnerable populations for low and high seasonal occupancy.

State and regional population growth is largely due to influxes of retirees, workers and their families, and foreign immigrants and refugees. Between 1980 and 1990, approximately 87 percent of Florida’s growth was the result of net migration, and retirement-age persons comprised a sizable portion of this migration. Because the elderly often have specialized health care needs, it is important to note that nearly 20 percent of the State’s population is 65 years of age or older, and that in the Treasure Coast Region the average is a bit higher at approximately 25 percent of total population (BEBR 1994).

Table 5.2
1990-1993 Population Growth, Natural Increase, Net Migration, Elderly Residents

<table>
<thead>
<tr>
<th></th>
<th>Net Change, 1990-93</th>
<th># Natural Increase</th>
<th># Net Migration</th>
<th>1993 Total Population</th>
<th>Age 65 + 1993</th>
<th>% of Total Age 65 +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River</td>
<td>5,433</td>
<td>(59)</td>
<td>5,492</td>
<td>95,641</td>
<td>26,214</td>
<td>27.4</td>
</tr>
<tr>
<td>Martin</td>
<td>5,880</td>
<td>124</td>
<td>5,756</td>
<td>106,780</td>
<td>29,252</td>
<td>27.4</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>54,720</td>
<td>6,697</td>
<td>48,023</td>
<td>918,223</td>
<td>221,153</td>
<td>24.1</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>13,021</td>
<td>2,311</td>
<td>10,710</td>
<td>163,192</td>
<td>34,541</td>
<td>21.2</td>
</tr>
<tr>
<td>Region</td>
<td>79,054</td>
<td>9,073</td>
<td>69,981</td>
<td>1,283,836</td>
<td>311,160</td>
<td>24.2</td>
</tr>
</tbody>
</table>

Source: 1994, Florida County Rankings, University of Florida.

Given the Region’s relative economic health, it is reasonable to assume that those functions and service mechanisms which sustain a large and growing population have increased proportionately. Despite delays in meeting certain infrastructure needs, the Region has experienced the development of 25 airports and landing strips, two major ocean ports of entry, three freight or passenger railway systems, health services facilities, chemical pipeline networks, nuclear and conventionally fueled power generating facilities, potable water and wastewater treatment facilities, and roadway networks.

DEVELOPMENT TRENDS
Regional population growth and development reflect State trends. Since 1950, Florida’s population has grown from under three million to nearly 14 million, and coastal counties have absorbed approximately 80 percent of this growth (FDCA 1995). The geographic elements which make barrier islands and coastal areas most desirable to people paradoxically subject them to greater exposure from natural disaster hazards. Construction within these vulnerable areas eliminates the natural mitigative effects that island dunes and shoreline vegetation provide against hurricane storm surge, and greater coastal population densities mean that more residents and infrastructure are at risk now than ever before. According to the Florida Division of Emergency Management, this growth has impacted the State’s ability to keep up with the demands for bridge and road construction and the ability of local public safety agencies to quickly and efficiently evacuate and shelter residents when threatened by a major hurricane.

The Region’s rapid population growth has also intensified the rate of suburban development in flood-prone areas. These areas, originally wetlands drained for agriculture, have for the past three decades undergone substantial commercial and residential development. When these commonly upscale developments experience flooding, the impacts on regional, State, and federal resources are significantly greater than when such flooding occurred prior to development.

Other important factors which directly affect regional emergency preparedness are past and current development and redevelopment practices. Throughout the United States, suburban development planning has essentially remained unchanged since the late 1940s, and the same is true for development within the Treasure Coast Region. Today, the approval and construction of poorly planned regional developments is manifested in large pockets of isolated, unconnected residential areas. When analyzed in terms of emergency preparedness, these illogical development patterns tend to exacerbate the problems associated with disaster response and recovery.

COMMUNITY DESIGN AND PATTERN OF DEVELOPMENT

A well-planned and designed community will greatly enhance the success of post-disaster relief and recovery efforts. This statement is based upon and strengthened by what occurred in the aftermath of Hurricane Andrew. Several of the afflicted communities were served by limited ingress and egress or almost completely isolated by walls, gates, or canals. They had no recognizable community or neighborhood centers such as common areas or public squares, no centralized public buildings, and lacked a well-defined network or grid of streets. These factors contributed to preventing or delaying the establishment of medical relief centers; food, water, and essential provisions distribution centers; debris removal and road clearing efforts; the staging, storage, and deployment of recovery equipment and resources; law enforcement personnel from effectively suppressing looting or providing protection to storm victims; and efforts to stop the spread of diseases. In many instances, relief workers were forced to set up aid centers in isolated strip mall parking lots, only to find that stricken residents could not travel to them for assistance. For example, when debris-clogged streets rendered
automobiles useless, these sites were situated too far from residential areas for even uninjured victims to walk for assistance. After most of the street signs had blown away, emergency response and relief personnel often had no idea where they were. Rescue units frequently lost their way in areas characterized by a lack of discernible landmarks, aimlessly curving streets, ravaged homes, and cul-de-sac dead ends.

BUILDING CODES

Certain structural code requirements which prescribe regional construction practices do not conform to those utilized in other Regions. After Hurricane Andrew, changes were implemented in certain State and local building material and structural codes in an attempt to improve or standardize them. However, the Florida Department of Community Affairs (DCA) suggests that these changes may not be enough to mitigate extensive damage or complete structural failure under hurricane high wind loads. In its 1995 Florida Land Plan: the State Land Development Plan, the DCA stresses continued development, adoption, implementation, and enforcement of effective building codes. The plan indicates that State and local design wind force levels may be inadequate, and that performance-type code requirements may not effectively ensure safe structural response. Some of the major areas of concern which the plan recommends for review include: State-wide standardization of building code criteria for wind design, including roof, window, doorway, and garage door requirements; greater restraint on the part of local regulatory agencies to approve applications for variances to building codes, flood plain development restrictions, and other land use ordinances; requiring that the construction of State-owned and financed structures be subject to local building codes; requiring that buildings which sustain less than substantial damage be required to comply with current building codes during the repair process; more effective inspections during the construction process; and uniform, consistent enforcement of building codes.

Emergency planners now realize that in the event of a hurricane, no area is safer than another. Prior to Hurricane Andrew, it was presumed that coastal areas would sustain the greatest damage and loss of life, whereas inland areas would fare somewhat better and provide relatively safe havens for evacuees. This was not the case; in fact, just the opposite occurred. Clearly, the Region’s development practices and land uses, regardless of location, impact emergency preparedness planning and the safety of its citizens. There should be little doubt that well-planned community development and redevelopment will positively influence public safety and disaster recovery efforts.

ROAD NETWORK, EVACUATION AND CLEARANCE TIME

A considerable segment of the Region’s population reside in coastal areas which have been designated by county governments as hurricane evacuation zones. These zones are delineated, topographically and roughly conform to levels of vulnerability based upon hurricane severity defined by the Saffir/Simpson Hurricane Intensity Scale and hurricane storm surge models (see Table 5.6 on page 5-10). When a hurricane threatens, the National Weather Service (NWS) will issue a hurricane watch for a designated stretch of coastline 36 hours prior to projected storm landfall. Twenty four hours prior to landfall, the NWS will issue a hurricane warning. At some point prior to the issuance of a
hurricane warning, emergency management and elected officials in the counties where impact is projected to occur must determine whether they will implement their evacuation procedures and if so, at what level of vulnerability the evacuation will be carried out. These can be very difficult decisions, as the NWS storm tracking projections and resulting warning bulletins are not infallible. Any variations from projected storm path, severity or estimated time of landfall will affect the evacuation process.

During an evacuation, a large number of vehicles must be moved across a road network in as short a time as possible. The number of vehicles will vary according to the severity of the storm, presence of seasonal residents and visitors, simultaneous evacuations in neighboring jurisdictions, and certain behavioral response characteristics of the evacuating population. Ideally, the goal of local emergency managers is to relocate all affected residents to safe areas within the 24-hour hurricane warning period, as far in advance of storm landfall as possible. This goal is measured as evacuation clearance time, or the time it takes to clear a county’s roadway of all evacuating vehicles. Timely evacuation may be hindered by the limited capacity of the road network within and through an evacuating county, the choice or need of evacuating residents to seek shelter outside of the county, and by gridlock caused by large numbers of evacuees fleeing through the county from some other locale. Regional critical evacuation links and intersections, by county, are listed under Regionally Significant Resources and Facilities.

The Treasure Coast Region is susceptible to the accumulation of lower South and Southwest Florida evacuation vehicles. According to the 1994 Treasure Coast Hurricane Evacuation Study, Transportation Analysis, the Region’s in-county clearance times were found to range anywhere 12 to 19 hours for Category 3-5 hurricanes, and that clearance times for Florida’s Turnpike and Interstate 95 out-of-Region evacuation movements ranged from 40 to 55 hours, depending on the storm scenario. A complete listing of Treasure Coast Region evacuation clearance times, by county and storm severity, are found in Appendix H).

MOBILE HOMES, SPECIAL NEEDS, AND SHELTERING

Equally relevant to emergency preparedness when analyzing development or demographic trends is dwelling preference. Ample concern exists over that segment of the population who choose to place themselves at greater risk by living in mobile homes. Mobile homes, while affordable and easily sited, are particularly vulnerable to wind damage and are not designed to withstand the wind velocities of a Category 3 or greater hurricane. An example of their vulnerability to wind damage is that 98 percent of all mobile homes structurally affected during Hurricane Andrew were totally destroyed (FDCA 1995). Local emergency management agencies recommend evacuation of mobile homes for Category 1 or greater hurricanes. According to the U.S. Department of Commerce, the Treasure Coast Region contains 47,692 mobile homes, a significant number to local emergency planners.

Consideration must also be given to those persons who are categorized as having special needs and the critical care facilities in which they reside or on which they depend. Examples of residents who may be thus encumbered by special needs are the physically
impaired, medically unsound, elderly persons, or anyone requiring special systems or devices. The facilities where these needs are met are quite naturally considered to be significant to the Region. The State of Florida requires that emergency preparedness and response agencies track and routinely update listings of residents with special needs so that they may respond quickly to medical emergencies or provide transport or other assistance when a disaster event warrants sheltering or evacuation. Special needs registration is not mandatory, and local emergency management officials estimate that the special needs figures would be much higher if all those persons requiring assistance chose to register.

The location of special needs or health care facilities such as nursing homes, hospitals, and medical centers is as important as the services they provide. A certain percentage of these regional facilities are located in hurricane storm surge or flood-prone areas. It is feasible that during and immediately after a major storm event, residents requiring specialized treatment at such facilities could not reach them due to flooding at the facilities or inundation of access routes. Patients already in residence during an emergency might have to be evacuated to other locations which may not be equipped to adequately sustain them. It is important for local elected officials to consider these factors when planning for or approving the development of such facilities.

Regional public emergency shelter capacity is another emergency planning concern of significance. Table 5.4 lists the numbers of county designated primary and secondary shelters, maximum capacities, estimated numbers of persons seeking public shelter during a major storm, and registered special needs residents. The shelter statistics cited in Table 5.4, while valuable for emergency planning purposes, may be somewhat misleading.

In 1991, the Treasure Coast Regional Planning Council conducted a regional natural disaster shelter survey and found that a portion of the designated shelters were located in flood-prone inland areas (TCRPC 1991). Additionally, space allocation criteria used to determine the maximum occupancy rates of designated shelters are subject to debate.
The American Red Cross allots 20 square feet of occupancy space per person when figuring shelter capacities, whereas emergency management officials prefer an allocation of 40 square feet per person. It is reasoned that the living area allocated to each person based upon the smaller figure would only be utilized for a maximum of 72 hours. However, this difference in living space is extremely critical if one considers that South Florida evacuees occupied emergency shelters for weeks, long after Hurricane Andrew had passed. It is difficult to imagine existing in a space four feet by five feet for any extended period of time.

In addition to shelter location, development and redevelopment design and construction practices play an important part in the public shelter planning process. A community of well-defined, recognizable, and interconnected neighborhood streets, public areas, and centrally-located public buildings provides strategic locations for disaster relief staging areas and public sheltering. Dense and interconnected roadway networks increase the ability of citizens to access designated shelters safely and efficiently, since several segments of the roadway network may become impassable during an emergency.

One approach to alleviating the Region’s emergency shelter deficit is to ensure that new public buildings, including at least one main building on each school campus, be constructed and sited so that the entire structure can be safely accessed and utilized by evacuees. Recent State legislation has attempted to address this deficit by requiring that as of July 1, 1994, a portion of school campuses be constructed so that some of the school can be safely utilized as emergency shelter space. These school areas have been designated Enhanced Hurricane Protection Areas (EHPAs). However, the State Board of Education has shown reluctance to adopt these criteria, and local school boards can request a variance to the requirements from local emergency management. In Florida, county school district buildings have traditionally been designated as public emergency shelters. A large percentage of the Treasure Coast’s shelter sites are located on school campuses. Municipal, county and school board officials should carry out a cooperative planning effort to retrofit or harden at least one main school building on existing campuses which qualify as shelter sites. New construction or renovation of other public buildings such as courthouses, libraries, administrative centers, and recreation centers should be planned, designed, and sited to safely accommodate evacuees in times of emergency. Such actions should be developed with the input of emergency planners and considered a priority by local officials.

Table 5.4
Shelters, Capacity, Demand, and Special Needs

<table>
<thead>
<tr>
<th>Region</th>
<th># Designated Shelters</th>
<th># Shelter Spaces</th>
<th>Estimated # Using Shelters (Cat. 3-5 storm)</th>
<th># Registered Special Needs Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian River</td>
<td>23</td>
<td>18,169</td>
<td>8,200</td>
<td>444</td>
</tr>
<tr>
<td>Martin</td>
<td>24</td>
<td>19,330</td>
<td>8,500</td>
<td>202</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>29</td>
<td>36,200</td>
<td>38,100</td>
<td>480</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>21</td>
<td>16,047</td>
<td>11,600</td>
<td>1,100</td>
</tr>
</tbody>
</table>

Sources: 1994, Treasure Coast Region Hurricane Evacuation Study.
1995, Indian River, Martin, Palm Beach, and St. Lucie County Departments of Public Safety.
1 Six shelters are located within the Category 5 storm surge area.
Commitment to the implementation of such development practices has yet to be fully realized within the Treasure Coast Region. Understandably, there is often public and private sector resistance to this sort of mitigation due to the higher construction costs. However, the debate over marginal additional costs must be tempered with the realization that the Treasure Coast Region is subject to the same natural dangers that are unique and yet common to the rest of South Florida. Community and school officials must therefore carefully measure initial costs against the worth of providing for a safe and secure citizenry during times of emergency. In order to increase the availability of public emergency shelter space, it will require a cooperative planning and funding effort by State, regional, and local officials, school board officials, and the private sector.

The State of Florida realized that financing such mitigation was a justifiable concern for local governments and therefore provided for competitive grants under the Emergency Management, Preparedness, and Assistance Trust Fund. These funds are available to State, regional, and local governments, and private non-profit organizations to implement projects that will further State and local emergency management objectives. Local governments already have the authority to require that any new development or redevelopment fully mitigate its emergency preparedness impacts. Additionally, local governments also have the ability to assess user impact fees on those residents who choose to reside in areas vulnerable to the effects of major storm events.

TOURISM AND THE ECONOMY

Florida enjoys and relies on the benefits of a lucrative tourist industry. As an example of the revenue that visitors can generate, the national chapter of the American Automobile Association estimates that in 1995, vacationers will spend an average of $1,076.00, and that a family of four will spend an average of $221.80 per day on meals, lodging, and automobile costs. The Florida Department of Commerce estimates that in 1993, there were 41,032,560 visitors, and that approximately 58.6 percent of these traveled to destinations in the southeast and eastern portions of the peninsula (FDOC 1994). These are relevant numbers to local emergency management officials who must consider their impacts when planning emergency evacuation routes and sheltering capabilities for existing populations. These officials must also consider the impacts from visitors to adjacent Regions who must evacuate through the Treasure Coast Region in the event of an emergency.

The 1990 Census lists the Region’s industries which employed the greatest percentage of the population as being services (30 percent), retail trade (24.8 percent), agriculture (9.8 percent), construction (6.8 percent), and manufacturing (6.5 percent). The remaining 22.1 percent of the population were employed in such diverse fields as transportation, finance, wholesale trade, federal, State, and local government, and other economic impact industries. These statistics do not reveal the Region’s economic dependence on the use of hazardous materials, just as they do not illustrate regional vulnerability to the adverse effects of naturally occurring events. However, transport, use, and reliance upon chemical substances in the course of normal business processes is typical for many
industries. As an example, nearly 100 percent of the hydrocarbon and nuclear fuels (cogenerating power facilities account for negligible amounts) which drive these industries are refined and transported from areas outside the Region.

2. Emergencies Defined

What relevance do these statistics have when considering the importance of regional emergency preparedness, and just what might be characterized as an emergency? For the purposes of this element, an emergency can be defined as:

Any event, either naturally occurring or artificially induced, which wastes or damages human, material, or natural resources or systems, and causes impacts which adversely affect immediate and/or long-term mitigation of those impacts within a stricken locality.

Emergency events within the Region can be listed in one of two categories: 1) naturally occurring; and 2) manmade or technological.

NATURAL EVENTS

Hurricanes, Tropical Storms. The Treasure Coast Region regularly experiences and is susceptible to a variety of naturally occurring events whose effects have the potential to cause an emergency as defined above. Those most familiar to South Florida residents are categorized as tropical cyclones. Cyclones are storms whose primary characteristics are strong circular winds ranging from 40 miles per hour to over 200 miles per hour (FDCA 1995). Events of this type include tropical depressions, tropical storms, and hurricanes. Tornadoes also may be formed in conjunction with storms of this nature. A recent and most vivid example of a storm of this type is Hurricane Andrew, which ravaged parts of South Florida during the early morning hours of August 24, 1992. The Region’s proximity to the Gulf of Mexico and Atlantic Ocean, coupled with low coastal elevations and a large number of coastal developments and residents, compounds regional vulnerability to such storms. To understand this vulnerability, an analysis of the dynamic forces associated with storms of this nature is required. The primary destructive forces associated with storms of this type are storm surge, high velocity wind, and to a lesser extent, prodigious rainfall amounts.

Storm Surge. Storm surge, or abnormally high water levels along ocean coasts and interior shorelines, results from the effects of a storm’s extremely low atmospheric pressure and the amount of water pushed by its winds ahead of the storm as it approaches from a large body of water like the Atlantic Ocean. Surge effects can be heightened when they occur during times of high tide and by severe wave action created by the storm itself. Other factors which determine the strength and duration of storm surge are the shoreline’s underwater topography, the presence or absence of barrier islands, and the number and physical nature of cuts or breaches through these islands to interior water systems.
From 1989 to 1993, a collaborative team representing the Florida Departments of Community Affairs and Environmental Protection, Federal Emergency Management Agency, U.S. Army Corps of Engineers, the National Hurricane Center, and local emergency management agencies performed extensive computer modeling to determine reliable projections of regional storm surge heights. The Sea, Lake, and Overland Surges from Hurricane (SLOSH) modeling predicts that certain coastal areas within the Treasure Coast, depending on the severity of the event, may experience storm surges during a hurricane in excess of 17 feet in height (USACOE et. al. 1994). The Regional Hurricane Surge Maps found in Appendix C illustrate local hurricane storm surge and flood zones.

**Winds.** High sustained winds from storms of this nature are also very destructive, and hurricane strength categories are defined by maximum sustained wind velocities of between 74-200 miles per hour. It was the destructive winds and many ancillary tornadoes spawned by Hurricane Andrew and not storm surge which caused most of the damage to South Florida. This was an unusually dry storm which moved onto and over land at a high rate of speed, contradicting most conventional hurricane planning. In fact, intense study of Andrew’s characteristics has altered the manner in which emergency planners assess and prioritize elements of hurricane preparedness.

The State of Florida holds the dubious distinction of national leadership in the frequency for hurricane and tropical storm events. This has been widely publicized, and a reexamination of the data substantiates this distinction. From 1900 to 1994, 55 hurricanes have made landfall and 25 of those have been classified as major hurricane

<table>
<thead>
<tr>
<th></th>
<th>Greatest Calculated Storm Surge, in Feet</th>
<th>Vulnerable Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Category 1</td>
<td>Category 3</td>
</tr>
<tr>
<td>Indian River</td>
<td>5.6</td>
<td>12.0</td>
</tr>
<tr>
<td>Martin</td>
<td>6.4</td>
<td>8.7</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>4.0</td>
<td>7.0</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>6.9</td>
<td>10.0</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Central Pressure (Millibars)</th>
<th>Barometric Pressure, Hg</th>
<th>MPH</th>
<th>Knots</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&gt; 980</td>
<td>&gt; 28.9</td>
<td>74 - 95</td>
<td>64 - 83</td>
</tr>
<tr>
<td>2</td>
<td>965 - 979</td>
<td>28.5 - 28.9</td>
<td>96 - 110</td>
<td>84 - 96</td>
</tr>
<tr>
<td>3</td>
<td>945 - 964</td>
<td>27.9 - 28.5</td>
<td>111 - 130</td>
<td>97 - 113</td>
</tr>
<tr>
<td>4</td>
<td>929 - 944</td>
<td>27.2 - 27.9</td>
<td>131 - 155</td>
<td>114 - 135</td>
</tr>
<tr>
<td>5</td>
<td>&lt; 928</td>
<td>&lt; 27.2</td>
<td>&gt; 155</td>
<td>&gt; 135</td>
</tr>
</tbody>
</table>

Source: 1993, National Hurricane Center, Miami, Florida.
events (Category 3 or higher) (FDCA 1994). Since 1921, Florida has also experienced seven notable and highly destructive tropical storms. The total costs from the effects of hurricanes during this period has been estimated at over $44 billion of 1990 dollars in damages and more 3,900 lives lost (Sheets 1993, FEMA 1992). It is impossible to accurately determine the total numbers of injured persons directly attributable to these storms. According to the Florida Division of Emergency Management, if the effects of tropical storms, tornadoes, and major thunderstorm events were included, all of the figures cited above would increase significantly.

**Tornadoes.** What most residents and local officials do not realize is that Florida also ranks first nationally in the number of tornado touch-downs per 10,000 square mile area, with an average of 52 events per year. Tornadoes can attain wind speeds in excess of 250 miles per hour. Although of short duration when compared to hurricanes and restricted to a relatively narrow path of destruction, tornadoes are perhaps the most violent type of storm event that occurs in the Region. There are very few structures in the Treasure Coast Region which can withstand the effects of such powerful forces without damage.

**Flooding.** In inland areas, heavy precipitation in the form of rainfall from tropical and other weather systems such as thunderstorm cells pose a significant flooding hazard. Although localized flooding is a common and natural occurrence within the Region due to its topography and relatively high annual rainfall amounts, it becomes problematic when vulnerable land uses are sited within flood-prone areas or when hydrologic systems are disturbed to accommodate such development. Such alterations affect naturally defined flood zones, water retention areas, and stormwater runoff patterns (FDCA 1995). Past development practices, which focused on rapid removal of stormwater runoff and aggressive suburban construction within historic flood zones, have exacerbated regional flooding problems. Since 1979, the majority of federally declared disasters in Florida have involved flooding (FDCA 1994). Statistics suggest a direct correlation between an increase in the frequency and severity of regional flooding and an increase in population and development.

**Other Events.** Other natural occurrences with the potential to create emergency conditions include the effects of animal- and human-borne diseases. Examples which are not uncommon within the Region include encephalitis, rabies, and many communicable or sexually transmitted viruses such as hepatitis, herpes, tuberculosis, and Acquired Immune-Deficiency Syndrome (AIDS). There are areas within the Region that are currently experiencing social and economic impacts due to certain of these afflictions. Also included in the natural realm of events which pose threats to residents, local industries, and environmental resources are saline intrusion into potable water sources, wildfires, droughts and winter freezes.
MANMADE AND TECHNOLOGICAL EVENTS

In recent years, tragic events have occurred in places such as Bhopal, India; Times Beach, Missouri; Love Canal, New York; Three Mile Island, Pennsylvania; Chernobyl, Ukraine; and Prince William Sound, Alaska. In the United States, some type of adverse chemical-related incident occurs nearly every day. Such events are common in the Treasure Coast Region as well.

Hazardous Materials and Wastes. Almost every aspect of our lives, regardless of individual or family incomes, are heavily dependent upon chemical-based technology. Chemical substances are used in processes which provide employment, food, water, waste elimination, hygiene, clothing, dwelling, furnishings, electricity, medicines, health care processes, transportation, and recreational pursuits. This dependency, coupled with the Region’s population growth, underscores the importance of effective hazardous materials emergency planning. The American lifestyle is sustained by the use of tremendous amounts of chemical substances each day. By-products generated from this sustaining process include large amounts of hazardous wastes.

An analysis of all issues associated with hazardous materials and their relationships to local emergency preparedness is beyond the scope of this Plan element. However, a few basic premises regarding these chemical substances will provide some insight as to their regional significance.

Chemicals Must be Transported. Whether their ultimate destination is a farm, factory, power plant, fuel distribution station, or household, it is a fact that chemicals are transported via every major road, air and rail line, pipeline, and port within the Treasure Coast. Approximately 55 percent of all hazardous materials and wastes transported within the United States is done so by truck, five percent by rail, and the remainder via pipeline, ship, and aircraft (TRANSCAER 1991). The probability for a transportation-related chemical incident to occur within the Region is much greater than that for hurricane, tropical storm, tornado, flood, wildfire, drought, or freeze events combined. The potential impacts of a chemical transport incident are just as severe as those of a naturally occurring event. Unlike point source (fixed facility) releases, transportation-related releases tend to occur with greater frequency near or within the bounds of valuable natural resources and systems such as wetlands, rivers, lakes, and forest preserves. Furthermore, chemicals are transported both when they are virgin (before use) and also when they are spent, impure, or spilled (after use). They are potentially dangerous in either case. As a result, major consideration must be given to emergency preparedness throughout all transportation-related infrastructure decision processes.
Chemicals Must be Handled, Stored, and Used. Regardless of their destination or eventual use, chemicals must be routinely handled, stored, utilized in a business process, or distributed to consumers. Most of the processes which use large amounts of chemicals to service the Region (with the exception of agriculture) are in the midst of our suburbs and municipalities. Since this is precisely where most of the citizens reside and most of the critical infrastructure is found, local officials should focus their attention on emergency preparedness planning for chemical releases or spills.

Within the Treasure Coast Region alone, there are more than 1450 facilities which store and use hazardous materials or toxic substances in large amounts (a minimum of 10,000 pounds per chemical). Of that total, 588 facilities store and use extremely hazardous substances (chemicals that are an immediate danger to life or health) (LEPC 1995). Furthermore, the Florida District X Local Emergency Planning Committee (LEPC) estimates that they represent only about 60 percent of the total number of regional facilities which should be registered under federal and State notification requirements.

During the period from January to November, 1994, the Treasure Coast Region experienced 160 serious hazardous materials incidents, with 48 occurring at fixed facilities, 79 of which were transportation-related, and 33 involving abandoned chemical drums or unidentified pollution sources such as water spills (FDEM 1994). These incidents caused the evacuation of nearly 5,400 persons and injured nine. Fortunately, and unlike 1993, there were no deaths as a result of these releases. Although the figures are high, it is important to note that they represent only those incidents which were reported to the State Warning Point in Tallahassee. Florida Division of Emergency Management officials estimate that actual chemical release figures may be higher.

<table>
<thead>
<tr>
<th>Table 5.7</th>
<th>Facilities Reporting Hazardous Chemicals, Extremely Hazardous Substances (EHSs), and Estimated Number of Facilities Subject to Reporting Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Chemicals (&gt; 10,000 lbs)</td>
<td>EHSs</td>
</tr>
<tr>
<td>Indian River</td>
<td>142</td>
</tr>
<tr>
<td>Martin</td>
<td>187</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>887</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>214</td>
</tr>
<tr>
<td>Region</td>
<td>1,450</td>
</tr>
</tbody>
</table>

Source: 1995, District X Local Emergency Planning Committee.

Emergency preparedness should be pivotal in determining and approving the design and siting of public facilities, occupational and business licensing, and community development patterns. Input is necessary and significant for redevelopment, new construction, or development which will create local or multi-jurisdictional impacts.
**Chemicals Must be Disposed Of.** With the exception of fuels and direct application chemicals which have their own inherent health and environmental concerns, most process-related chemicals sooner or later become fouled with or altered by impurities, break down structurally with use or age, or are released to the environment. The spent substances are then replaced and in most instances dealt with in a manner which will not adversely affect residents or material and natural resources. Stringent criteria is in place at all levels of government to promote the safe handling, storage, transport, recycling, or disposal of hazardous wastes. This stringency, while designed with the intent to alleviate risk factors when dealing with these substances, is costly. Unfortunately, these costs do not ensure that accidental releases to the environment or improper disposal will not occur. Communities and industries which must invest in hazardous waste temporary storage, transport, disposal, and preventative planning incur additional financial impacts whenever an incident occurs.

**Nuclear Power Generation.** The Region’s nuclear power generating facility (St. Lucie Nuclear Power Plant) is located on Hutchinson Island, a barrier island north and east of the regional geographic center. Federal requirements have mandated detailed emergency planning for the areas of potential risk. Those areas are the plume emergency planning zone (areas within 10 miles of the nuclear plant) and the ingestion pathway zone (areas within 50 miles of the plant). Approximately 148,423 persons reside within the plume exposure emergency planning zone for the St. Lucie Nuclear Plant and the estimated regional population of the ingestion pathway zone is 916,547 (FDCA 1995) (these figures do not reflect the small areas within Okeechobee and Brevard counties). An Outdoor Emergency Warning System is in place for promptly notifying the residents within the 10 mile radius of the nuclear plant; this system is routinely tested. Radiological emergency response plans are tested annually during drills with the appropriate state and local governments.

Because of the design and operating philosophy of the U.S. nuclear power plants, an emergency requiring public protective action is highly unlikely, even with a natural disaster such as a hurricane. Nuclear plants are built to withstand the maximum severe weather projected for that area of the state (winds and tornadoes of a Category 5 hurricane up to 195 miles per hour). Additionally, nuclear plants are safely shut down and made ready prior to the onset of any hurricane force winds. The evacuation area for a coastal hurricane is the same (or similar) to the nuclear power plant evacuation areas in the Treasure Coast Region, minimizing the potential impact of a compound evacuation. The nuclear plant in Homestead, Florida (Turkey Point) survived the full impact of Hurricane Andrew without any damage to plant staff or the nuclear safety systems.

**Mass Immigration.** Emergency situations which can cause societal and financial impacts are not limited in origin to the hazardous properties of a chemical, improper management of mechanical systems, or the capriciousness of nature. Since the 1960s, asylum has been the ultimate objective for hundreds of thousands of political refugees, predominantly fleeing political unrest in Cuba, Haiti, and Central America. According to the South Florida Regional Planning Council, more than 30,000 refugees arrived in Florida within a few weeks during the dramatic 1994 Cuban raft emigration alone. The resettlement of
these refugees is further complicated by the migration of thousands of persons who choose to emigrate each year for reasons other than ethnic, religious, or political persecution. All public service agencies in South Florida have been impacted by the effects of this tremendous influx of displaced persons.

SIGNIFICANCE OF EMERGENCY PREPAREDNESS

Effective emergency preparedness is one of the most vitally important contributions any county or municipal government can make to its citizens. A safe and secure community offers new businesses and industries the incentive of investment security. No public building, recreational facility, or any other segment of modern infrastructure exists that is immune to the effects of natural or technological disaster. When they occur, infrastructure fails. Architects and engineers can redesign and rebuild after the rubble is cleared away, but key elements to consider are at what price and at what pace a community will be restored to vitality.

Local officials have a responsibility to permanently reduce or alleviate the losses of life, property, and natural systems resulting from natural and manmade hazards through long-term strategies which incorporate emergency preparedness planning and policies. The importance of mitigating our vulnerability to hazards is illustrated in Table 5.9, which lists the ten most costly insured catastrophes in United States history. Please note that these figures, although very great, represent only insured losses, and that costs could be much higher. For example, the Florida Department of Community Affairs estimates that total losses from Hurricane Andrew exceeded 30 billion dollars.

Table 5.9
The Ten Most Costly Insured Catastrophes in the United States

<table>
<thead>
<tr>
<th>Date</th>
<th>Perils (primary area damaged)</th>
<th>Insured Loss, in Millions of $</th>
</tr>
</thead>
<tbody>
<tr>
<td>August, 1992</td>
<td>Hurricane Andrew (Florida)</td>
<td>15,500</td>
</tr>
<tr>
<td>January, 1994</td>
<td>Northridge, Calif., earthquake</td>
<td>11,200</td>
</tr>
<tr>
<td>September, 1989</td>
<td>Hurricane Hugo (South Carolina)</td>
<td>4,195</td>
</tr>
<tr>
<td>March, 1993</td>
<td>Winter storms in 20 states</td>
<td>1,750</td>
</tr>
<tr>
<td>October, 1991</td>
<td>Oakland, Calif., fire</td>
<td>1,700</td>
</tr>
<tr>
<td>September, 1992</td>
<td>Hurricane Iniki (Hawaii)</td>
<td>1,600</td>
</tr>
<tr>
<td>October, 1989</td>
<td>Loma Prieta, Calif., earthquake</td>
<td>960</td>
</tr>
<tr>
<td>October/November, 1993</td>
<td>California brush fires</td>
<td>950</td>
</tr>
<tr>
<td>December, 1983</td>
<td>Winter storms in 41 states</td>
<td>880</td>
</tr>
<tr>
<td>April/May, 1992</td>
<td>Los Angeles riots</td>
<td>775</td>
</tr>
</tbody>
</table>

Source: 1995, Insurance Information Institute

Clearly, emergency preparedness should be an important component in the planning processes which facilitate a healthy and dynamic Treasure Coast Region. The following section will discuss emergency preparedness in relation to past and current local planning practices. Broadly defined regional issues will be analyzed to determine how the application of comprehensive emergency preparedness in key future planning strategies may provide remedial assistance in dealing with these issues.

3. Perspective On Regional Preparedness
Emergency preparedness was once known as civil defense and disaster planning generally focused on protective actions in the event of a conventional or nuclear weapons attack on the United States. Emergency preparedness as a modern administrative discipline evolved from these conflict-based programs established during the latter stages of World War II and enhanced in the late 1940s and early 1950s (Myers 1995).

For many years, local officials adhered to the principals defined under this concept. During this period emergency management agencies were often created to comply with government mandates or qualify a jurisdiction for grant funding. In many cases, emergency management agencies were limited in their missions and subsisted on funding which reflected these limitations. In fact, this funding was often the first to be curtailed whenever the need arose to alleviate a budget deficit, a fiscal policy still occasionally practiced. This strategy assumed that local fire and police departments could handle all emergencies, regardless of scope, and concentrated community resources on reacting to an emergency situation rather than planning to prevent or lessen the impacts of its occurrence. However, with the advancement of technology, regional population growth, continued development within potentially hazardous areas, and increased demands for those services and products which sustain modern lifestyles, recent events have illustrated that the magnitude and complexity of large-scale emergencies dwarf the ability of any local response agency to effectively manage them as they occur, much less mitigate their effects.

MODERN DISASTER STRATEGIES

Today, county and municipal emergency management within the Treasure Coast Region is structured and practiced under an “all-hazards” four point strategy; that is, preparedness, response, recovery, and mitigation to any emergency event. This comprehensive emergency management approach is multi-tiered, meaning that it encompasses and is practiced at all levels of government. The Florida Division of Emergency Management has consistently provided direction to local governments for improving response and recovery efforts, but now places special emphasis on pre-disaster mitigation as the cornerstone of effective emergency preparedness. This approach is the basis for the State’s overall emergency management concept and is reflected in landmark legislation to that effect.

The Region’s local emergency management agencies, while striving to incorporate this pre-disaster mitigation strategy into their preparedness planning, have always placed great emphasis on post-disaster response and recovery strategies. These efforts have been considerable and are carefully defined in existing local comprehensive emergency management plans and extensive intergovernmental mutual aid agreements. The Region’s local emergency management agencies have consistently demonstrated State leadership in this endeavor by incorporating innovative strategies into their comprehensive planning. No better example of visionary planning exists than the success of the Florida Relief Center, a huge response and short-term recovery command and relief staging base activated at Palm Beach County’s South Florida Fairgrounds only
hours after Hurricane Andrew struck. This remarkable local emergency management planning achievement contributed greatly to South Florida’s initial recovery efforts. This relief center concept is now accepted and practiced as standard disaster planning criteria in the State of Florida.

The State of Florida considers effective local emergency management so important to its overall preparedness planning that it specifies exacting criteria which counties must follow under Chapter 252, Florida Statutes. Among its many provisions, this legislation requires that counties establish and maintain an emergency management agency, that such agency have a director appointed by the board of county commissioners, and that the emergency management agency and its director be subject only to the direct control and administration of the county’s governing body.

These requirements acknowledge that local elected officials and emergency planners best understand local characteristics, vulnerabilities, and availability of resources. More importantly, their intent is to ensure that local governments safeguard their citizens by providing the most effective emergency preparedness planning possible. This is reinforced by mandating that redundant levels of control which misdirect emergency planning resources be eliminated. The regulations attempt to make those responsible for determining the direction of such planning accessible and accountable to the public.

LOCAL GOVERNMENT AND DISASTER RESPONSE

Local governments employ specific operating procedures and hierarchies when responding to an emergency event. These specifics vary from one local government to the next, but all are clearly defined in local comprehensive emergency management plans which have been approved by the respective governing boards. It is impossible for this regional plan element to accurately define or chart how all local governments structure their emergency management disaster responses. However, the following general description illustrates a typical response for a local government when an emergency event occurs:

The Emergency Management Director assumes overall incident command and activates the Emergency Operations Center (EOC). The Director notifies the chair of the governing body and/or the local executive (administrator), declares a local state of emergency, and notifies the State Division of Emergency Management. The county EOC is staffed by representatives of local government departments who will provide the incident commander with support and resources. These representatives are grouped into 16 Emergency Support Functions (ESFs) which include Transportation, Communications, Public Works and Engineering, Fire Fighting, Information and Planning, Mass Care, Resource Support, Health and Medical Services, Search and Rescue, Hazardous Materials, Food and Water, Energy, Military Support, Public Information, Volunteers and Donations, and Law Enforcement and Security.

If the magnitude of the event exhausts local resources, regional intergovernmental mutual aid agreements may be activated and adjacent local governments will then provide
response and recovery resources and support. State assistance may be requested. At that
time, the State may activate its EOC, and at the discretion of the Governor identify
assistance needs and deploy vital response resources to the stricken locale. Throughout
the event, the county EOC is in constant communication with the State EOC, and the
State EOC serves as the Governor’s central emergency coordination center. Depending
on the severity of the event, the Governor may declare a state of emergency and
ultimately request federal response and recovery assistance.

Comprehensive emergency management refers to any government’s responsibility and
capability for managing all forms of emergencies by coordinating the actions of multiple
organizations and agencies. Mutual jurisdictional assistance agreements are critical.
Hurricanes Hugo and Andrew, the Loma Prieta earthquake, and most recently the Great
Midwest Floods and Northridge, California earthquake have demonstrated that no
federal, State or local government alone can effectively cope with the incredible costs to
fully recover from large-scale disasters. The more effectively a local government can
prepare for an emergency prior to its occurrence, the less it will be harmed by its effects.
Public awareness of disaster hazards, home mitigation techniques, and emergency shelter
and evacuation procedures is critical. Local emergency management officials must
ensure that their existing public awareness and information campaigns are continued and
enhanced.
B. Important Regional Issues

The preceding sections briefly outline the Region’s physical characteristics, population growth, current development practices, and related impacts on existing infrastructure. They define regional susceptibility and current state of preparedness, based upon these characteristics, to potential natural, technological, and manmade hazards. More importantly, they illustrate why effective emergency preparedness planning is so important to the economic vitality of the Region and safety of its citizens.

A close link between community and emergency planning is essential, and emergency preparedness must play a pivotal role in every local and regional development and redevelopment planning process of consequence. Local officials should acknowledge the errors, omissions, and mistakes made in the past in this and other Regions and incorporate emergency preparedness strategies into their community planning and decision-making processes.

The following key issues are significant to regional emergency preparedness:

1. New developments are currently approved for areas most vulnerable to the effects of major storm events.

At some point in time, the Treasure Coast Region will suffer the effects of a major storm event. As regional development continues and population densities increase on barrier islands, shorelines, and flood-prone areas, the impacts on our capabilities to safely evacuate and shelter residents who live in these vulnerable areas will grow accordingly. This must be realistically considered by local officials already faced with an emergency shelter capacity deficit and limited bridge and thoroughfare evacuation infrastructure. Additionally, a community’s investment in services, utilities and delivery systems in such areas also increases, thereby compounding potential recovery and mitigation costs.

Because local officials have a responsibility to provide for the safety and well being of the Region’s citizens and property, there should be a concerted effort to: 1) encourage sensible redevelopment and increase population densities in established areas less subject to hazards; 2) encourage new development in reduced-hazard areas by offering developers fiscal incentives; 3) promulgate and adhere to stringent mitigation requirements for developments which will impact existing emergency shelter capacities and transportation infrastructure, or which limit or deny the provision of infrastructure in vulnerable areas; 4) utilize vulnerable lands as community recreational areas which require minimal disaster recovery and mitigation expenditures; 5) develop equitable methods for the transfer or sale of private development rights in high-hazard areas; 6) reestablish island dune systems and natural shoreline vegetation; and 7) relocate existing vulnerable public facilities and structures.
2. **Developments are currently approved without sufficient mitigation of their impacts on existing infrastructure and emergency preparedness planning.**

At all levels of government, there are some controls in place which require development to take actions which lessen the impacts they impose on existing communities and infrastructure. However, local officials must be committed to their consistent application when reviewing such developments for approval. A lack of such commitment manifests itself in the exceedance of desirable development densities in vulnerable areas; vital evacuation thoroughfare concurrency exemptions; eradication or alteration of natural storm and flood mitigation systems and topography; no requirement for the provision of emergency shelters to offset deficits brought about by such development; and shortages of critical and health care facilities or accommodations.

One of the most effective tools that a local government can employ to promote the long-term reduction of its citizens’ vulnerability to hazards is the uniform, consistent application of its comprehensive land use and development criteria.

3. **Land use changes and variances to zoning codes for developments which impact emergency preparedness continue to be granted by local regulatory agencies.**

No statute, code or ordinance can effectively discourage or prohibit inappropriate or poorly-planned construction or development, or help ensure the safety and well-being of existing neighborhoods, natural systems, and residents when local governments grant variances to them. Aside from the potential to decrease existing community values, zoning exemptions such as those often granted to alleviate building setback restrictions, stringent wellfield protection criteria, or restrictions on the number of potentially hazardous facilities within a given area can impact the ability of public safety agencies to plan for and respond to emergencies such as natural disasters, fires, explosions, and hazardous chemical releases. Community planners and public policy decision makers must consider what impacts these decisions have on public safety.

4. **Emergency management planning is not fully integrated into the community planning process.**

This entire element has detailed how the quality of life, safety of citizens and environment, and economic vitality of the Region are intrinsically linked to and depend upon effective emergency preparedness. It is therefore unfortunate that emergency preparedness planning currently plays a limited role in everyday community planning processes which shape the growth and future development of the Treasure Coast Region. While the efforts and dedication of emergency planners to prepare for natural and manmade disaster response, recovery, and mitigation are considerable, local officials have often failed to employ their professional insight and knowledge effectively. There should be no
often, this oversight on the part of local officials to fully incorporate valuable emergency planning resources into the mainstream community development process stems from conflicts which: 1) arise between the necessity to plan for public safety and the desire to plan for economic growth and vitality; 2) are brought about by inter-agency disputes over responsibilities, jurisdiction, and control; or 3) are brought about by inconsistency in the direction provided by or application of local ordinances or development incentives. Many community planners fail to grasp the concept or importance of comprehensive disaster mitigation planning or consider the efforts of emergency planners to have little relevance to the community development process. If local officials included and were committed to input from emergency planners in the development review process, developments which have limited ingress and egress are isolated by walls or gates from the rest of the community, lack well-planned street patterns and centralized neighborhood centers, and lack strategically located, well-constructed public buildings which could be used as onsite emergency shelters would be discouraged.

5. Local emergency preparedness agencies are underfunded and their effectiveness is often impacted by multiple or redundant levels of organizational control.

Substantial revisions to State legislation have increased the responsibilities of local emergency management agencies tremendously without corresponding increases in program funding. These new responsibilities include reviewing comprehensive emergency plans for hospitals and medical centers, ambulatory surgical centers, adult congregate living facilities and nursing homes, and special needs facilities. These agencies have also been mandated to completely reconstruct county peacetime and hazardous materials emergency plans into a comprehensive disaster plan which incorporates Emergency Support Functions (ESFs) protocols. While Florida Division of Emergency Management staff and funding have been increased to effectively administer these additional responsibilities, most local agencies have been required to perform existing and new mission tasks on limited budgets.

Despite a tremendous increase in public disaster awareness due to recent natural and technological emergency events, emergency management directors and agencies still experience underfunding or are organized in such a manner as to be removed from the direct control of the county’s governing board. This happens when emergency management agencies are structured as adjuncts to other departments headed by officials with expertise in fields other than emergency management. These controlling agencies usually have primary mission requirements which differ from those specifically prescribed for emergency management by the State of Florida. As a result, effective local emergency
preparation of emergency planning may be compromised by the redirection or denial of funding, inadequate personnel resources, and the lack of direct access to the governing board. In addition to disaster preparedness, responsibilities which are often compartmentalized under the auspices of an emergency management agency such as emergency communications, animal control, mosquito control, or beach safety are often considered low priorities in a county’s budget hierarchy. This is significant in a Region that is experiencing dynamic growth, periodically afflicted with rabies and encephalitis alerts, and which depends upon a lucrative tourist economy. A community’s potential for disaster preparedness and mitigation is almost completely dependent upon the foresight, commitment, and executive direction of its local elected officials.

6. Adequate emergency shelter capacity for the Region’s vulnerable population has not been attained.

There is currently an emergency shelter deficit within the Treasure Coast Region. Disaster planners throughout South Florida are confident that after Hurricane Andrew, more people than ever will evacuate their homes and seek shelter locally or in another part of the State when threatened by a major storm event. Safe shelter should be available for all residents and visitors. Accommodating this need would lessen the potential for residents to seek shelter outside the Region and thus help relieve the burden on already heavily-used inter-regional evacuation routes. The addition of evacuees on these routes increases the possibility that those persons slowed or stalled by traffic congestion would be forced to bear the full effects of a storm while trapped in their vehicles.

Other Regions and communities are also experiencing shelter deficits and will be unable or choose not to open their shelters to nonresidents. Because the Treasure Coast Region will at some point experience the effects of a major storm event or manmade disaster, local officials should commit to programs or development patterns which will immediately begin to increase the safety, numbers, and capacities of community shelters.

7. Post-disaster recovery and pre-disaster mitigation strategies have not been fully developed within the Region.

It has been three years since Hurricane Andrew struck South Florida, and it has taken nearly as long for that area to recover. In fact certain public and private institutions and enterprises have yet to fully recover from the storm’s effects.

In this Region, agencies at all levels of government have been preparing response and recovery strategies in preparation for such a disaster. Restoring the economic vitality of a community after a disaster has occurred will require far more involved and complex strategies. No single local government can effectively respond to and recover from a major disaster, and strategies must be in place which ensure complete coordination at all levels of government. Response
strategies should be defined which will assure a coordinated inter-agency response throughout the Region and adjacent regions; provide for response resource staging areas and field command and medical centers; and ensure complete inter-agency compatibility of emergency protocols, communications, and response equipment. Short-term recovery strategies need be in place which will identify medical and disease monitoring centers, relief resources staging areas and distribution centers, provide for the restoration of electricity and other critical utilities, extended-stay shelter centers, and debris removal systems. Long-term strategies should be in place which will provide for a community’s rapid and complete redevelopment of residences, economic, financial, and employment institutions, and local infrastructure. These recovery strategies should also include provisions which will help mitigate the effects of any future disasters. Examples of such strategies are revisions to and enforcement of existing building and zoning codes, restrictions on rebuilding in coastal high hazard or floodplain areas, and stringent post-disaster reconstruction guidelines and inspections.
C. **Significant Regional Resources and Facilities**

Throughout the Treasure Coast Region, there are many organizations, facilities, and other resources which are of critical importance to emergency preparedness. Resources such as emergency management agencies, fire-rescue and police stations, emergency communications facilities, hospitals, and public shelters are essential to successful emergency preparedness, response, recovery, and mitigation efforts.

Local elected officials should carefully weigh any decisions which affect the operation, effectiveness, or growth potential of such organizations or facilities. This is especially true as the Region continues to develop and increase in population. Regional growth will require corresponding increases in properly designed, constructed, and centrally-located public buildings to meet emergency shelter capacity and relief staging needs. It will also require that State and local governments keep pace with transportation infrastructure needs for shelter access and evacuation. Such responsible development and infrastructure growth can only be achieved with major input from emergency preparedness at each level of the community planning process.

Listed below are resources, organizations, and facilities significant to emergency preparedness within the Treasure Coast Region:

**ECONOMIC RESOURCES**

- Financial centers
- Insurance centers
- Wholesale and retail trade centers

**INSTITUTIONAL FACILITIES AND ORGANIZATIONS**

- Amateur radio operators
- Charitable/volunteer organizations
- Civic centers
- Correctional facilities
- Emergency operations centers (EOCs)
- Fairgrounds and parks: municipal, county State
- Fire-rescue stations
- Flood control structures
- Fuel distribution centers
- Health and critical care facilities
- Landfills
- Law enforcement stations
- Media centers: electronic and print
- Military installations
- Power generating facilities and delivery systems
- Public and private emergency shelters designated by the American Red Cross
- Regional disaster recovery centers
Religious centers
Water and wastewater treatment facilities and delivery systems

TRANSPORTATION RESOURCES

Airports: international, general aviation, landing strips
Bridges
Public and private transit systems
Railways
School bus transit systems
Seaports
Critical evacuation links and intersections, identified by the U.S. Army Corps of Engineers’ 1994 *Treasure Coast Region Hurricane Evacuation Study, Transportation Analysis*. These links and intersections, by county, are as follows:

**Indian River County:**

17th Street/U.S. 1 intersection  Merrill Barber Bridge, (SR 60)
17th Street Causeway bridge  SR 60/11th Avenue intersection
A1A/17th Street Causeway intersection  SR 60 from Kings Highway to I-95
A1A/SR 60 intersection  SR 60/U.S. 1 intersection
Florida’s Turnpike (SR 60 interchange)  Wabasso Bridge
I-95 N on-ramp at SR 60  Wabasso Road/U.S. 1 intersection

**Martin County:**

A1A/Monterey Road intersection  Indian Street/SR 76 intersection
A1A/Sewell’s Point Road intersection  Martin Downs Boulevard
Bridge Road/Gomez Avenue intersection  Monterey Road/SR 76 intersection
Bridge Road/U.S. 1 intersection  Monterey Road/SR 714 intersection
CR 707/U.S. 1 intersection  Monterey Road/U.S. 1 intersection
CR 707/Jensen Beach Causeway intersection  Palm City Bridge
Florida’s Turnpike/Martin Downs interchange  Palm City Road/U.S. 1 intersection
I-95 N on-ramp at SR 76  Roosevelt Bridge
I-95 N on-ramp on SR 714  SR 714 (Florida’s Turnpike to I-95)
I-95 N on-ramp at CR 708  SR 76/U.S. 1 intersection

**Palm Beach County:**

Atlantic Avenue  I-95 N on-ramp at Belvedere Road
Camino Real/U.S. 1 intersection  I-95 N on-ramp at Okeechobee Blvd.
Florida’s Turnpike N of SR 706  I-95 N on-ramp at Palm Beach Lakes
Florida’s Turnpike S of SR 706  I-95 N on-ramp at 45th Street
I-95 N on-ramp at Palmetto Park Road  I-95 N on-ramp at Blue Heron Blvd.
I-95 N on-ramp at Glades Road  I-95 N on-ramp at Northlake Blvd.
I-95 N on-ramp at Yamato Road  I-95 N on-ramp at PGA Blvd.
I-95 N on-ramp at Linton Boulevard
I-95 N on-ramp at Atlantic Avenue
I-95 N on-ramp at Woolbright Road
I-95 N on-ramp at Gateway Boulevard
I-95 N on-ramp at Boynton Beach Boulevard
I-95 N on-ramp at Hypoluxo Road
I-95 N on-ramp at Lantana road
I-95 N on-ramp at Lake Worth Road
I-95 N on-ramp at SR 706
I-95 N on-ramp at Donald Ross Road
Indiantown Road
Lake Worth Road
Palmetto Park Road
PGA Boulevard
PGA Boulevard/U.S. 1 intersection
SR 80
U.S. 27

St. Lucie County:

7th Street/Avenue A intersection
7th Street/Orange Avenue intersection
A1A - Peter Cobb Bridge
A1A/CR 707 intersection
A1A/U.S. 1 intersection
Florida’s Turnpike/Okeechobee Road interchange
Florida’s Turnpike/Port St. Lucie Blvd. interchange
I-95 N from Okeechobee Road
I-95 N on-ramp at Gatlin Boulevard
I-95 N on-ramp at St. Lucie West Boulevard
I-95 N on-ramp at Midway Road
I-95 N on-ramp at Orange Avenue
North Causeway/CR 605 intersection
North Causeway/U.S. 1 intersection
Okeechobee Road
Port St. Lucie Boulevard
Prima Vista Boulevard
U.S. 1/Avenue A intersection
U.S. 1/Virginia Avenue intersection
U.S. 1/Citrus Avenue intersection
D. Goals, Strategies and Policies

______________________________
Regional Goal 5.1

Lives and property which are less susceptible to disasters.

Indicator:

Percent change in residential development in Category 1 hurricane evacuation areas.

Number of new health care or medical centers constructed in Category 3 hurricane evacuation areas.

Percent reduction in the average rate of population growth in Category 3 hurricane evacuation areas.

Number of private facility comprehensive emergency management plans that are consistent with State, regional and county plans.

Reduction in the number of injuries and fatalities caused by disasters.

Strategy 5.1.1: Direct development away from areas most vulnerable to the effects of natural and manmade disasters.

Policy 5.1.1.1: Discourage the designation of lands in coastal high hazard and floodplain areas which would increase development intensities and densities above those designated in local government comprehensive plans. Support efforts to retain undeveloped lands in such areas as public recreational sites, agricultural reserve areas, natural storm buffers, or for other non-residential uses.

Policy 5.1.1.2: Develop strategies which will reduce existing population densities in coastal high hazard and floodplain areas. Encourage the incorporation and enhancement of existing natural systems and open areas within such developed areas to serve as natural storm buffers and post-disaster staging areas.

Policy 5.1.1.3: Limit thoroughfare or other infrastructure improvements such as water and sewer system expansions in coastal high hazard or floodplain areas to those deemed necessary to correct existing infrastructure deficiencies or as part of the maintenance and repair of existing infrastructure. Prohibit the construction of bridges or causeways to spoil or barrier islands not currently served by such infrastructure.
Policy 5.1.1.4: Reduce or eliminate the expenditure of federal, State and local funds used to subsidize the reconstruction or repair of existing developments destroyed by a natural disaster in coastal high hazard and floodplain areas.

Policy 5.1.1.5: Limit the construction of new commercial or public facilities which regularly use, handle, or store hazardous materials in coastal high hazard and floodplain areas or within defined wellfield zones of influence. Where such siting occurs in accordance with local government comprehensive plans, require the development of a comprehensive facility emergency preparedness plan which clearly defines measures to mitigate the effects of a hazardous materials release.

Policy 5.1.1.6: Prohibit development of new critical care, health care, and special needs facilities inside coastal high hazard and floodplain areas.

Policy 5.1.1.7: Assist local governments to develop and deliver public information and awareness programs concerning natural and manmade disasters and emergency response.

Regional Goal 5.2

Reduced vulnerability to disasters.

Indicator:

Number of new commercial or public facilities other than water-dependent uses such as marinas constructed in Category 1 hurricane evacuation areas which use, handle or store hazardous materials or extremely hazardous substances.

Percent change in existing county hurricane evacuation clearance times.

Number of regional hazardous materials releases.

Strategy 5.2.1: Utilize land use, transportation, and community planning processes to address vulnerability issues.

Policy 5.2.1.1: Plan and design new development and redevelopment to increase the ability of the internal and external roadway network to accommodate emergency traffic, enhance post disaster recovery efforts, and provide natural central locations for public shelters and emergency relief centers.

Policy 5.2.1.2: Prohibit the siting of solid or hazardous waste disposal, storage, transfer, or treatment facilities in coastal high hazard and floodplain areas, or within community wellfield zones.
Policy 5.2.1.3: Limit thoroughfare and transportation infrastructure repair or expansion projects on emergency evacuation routes during the hurricane season.

Policy 5.2.1.4: Give priority to maintenance or construction improvement projects on bridges, causeways, and highway facilities designated as major evacuation routes or critical links.

Policy 5.2.1.5: Cooperate with the State Division of Emergency Management, the Regional Planning Council, and the private sector to periodically perform regional behavioral and evacuation analyses based upon the latest population figures and best available modeling technology.

Policy 5.2.1.6: Cooperate with State and regional agencies to develop a public emergency advisory and communications system for evacuation thoroughfares. Consideration should be given to increasing the numbers and visibility of signs designating evacuation routes, utilizing portable electronic message boards, and providing for a dedicated emergency radio broadcast station evacuees can monitor for pertinent information.

Policy 5.2.1.7: Limit development in coastal high hazard areas to non-residential or water-dependent land uses such as cargo and passenger shipping terminals, marinas, and water and tourist-oriented recreation facilities. Where such facilities regularly use, handle, or store hazardous materials, require development of a comprehensive facility emergency preparedness plan which clearly defines mitigative criteria in the event of a hazardous materials release and which outlines pre-disaster protective actions which will prevent the release of hazardous materials during a hurricane.

Policy 5.2.1.8: Review existing flood pathways and natural storm water runoff, catchment, and retention systems. Prohibit the approval of new developments or expansion of existing developments in such areas.

---

Regional Goal 5.3

Adequate and safe shelter within the Region for residents in coastal high hazard and floodplain areas.

Indicator:

Percent change in the availability of safe public shelter space based on current regional disaster shelter survey population figures.

Strategy 5.3.1: Provide shelter space for residents of areas susceptible to flooding from the effects of hurricanes and other storms.
Policy 5.3.1.1: Develop new and enhance existing outreach programs to increase the awareness and knowledge of citizens regarding evacuation zones, shelter locations, safe home sheltering and disaster preparedness practices, and evacuation routes.

Policy 5.3.1.2: Restrict expansion of existing critical care, health care, and special needs facilities located in coastal high hazard and floodplain areas. Retrofit buildings of such facilities outside the coastal high hazard and floodplain areas to shelter specifications.

Policy 5.3.1.3: Increase local emergency management public awareness efforts regarding the special needs survey program. Designate and equip enough special needs shelters to accommodate the jurisdiction’s special needs population as demonstrated by annual survey.

Policy 5.3.1.4: Require existing critical care, health care, and special needs facilities located in coastal high hazard and floodplain areas to enter into disaster assistance agreements with similar facilities located outside the vulnerable areas. These agreements should include provisions which detail patient evacuation and transfer, sheltering, and special needs or critical care requirements. Such agreements should be adopted into each facility’s emergency preparedness plan and periodically reviewed by local emergency management agencies.

Policy 5.3.1.5: Encourage municipal officials and school boards to carry out a cooperate effort which will lead to the adoption of new campus construction practices and provisions for public sheltering as detailed under the Educational Facilities Act. This should include the retrofitting to shelter specifications of at least one main building greater than 5,000 square feet in floor area, exclusive of mechanical or storage uses, on campuses located outside coastal high hazard and floodplain areas.

Policy 5.3.1.6: Existing mobile home parks with populations greater than 25 residents, located within coastal high hazard and floodplain areas, should provide residents with alternative off-site sheltering exclusive of existing designated shelters. Mobile home parks located outside vulnerable areas with populations greater than 25 residents should provide an on-site shelter facility to accommodate their needs.

Policy 5.3.1.7: Construct residences located outside coastal high hazard and floodplain areas with a room designed to provide safe shelter for home sheltering residents. Encourage financial and insurance institutions to provide residents living outside vulnerable areas with incentives to construct or retrofit residences so they safely serve as home shelters.
**Policy 5.3.1.8:** Site new public buildings outside coastal high hazard and floodplain areas. Prohibit construction of such buildings in vulnerable areas except when absolutely necessary to provide for the health, safety, and welfare of existing residents. Require that new public buildings, exclusive of mechanical or storage uses and in excess of 5,000 square feet in floor area, be constructed to shelter specifications. Retrofit existing public buildings which conform to the above criteria to shelter specifications.

**Policy 5.3.1.9:** Coordinate with the State Division of Emergency Management, American Red Cross, the Regional Planning Council, local governments and other private and volunteer organizations to develop a comprehensive regional emergency shelter program. The program should include provisions to resolve differences in shelter space allocation criteria, conduct a regional disaster shelter structural survey, perform a behavioral and evacuation analysis based upon the affected population in all hurricane category zones, and explore funding alternatives to retrofit existing public buildings to shelter specifications.

**Policy 5.3.1.10:** In accordance with State, local, and regional hurricane evacuation studies and emergency evacuation plans, require new developments to fully mitigate impacts on existing public shelter capacities by providing additional shelter space which can safely accommodate the development’s residents who are likely to seek public shelter locally during a hurricane event.

**Regional Goal 5.4**

An integrated system of planning between local government and emergency planning agencies.

**Indicatort:**

*Number of local comprehensive plans amended to reflect the regional policies.*

**Strategy 5.4.1:** Develop the mechanisms necessary to ensure that emergency planning agencies have input into the local government decision-making process.

**Policy 5.4.1.1:** Local governments should work in coordination with the Regional Planning Council to establish a permanent regional disaster preparedness committee. The committee will provide an ongoing forum where community planning and development issues which impact regional emergency preparedness can be addressed and resolved.

**Policy 5.4.1.2:** Include local emergency management agencies at the initial states of local development review and code revision processes.
Policy 5.4.1.3: Local governments should include a comprehensive emergency preparedness and mitigation section in local development approval review processes.

Policy 5.4.1.4: Local emergency management agencies should conduct introductory and annual refresher emergency preparedness education classes for elected and appointed officials. The classes should include basic concepts of federal, State, and local emergency management concepts of operations, including Incident Command and Emergency Support Functions.

Policy 5.4.1.5: Review local emergency management agency organizational hierarchy, current mission requirements, and chain of command to ensure compliance under Chapter 252, Florida Statutes.

Policy 5.4.1.6: Establish or maintain local emergency management departments which are: 1) not dependent upon any other department for its funding; 2) adequately funded and staffed to perform its mission; and 3) afforded direct access to the governing body.

Policy 5.4.1.7: Limit development, redevelopment, and expansion of existing development, or altering land elevations in floodplain areas or flood-prone areas adjacent to emergency evacuation routes. When possible, preserve such lands in their natural state as water retention areas or flood water pathways.

---

**Regional Goal 5.5**

**Reduced regional vulnerability and rapid post-disaster recovery from future disasters.**

**Indicator:**

*New public facilities and infrastructure constructed within Category 1 hurricane evacuation areas.*

*Number of local government comprehensive plans amended to reflect post-disaster policies.*

*Percent population growth in Category 3 hurricane areas.*

**Strategy 5.5.1:** Initiate disaster preparedness activities which will protect lives and property and reduce evacuation times.

**Policy 5.5.1.1:** Establish a permanent regional disaster preparedness committee in coordination with the State Division of Emergency Management, the Regional...
Planning Council, local governments, and private and volunteer organizations. The committee will provide an ongoing forum for the development of regional emergency management post-disaster strategies. These strategies should require regional ports and aviation facilities to develop and maintain comprehensive emergency management plans consistent with county and State plans, include developing a comprehensive regional recovery plan, consistent with local and State plans, which provides for regional relief staging areas, interjurisdictional emergency rapid response teams, standardized interjurisdictional electronic communications networks, standardized interjurisdictional response unit organization and protocols, regional field command and support sites, and procedures to quickly restore electricity and other vital utilities to afflicted areas.

Policy 5.5.1.2: Local governments should coordinate efforts with the Regional Planning Council and State Division of Emergency Management to encourage the State legislature to adopt and enforce model building code requirements and incentives for new residential structures, both single- and multiple-family, which address natural disaster issues. Such issues should include roof construction and attachment, building weather envelope, and window, entry door, and garage door failures. These requirements should specifically address incentives for shutters, improved roof connections, and creation of a safe shelter space within the living area available to each household.

Policy 5.5.1.3: Maintain or reduce hurricane evacuation clearance times within the Treasure Coast Region.

Policy 5.5.1.4: Give priority to infrastructure improvements that contribute to the reduction of evacuation clearance times, regional shelter capacities, and critical and health care capacities.

Policy 5.5.1.5: Local governments should encourage the retrofitting of existing buildings for window and entry door protection through tax incentives or other incentives.

Policy 5.5.1.6: Support legislation which requires that new state-owned and financed construction, as well as redevelopment or improvements to State facilities, must comply with all applicable portions of local building codes.

Policy 5.5.1.7: Plan and design new development and redevelopment to increase the ability of the internal and external roadway network to accommodate emergency traffic, enhance post disaster recovery efforts, and provide central locations for public shelters and emergency relief centers.

Strategy 5.5.2: Establish mechanisms and regulations necessary for post-disaster reconstruction to occur consistent with policies to make future disasters less destructive to lives and property.
**Policy 5.5.2.1:** Prohibit post-disaster reconstruction and redevelopment that utilizes outdated pre-disaster building practices.

**Policy 5.5.2.2:** Cooperate with State and local environmental agencies to waive restrictions on the open burning of vegetative and construction debris, and designation of temporary debris holding areas in times of emergency.

**Policy 5.5.2.3:** Plan for the reconstruction and redevelopment of all public facilities destroyed by a hurricane in areas outside the coastal high hazard and floodplain areas.

**Policy 5.5.2.4:** Designate facilities other than schools as long-term shelters for displaced residents so that school campuses can be allowed to return to normal operation after a hurricane has passed.

**Policy 5.5.2.5:** Local governments and public utilities should establish a local emergency trust fund to be used solely for the repair and restoration of critical public facilities damaged or destroyed by a disaster.
6. Natural Resources of Regional Significance

A. Trends and Conditions

1. Introduction

"natural resource of regional significance" is defined in Chapter 27E-5.002, Florida Administrative Code (FAC), as a natural resource or system of interrelated natural resources, that due to its function, size, rarity or endangerment retains or provides benefit of regional significance to the natural or human environment, regardless of ownership. In broadest terms, natural resources of regional significance in the Treasure Coast Region include the aquifers, waterbodies, and relatively undisturbed upland and wetland natural communities and ecosystems. The main reasons for this are: 1) the quality and quantity of groundwater present in the aquifers affects the water supply available for a variety of important and competing users; 2) seepage from waterbodies and wetland systems and groundwater recharge through natural communities and ecosystems affect the surficial aquifers, which are a major source of irrigation and potable water in the Region; 3) most of the waterbodies, wetlands, and upland natural communities and ecosystems in the Region have been degraded or partially eliminated; 4) many of the waterbodies, wetlands, and upland natural communities and ecosystems provide habitat for one or more endangered or potentially endangered species; and 5) the waterbodies and natural communities and ecosystems of the Region offer recreational opportunities important to the economy and quality of life in the Region.

Pursuant to Chapter 27E-5.004, FAC, natural resources of regional significance are to be identified by specific geographic location and not solely by generic type using the best and most recent data and information available. Groundwater resources will not be shown on a map because the shallow (surficial) and deep (Floridan) aquifers occur beneath the entire Region (Fernald and Patton 1984). The most detailed mapping of waterbodies and wetlands available is from the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), which classified deepwater and wetland resources in 1984. This information was updated for much of the Region in 1990 by the South Florida Water Management District (SFWMD) (SRPP Map, Surface Water Resources). The best information on upland natural communities in the Region is from a land cover map provided by the Florida Game and Fresh Water Fish Commission (FGFWFC). The land cover map is based on the analysis of landsat satellite imagery obtained in 1987 and 1988. In addition to the natural communities classified as uplands, the land cover map also shows waterbodies and wetland systems (SRPP Map, Natural Systems).
2. **Description and Significance of Regional Resources**

The natural resources of the Region can be broadly classified as groundwater, marine, estuarine, freshwater, and upland. Except for groundwater, these resources can be further subdivided into natural communities and ecosystems. A natural community is defined as a distinct and reoccurring assemblage of populations of plants and animals naturally associated with each other and their physical environment. An ecosystem is the combination of the natural community and its physical environment, which are interrelated and function together. Protection of the ecosystem is critical to maintaining the natural communities in the Region.

The following discussion provides a general description of the natural resources and explains why they are regionally significant. A detailed description of the natural communities occurring in the Region is provided in the Guide to Natural Communities of Florida (Florida Natural Areas Inventory and Florida Department of Natural Resources 1990).

a. **Groundwater Resources** - The shallow surficial aquifers are important sources of groundwater in the Region. Undifferentiated aquifers occur in Indian River, St. Lucie, and Martin Counties and in Palm Beach County north of Delray Beach. The thickness of these aquifers range from less than 50 feet to 200 feet. Sediments in this aquifer system consist primarily of sand, clay, silt, shell, and limestone. The Biscayne Aquifer occurs in southeastern Palm Beach County. This aquifer reaches a thickness of more than 170 feet along the coast, but it is less than ten feet thick at the edge of the Everglades. The sediments comprising the Biscayne Aquifer are highly permeable limestones, sandstones, and sands. These aquifers are recharged by rainwater percolating through uplands and from seepage from waterbodies, canals, and wetlands.

Underlying the shallow aquifers is the Hawthorne Formation which contains relatively impermeable clays and marls. Below this confining layer is the Floridan Aquifer which, in this Region, contains slightly to highly mineralized water. The Floridan Aquifer consists mostly of limestone and dolomite, and under natural conditions there is no opportunity for shallow and Floridan waters to mix. The Floridan Aquifer produces free flowing artesian wells. For many years, Indian River County and some coastal communities have been withdrawing water from the Floridan Aquifer. The water is demineralized by reverse osmosis and it provides a potable water supply to coastal communities. In recent years more water utilities have been turning to this practice. The Floridan Aquifer is recharged from rainwater in the central part of the State, outside the Region.

b. **Marine Resources** - The Atlantic Ocean lies adjacent to all four counties in the Region. Although most of the ocean is outside the boundaries of the Region, this is a natural resource of regional significance because it has a great influence on the economy of the Region. Marine resources are important for navigation,
import and export of supplies, shellfish harvesting, commercial and sport fishing, and recreation for residents and tourists. The winds and waves of the Atlantic Ocean shape the beaches and dunes along the shoreline of the Region. Southward flowing nearshore currents transport sand which eventually forms beaches and sand bars. The northern flow of the Gulf Stream transports marine organisms from the tropics and has a tempering effect on the climate of the Region.

Examples of marine benthic natural communities and ecosystems include hard bottom, sand bottom, coral reef, mollusk reef, worm reef and algal bed. These communities occur in patches at scattered locations off the coast. Of special note are reef systems that have been nominated for designation as National Marine Sanctuaries. The St. Lucie Nearshore Reefs occur off the coast of Martin County, and the Vero Beach Nearshore Reefs and Oculina Reefs occur off the Indian River County. The large size and diversity of marine organisms in these reefs makes them regionally significant.

Fish and other marine organisms associated with marine communities are dependent on the Region's estuaries for reproduction and survival at various stages of their life cycle. Also, several species of endangered and threatened sea turtles nest on the Region's beaches from March through October. Protection of marine resources is essential to maintaining stability and growth in sectors of the economy dependent on commercial and recreational fishing and tourism.

c. **Estuarine Resources** - Estuaries are waterbodies in which seawater is significantly diluted with freshwater flowing from the land. The main estuaries in the Region are the Indian River Lagoon, Lake Worth Lagoon, Lake Wyman Lagoon, Lake Boca Raton Lagoon, and the portions of the Sebastian, St. Lucie, and Loxahatchee rivers near the inlets. The Region's estuaries are important because they contain highly productive natural communities and ecosystems, including seagrass beds, algal beds, oyster beds, exposed sand and shell bottoms, mud flats, tidal marshes, and mangrove swamps. Seagrasses help stabilize sediments, enhance water quality, provide habitat for animals, and are primary producers at the base of the marine food chain. They are also an important food source for manatees and serve as nursery areas for a high percentage of the regionally important commercial and sport fish species. Exposed sand and shell bottoms support algae, clams, oysters, and other bottom dwelling organisms which provide a foraging base for fish. Drift algal beds are unattached communities that move in response to the water currents. Similar to seagrasses, drift algal beds provide habitat and nursery areas for fish and may have special importance to juvenile shrimp, lobsters and other invertebrates. Mangrove communities provide a nutrient base which is critical in maintaining the Region's commercial and sport fish populations. The estuaries are heavily used by recreational boaters and are important to the marine industries. The estuaries are prime locations for boat facilities, waterfront development and other water-related activities.
d. **Freshwater Resources** - Natural wetland and deepwater systems include lakes, ponds, rivers, marshes, swamps, sloughs, and wet prairies. Examples of natural wetland systems in the Region include: 1) Blue Cypress Lake and the St. John's Marsh in Indian River County; 2) Allapattah Flats in western St. Lucie and Martin Counties; 3) the Savannas in eastern St. Lucie and Martin Counties; 4) the Loxahatchee Slough, water catchment areas, and conservation areas in Palm Beach County; 5) Lake Okeechobee and the Everglades in Martin and Palm Beach Counties; and 6) the Sebastian, St. Lucie, and Loxahatchee Rivers. In addition to these major systems, there are numerous unnamed wetlands on public and private property throughout the Region (see SRPP Map, Surface Water Resources).

The Region’s aquatic systems provide a great diversity of benefits making them natural resources of regional significance. Lake Okeechobee supplies potable water to communities near its shores including the cities of Belle Glade, Pahokee, and South Bay. The City of West Palm Beach relies on Lake Mangonia and Clear Lake for drinking water as well as groundwater withdrawal. These lakes are fed water by canal from the West Palm Beach Water Catchment Area, an 18 square mile wetland west of the City. Inland wetlands function as collection basins in natural drainage areas that retain and detain water at various flood stages. Pollutants such as hydrocarbons, heavy metals, nitrogen, phosphorous, suspended solids, and organic matter are all removed from water in wetlands by a number of different processes. Natural systems are also critically important to the survival and well-being of a large number of plant and animal species. Wetland habitats have recreational values especially for hunting, fishing, canoeing, and bird watching. In addition, because of the thermal characteristics of water, large wetlands and deepwater habitats can have local and regional effects on wind patterns, humidity levels, precipitation rates, and temperature. Citrus and other temperature sensitive crops are less likely to suffer frost damage when located downwind of waterbodies and wetland systems.

e. **Upland Resources** - Examples of typical upland natural communities and ecosystems in the Region include beach dune, coastal strand, maritime hammock, scrub, and pine flatwoods. These natural communities are important because they provide habitat for a variety of plants and animals. These include many species listed as endangered or potentially endangered by the FGFWFC, Florida Department of Agriculture and Consumer Services, Florida Council on Rare and Endangered Plants and Animals, or the USFWS. Natural upland communities are also important for providing a clean source of aquifer recharge because those areas are relatively free of pollutants.

Coastal strand occurs along the primary dune system adjacent to the Atlantic Ocean. This community protects the primary dune system and helps to maintain the integrity of the barrier islands during major storms. Tropical and hardwood hammocks occur in small, isolated locations along the coast and at scattered locations inland. Tropical hammocks, which have a unique blend of temperate
and tropical species, are considered a regionally endangered natural community because of their rarity in the Region. Scrub communities occur primarily along the well-drained and elevated Atlantic Coastal Ridge, and along a small ridge in western Indian River, Martin and St. Lucie Counties. Scrub is also considered a regionally endangered natural community because much of it has been eliminated by development. Pine flatwoods is the most common natural community in the Region. This community type occurs on less well-drained soils inland from the coast. Pine flatwoods often have wetlands interspersed throughout the community.

3. Historical Changes and Existing Conditions

Many of the waterbodies and wetland systems in the Region have been altered, and many acres of natural communities have been eliminated. Examining some of the major changes that have taken place can provide a better understanding of the remaining value of the natural resources and the issues related to their protection. This section describes some of the historical changes that have taken place to natural resources in the Region.

a. Indian River Lagoon

The Indian River Lagoon is a 156 mile long estuary separating the barrier island from the mainland on the east coast of Florida. The southern half of the lagoon is within the Region, extending the full length of Indian River, St. Lucie, and Martin Counties, and continues south to the Jupiter Inlet in Palm Beach County. Extensive seagrass beds in the shallow waters, and tidal swamp forests dominated by mangroves along the shoreline contribute to the lagoon serving as a major spawning and nursery ground for fish and marine life. The Indian River Lagoon is one of the most diverse estuaries in North America. The lagoon system accounts for hundreds of millions of dollars in sport fishing, and boat and marine sales annually (Woodward-Clyde Consultants 1995b).

Departures from the natural condition of the Indian River Lagoon include the dredging and maintenance of four major inlets in the Region that open into the estuary. These include the Sebastian Inlet, Fort Pierce Inlet, St. Lucie Inlet, and Jupiter Inlet. The permanent opening or enlarging of these inlets has caused an increase in salinity levels which has changed the ecological composition of the lagoon system.

Another major change was the construction of the Atlantic Intracoastal Waterway (ICW), which was completed in 1941 (Florida Department of Natural Resources 1989). This waterway extends from Jacksonville to Miami. The ICW extends through the full length of the Indian River Lagoon in the Region. The ICW is 125 feet wide and 12 feet deep north of Fort Pierce Harbor, and 10 feet deep south of this point. Dredging and
deepening the ICW from 1953 to 1961 resulted in the creation of 55 spoil islands in Indian River County, 34 in St. Lucie County, and 7 in Martin County (Florida Department of Natural Resources 1990).

The dredging of inlets and channels and the deposition of spoil from these projects has had the direct effect of reducing the amount of natural communities in the lagoon. These activities also have had the indirect effect of increasing boat traffic, and altering the historical patterns of flushing and water circulation in the lagoon.

Another change is that thousands of acres of tidal swamps and marshes adjacent to the Lagoon were adversely impacted by the creation of impoundments to control the reproduction of mosquitoes. Dikes were constructed around mangrove systems and the areas were flooded so that female mosquitoes could not lay their eggs on the moist soil. This flooding eliminated habitat, food source, and water quality benefits for many species within the Lagoon as well as changing diversity, vegetation, and wildlife types. Current management of the impoundments by Mosquito Control Districts within the region include: 1) the acquisition of privately owned impounded marshes; 2) reconnection of these areas through installation of water control structures such as gated culverts through the perimeter dike allowing the alteration of water levels to be less frequent and less severe (Rotational Impoundment Management); and 3) open marsh water management which reconnects the Lagoon year round through open culverts or breaches in the impoundment dike.

Alteration of the watersheds draining into the Indian River Lagoon represent another major change that has taken place primarily since the early 1900s. The construction of major drainage networks for agriculture and urban development, primarily in the 1950s, changed the discharge pattern of fresh water into the lagoon. The resultant uneven flow rates of fresh water affect the salinity balance in the estuary. Stormwater runoff is also a major source of pollutants originating from urban areas.

The Indian River Lagoon has been designated as an Estuary of National Significance (Woodward-Clyde Consultants 1995). This program represents a coordinated effort by local governments, state and federal agencies, and private interests to identify issues, resolve problems, and restore the estuarine resources of the lagoon system. The National Estuary Program makes available federal funds to be used to implement specific activities designed to improve water quality.

b. Lake Worth Lagoon

Lake Worth Lagoon is a 20-mile long estuary separating the barrier island from the mainland. This estuary is located centrally along the east coast
of Palm Beach County. Similar to the Indian River Lagoon, Lake Worth Lagoon has important natural communities, including seagrass beds and mangrove forests, which support a variety of fish and wildlife. This estuary is equally important for providing recreational opportunities and is vital to commerce and maintaining the economy of the marine industries in Palm Beach County.

In predevelopment conditions in the early 1800s, Lake Worth was primarily a freshwater system without permanent connections to the ocean (Dames and Moore et al. 1990). The first major change to the system was in 1877 with the construction of an inlet, which changed Lake Worth into a brackish water lagoon system. During the 1890s a navigation channel was dredged from the north end of Lake Worth Lagoon to the Jupiter Inlet. This resulted in increased freshwater flows to the north end of the lagoon. The ICW was completed from the south end of Lake Worth to Biscayne Bay in the early 1900s. Today the ICW runs the entire length of the lagoon.

In 1915 the Port of Palm Beach dredged the Lake Worth Inlet to 4 feet deep near the City of Riviera Beach. In 1925 the inlet was deepened to 16 feet. This inlet is now 400 feet wide and 35 feet deep. In 1917 the South Lake Worth Inlet was created near Boynton Beach to improve tidal circulation and provide flushing to the south end of the lagoon. This inlet is now 200 feet wide and 6 feet deep. Peanut Island, as well as other spoil islands were created from spoil dredged from the inlets and ICW.

The construction of the Earman River (C-17 Canal), West Palm Beach Canal (C-51 Canal) and Boynton Canal (C-16 Canal) resulted in additional freshwater flow into Lake Worth Lagoon. Along with the construction of these canals, the groundwater was lowered in the lands adjacent to and west of the lagoon. This allowed urbanization of the basins draining into the lagoon, which has altered the timing of stormwater flow into the estuary and caused more pollutants to enter the system.

Along with urbanization in the 1900s, most of the natural shoreline of Lake Worth has been altered by dredge and fill activities. At present, approximately 65 percent of the lagoon’s shoreline is bulkheaded and only about 19 percent of the shoreline remains fringed by mangroves. In addition, the Riviera Beach Power Plant discharges warm water into the lagoon. The warm water discharge point, just south of the Lake Worth Inlet, is one of the major attractants of manatees on the east coast of Florida. Heavy boat traffic in the coastal waterway threatens this endangered species.

c. Wetlands and Uplands
Analysis of soil survey maps from the U.S. Department of Agriculture show that wetlands historically covered about 69 percent of the Region, and uplands covered 31 percent. Since the early 1900s there have been a number of changes to the land cover that have radically altered predevelopment conditions. The creation of a network of canals in the Region resulted in draining wetlands and lowering the water table. These changes made the land suitable for the agricultural and urban development that followed.

The most recent land cover data available for the Region, FGFWFC landsat satellite imagery (SRPP Map, Natural Systems), indicates that at least 64 percent of the natural communities that once occurred in the Region have been eliminated. Agriculture now accounts for about 45 percent of the land cover, urban development 19 percent, wetlands 20 percent, and upland natural communities 16 percent (Table 6.1).

The majority of the natural communities which have been preserved are shown in SRPP Map, Planning and Resource Management Areas. Most of the remaining wetlands occur in the St. John's Marsh area in western Indian River County, and the Loxahatchee National Wildlife Refuge/Everglades Water Conservation Areas in southern Palm Beach County. Most of the remaining uplands in the Region occur in and near
Table 6.1  Historical Changes in the Amount of Natural Communities in the Treasure Coast Region

<table>
<thead>
<tr>
<th>COVER TYPE</th>
<th>HISTORICAL&lt;sup&gt;a&lt;/sup&gt;</th>
<th>1989&lt;sup&gt;b&lt;/sup&gt;</th>
<th>PERCENT OF HABITAT REMAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACRES</td>
<td>PERCENT OF TOTAL</td>
<td>ACRES</td>
</tr>
<tr>
<td>AGRICULTURE</td>
<td>0</td>
<td>0</td>
<td>1,032,159</td>
</tr>
<tr>
<td>URBAN</td>
<td>0</td>
<td>0</td>
<td>436,027</td>
</tr>
<tr>
<td>WETLAND</td>
<td>1,608,991&lt;sup&gt;c&lt;/sup&gt;</td>
<td>69</td>
<td>449,078</td>
</tr>
<tr>
<td>UPLAND</td>
<td>711,649</td>
<td>31</td>
<td>369,116</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,320,640&lt;sup&gt;f&lt;/sup&gt;</td>
<td>100</td>
<td>2,286,380</td>
</tr>
<tr>
<td>UPLAND SUMMARY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. PINELAND</td>
<td>6,11,236&lt;sup&gt;d&lt;/sup&gt;</td>
<td>26</td>
<td>352,792&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>1. Pine Flatwoods</td>
<td>?</td>
<td>-</td>
<td>151,046&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>2. Dry Prairie</td>
<td>?</td>
<td>-</td>
<td>139,087</td>
</tr>
<tr>
<td>3. Hardwood Hammock</td>
<td>?</td>
<td>-</td>
<td>62,659</td>
</tr>
<tr>
<td>B. SCRUB</td>
<td>77,494&lt;sup&gt;e&lt;/sup&gt;</td>
<td>3</td>
<td>16,004&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td>C. COASTAL STRAND</td>
<td>22,919</td>
<td>1</td>
<td>304&lt;sup&gt;g&lt;/sup&gt;</td>
</tr>
<tr>
<td>D. TROPICAL HAMMOCK</td>
<td>?</td>
<td>-</td>
<td>16&lt;sup&gt;g&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>Values obtained from USDA Soil and Survey Map unless otherwise noted.
<sup>b</sup>Values obtained from FGFWFC 1987-1988 landsat satellite imagery.
<sup>c</sup>Values obtained by subtracting upland acreage from total.
<sup>d</sup>Values adjusted based on use of refined scrub data noted in footnote e.
<sup>e</sup>Values obtained from Fernald (1989) study of scrub.
<sup>f</sup>Value obtained from 1989 Florida Statistical Abstract.
<sup>g</sup>Small acreage estimates generated using satellite imagery are not reliable.

The Dupuis Reserve/Corbett Wildlife Management Area and Jonathan Dickinson State Park/Loxahatchee River area, which are located in southern Martin and northern Palm Beach Counties. The largest natural areas preserved in St. Lucie County are located in the Savannas State Reserve and adjacent to the North Fork of the St. Lucie River.

Coastal uplands including the beach dune and associated coastal habitats span the Region as the eastern edge of the barrier islands. This ecosystem is dynamic by its very nature. During previous geologic periods, when the ocean waters were higher, the barrier islands were mere sandbars. As waters receded, specific types of vegetation became established protecting the sands of the dune. However, humans have impacted this fragile system in several ways including: 1) vegetation clearing or severe trimming; 2) construction of buildings on the primary dune system; 3) off-road vehicles compressing plants, animals and substrate; 3) hardening of the shoreline (seawalls); and 4) the installation of jetties at inlets and in front of buildings. Jetties or groans interfere with the natural longshore transport of sand which naturally renourishes the beach and dune ecosystem. This artificial projection into the water usually causes a buildup of sand on the north side of the jetty and severe erosion on the
south side. Florida’s Coastal Construction Setback Law was enacted to protect coastal areas from development practices that cause beach erosion, prevent encroachment of building onto the beach-dune system, and prevent existing and future construction from being unreasonably subject to damage from storms.

Most of the coastal strand and maritime hammock natural communities have been eliminated in Palm Beach County. These communities occur primarily at isolated locations along the coast in the northern three counties. The main relic stands are protected in the parks and preserves located on the barrier island systems. The largest preserves containing coastal strand is at Blowing Rocks in Martin County.

In Palm Beach County, as much as 95 percent of the historic scrub has been removed for urban development. Region-wide, about 21 percent of the original scrub still remains. The largest remnant of scrub in the Region, about 2000 acres, occurs in the eastern part of Jonathan Dickinson State Park. The most significant other preserved tracts of scrub occur at the Seabranch property in Martin County and the Savannas State Reserve in St. Lucie County. The most significant parcel of privately-owned scrub in the Region is over 1000 acres on the Atlantic Ridge Ecosystem site in Martin County. This parcel is under consideration for purchase through the Florida Conservation and Recreation Lands (CARL) and Save Our Rivers (SOR) Programs.

Pine flatwoods have also been cleared for agricultural and urban development. Most of the pine flatwoods that have been preserved are in the Dupuis Reserve/Corbett Wildlife Management Area and Jonathan Dickinson State Park. The largest remaining privately-owned area dominated by pine flatwoods is known as the Pal-Mar, which is about 22,000 acres. Pal-Mar is also under consideration for purchase through the CARL and SOR Programs. Other large privately-owned tracts of pine flatwoods occur in northern Indian River County just west of the Sebastian River, and just west of Blue Cypress Lake; at scattered locations in St. Lucie County; throughout Martin County; and in the area surrounding the Loxahatchee Slough and West Palm Beach Water Catchment Area in Palm Beach County.

Another historical change that has affected a variety of upland and wetland systems is the introduction of exotic, alien or invasive plant species which out compete native vegetation. Their rapid growth or reproduction cause displacement of natural habitats through a variety of ways including, but not limited to; altering water tables, introducing disease, increasing erosion, altering nutrient cycles, and creating dense cover which excludes the essential components of habitats which are space, nutrients, water and shelter. Within the region, groups such as
“Pepper Busters” have organized and work as volunteers to eradicate exotic vegetation in parks, preserves, and public areas.
B. Important Regional Issues

Continued expansion of agricultural and urban development along the Treasure Coast will impact natural resources of regional significance. These impacts may be direct or indirect. Direct impacts occur when natural resources are degraded or eliminated on a site being developed. Indirect impacts occur when development activities affect natural resources off site or at a later time as a result of the development or utilization of the site. For example, direct impacts to waterbodies and wetlands occur when these systems are altered by dredge and fill activities. Indirect impacts occur when development activities result in increased demand in the water supply, lower the water table, alter the natural pattern of drainage, increase the volume of stormwater discharge, change the timing of stormwater discharge, decrease the quality of stormwater discharge, and displace wildlife.

It is apparent from the example above that many issues related to protecting natural resources of regional significance are interrelated. One reason for this is because nearly all human activities are dependent on or utilize water resources. It is difficult to use water or alter its natural pattern of flow without affecting natural communities. Water resource issues are discussed first because of their overall importance. This is followed by a discussion of other issues related to protecting natural communities and ecosystems. Each issue is accompanied by planning strategies designed to avoid or minimizing future impacts to natural resources. Because of the interrelationship between issues, some strategies may be beneficial in dealing with more than one issue.

1. Preservation of the Region’s Natural Systems

The natural systems of the Treasure Coast Region should be preserved. The quality of life enjoyed in the Region depends on the conservation of the natural environment. A plan for the Treasure Coast Region should chart a clear strategy that identifies significant natural systems and proposes methods to preserve them.

Patterns of Development

There must be many types of land uses in a well-planned Region. The ideal pattern of development for addressing natural system preservation is a series of compact urban areas (cities, towns and villages) surrounded by the countryside (nature preserves and rural uses such as agriculture). While land uses on many properties may be flexible through time, the nature preserves are easier to determine and should not be expected to change in the future. Therefore, a plan for the Region must start by determining the natural areas that should be preserved. Once nature preserves are identified, it will be easier to plan the areas that should be open for development.
Nature preserves, together with other rural uses, should form a permanent greenbelt that bounds development areas. They should be accessible to the extent that it does not affect the health of the native ecosystems. They provide recharge areas for potable water and stormwater attenuation for urban and rural uses.

THE ROLE OF NATURE PRESERVES

Nature preserves should be planned as the backbone of the comprehensive strategy for managing growth and development. They form the most important components of the Region’s countryside.

In addition, nature preserves should complement urban areas. They will play a fundamental role in the elimination of suburban sprawl because they will be the most permanent feature of the landscape. A major threat to the environment is not growth, but suburban growth, which due to its inefficient development form has required ever-increasing acreage to deliver an acceptable quality of life. Therefore, the solution to environmental problems is found in part in the form of development.

Historic patterns of development have done less damage to the natural environment than sprawl. The cities, towns and villages of traditional America provide a better model for the creation of well-defined urban areas and for the preservation of the environment than the conventional modes of development of South Florida. Before low-density suburban development became the general model for planning, there was minimal sprawl away from towns, and the natural and rural areas could coexist with urban settlements. Urban development used less land and, therefore, there was more land available for non-urban uses.

The rapid destruction of natural lands inspired many regulations. Unfortunately, they tended to address individual parcels instead of complete systems, and offered no ideas to fix the root of the problem: development form. Regulation focused on individual issues and did not address the inadequacy of popular development practices. Such practices did not create sustainable communities and damaged and devalued existing ecosystems.

NATURAL SYSTEMS PRESERVATION

A better approach is the preservation of complete systems. Major natural systems should be preserved in their entirety. This strategy implies preservation of larger parcels of land. This strategy provides an alternative to current piecemeal planning and regulatory practices. A system of native preserves would also limit suburban sprawl, as it would form permanent greenbelts that would bound development into well-
defined areas. Development could occur on either side of this greenbelt, but it would have clear edges and would be less likely to result in sprawl. This strategy would encourage urban settlements that are surrounded by nature rather than sprawling subdivisions that completely surround natural systems. If such a strategy is adopted, biological complexity and diversity of the area will be preserved and the urban environment will be improved as nature preserves would complement appropriate and preferred forms of development.

GREENWAYS

A greenway is a corridor of protected open space that is managed for conservation and/or recreation. Greenways link nature preserves, parks, and populated areas. Greenways can be as wide as a watershed or as narrow as a trail. Extensive greenway connections between large conservation areas often facilitate the movement of wildlife, and may be referred to as wildlife corridors. Greenways can also occur as narrow urban/suburban corridors of open space linking green areas in developed communities. In addition to preserving the biological diversity of plant and animal species by maintaining connections between nature preserves, greenways can be designed to: 1) soften urban and suburban landscapes; 2) direct development and growth away from important natural resource areas; 3) provide alternative transportation routes; and 4) provide environmental information opportunities as outdoor classrooms. Greenways within the Region should be designed to tie into the statewide greenways system which is being coordinated by the Florida Department of Environmental Protection. Greenways should be established as an integral part of restoring and sustaining Florida’s natural ecosystems.

ECOSYSTEM MANAGEMENT

The Florida Department of Environmental Protection has adopted the strategy of ecosystem management for protecting and sustaining Florida’s natural resources. A dominant theme of the initiative is the concept of stewardship, which is an idea that conveys a strong sense of ownership in, and responsibility for Florida’s land, air, water, and other resources. Promoting good stewardship is a fundamental goal of the ecosystem management concept.

The four cornerstones of ecosystem management include: 1) place-based management, which focuses on areas or places that are large enough to allow managers to address major regional hydrological and ecological
connections; 2) common-sense regulations, which is concerned with environmental results, and promotes voluntary alternatives to the traditional all-regulatory approach; 3) cultural change, which advocates non-adversarial, voluntary partnerships between government and citizens; and 4) foundations, which include science and technology, environmental education, program auditing and evaluation, etc. to ensure that ecosystem management is based on sound principles. All levels of State and local government should support the Florida Department of Environmental Protection’s Ecosystem Management initiative.

2. Protection of the Region’s Water Supply

WATER DEMANDS

Sectors competing for limited water resources within the Region include: 1) natural systems; 2) agriculture; and 3) domestic, municipal, and industrial users. Future increases in needs of these users will cause competition between all sectors for existing water supplies, and will create a need for more efficient use of water.

Certain volumes of water and flow rates are required to maintain the functions and values provided by natural systems and fish and wildlife species. A minimum baseline volume of water should be reserved for maintenance of these important sectors. The water demands of agriculture can be met partially by continued development and implementation of water conservation techniques, and by the development of stormwater attenuation facilities for the storage of surface water. The water demands of domestic, municipal, and industrial users can be met through increased use of water conservation techniques, increased utilization of desalination, development of aquifer storage and recovery systems, increased use of stormwater attenuation facilities for urban areas, and better management of existing water supply reservoirs. The water supply can also be enhanced by relying on reclaimed wastewater for irrigation. The main problem with this technique is that this type of water is not always available from water treatment facilities. All new and expanding wastewater treatment facilities should make reclaimed wastewater available for reuse, and new development should be required to use reclaimed wastewater. Managing the water supply through these activities should be supported.

GROUNDWATER QUALITY

In highly populated coastal areas, water supply problems arise where local demand may exceed the sustainable capacity of the sources, at least seasonally. This has led to groundwater quality being adversely impacted by overuse of wellfields located too close to the ocean. Saltwater
intrusion occurs as a result of reduced groundwater pressure which allows a vertical movement of saline water into the surficial aquifer. This may prevent utilization of portions of the aquifer as a potable water source. Activities leading to over-utilization of coastal wellfields should be discouraged. Support should be provided for the development of alternative water supplies for coastal areas experiencing saltwater intrusion.

GROUNDWATER RECHARGE

Another problem is the effect of urban development on water recharge into the shallow aquifers. Recharge is provided by infiltration of rainfall and seepage from waterbodies such as lakes and wetlands. Canals and ditches can also provide recharge in certain situations if managed properly, but these facilities generally reduce the potential for recharge in the areas they are designed to drain. Significant recharge areas in the Region are located in excessively drained sands found generally on the Atlantic coastal ridge in the eastern portion of the Region. Historically these areas were the preferred site for development and are currently highly urbanized. The predominance of urban and suburban development within these recharge areas has lowered the rate, quantity, and quality of recharge waters to the shallow aquifers. Also, when a natural community is cleared and replaced with irrigated lawns or landscape materials, this creates a greater demand for limited water resources.

PROTECTION OF NATURAL COMMUNITIES/OPEN SPACE

The protection of upland natural communities is a strategy that should be supported to protect the water supply in the Region. For purposes of water conservation, the protection of small parcels dominated by natural communities can be just as important as protecting large parcels. The effect on the water supply of eliminating natural communities on numerous small parcels is cumulative. Therefore, the protection of any size parcel dominated by natural communities should be viewed as enhancing the Region's water supply. This benefits the system by 1) providing a greater amount of recharge than a developed area, 2) not drawing from the existing water supply for irrigation, and 3) having fewer pollutants than recharge from developed areas.

WATER CONSERVATION

Urban supply shortages can be addressed by: 1) encouraging conservation (including water reuse, rate restructuring, installation of water-saving devices, and public education; 2) restricting use of water for irrigation and nonpotable water needs; 3) encouraging development to occur within service areas of facilities with available capacity; 4) discouraging development that would require significant expenditures in
public facilities or would severely impact recharge areas; and 5) cutting water demand by use of native vegetation and xeriscape practices.

WATER SUPPLY MANAGEMENT

Beyond water conservation and development of new water sources, attention must focus on protection, replenishment of existing supplies, expanded reuse, and better water management. Water supply plans should set minimum flows and water levels to be maintained in natural systems and water reservoirs. The increasing expanse of urban areas requires development and implementation of wellfield and aquifer protection plans and water management systems designed to protect the quantity and quality of recharge. Long range water supply plans should identify areas in advance that will have water supply shortages based on anticipated growth and water needs. The water supply plans should recognize that much of the currently unutilized water supply has been committed through permitting activities. Methods to reduce competition between competing users should be developed in the water supply plans. Better management of all water resources is required. The completion of water supply plans developed by the South Florida and St. John's Water Management Districts is needed to assist county and city government's plan for growth. The plans will help identify water supply planning strategies consistent with the area's water supply needs and available water resources. There should be coordination between the local governments and Water Management Districts in recognizing the limits of the water supply and planning for its use.

3. Protection of the Region’s Water Resources

RESOURCE CONTAMINATION

The Region's heavy reliance on surface and surficial, shallow aquifer waters as primary water sources, in combination with a predominance of very permeable sandy soil types, proximity of saline waters, low elevations and high water tables, makes the Region extremely vulnerable to water supply contamination. Potential and existing sources of contamination include: 1) stormwater runoff, 2) septic tank, sewage treatment plant, and landfill leachate, 3) mismanaged toxic and hazardous materials, 4) saltwater intrusion, 5) free flowing saline Floridan Aquifer irrigation wells, and 6) discharge of wastewater effluent that has not been adequately treated.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM

One level of protection from water pollution is provided by the Federal Clean Water Act, which established the National Pollution Discharge Elimination System Program. The Environmental Protection Agency
works with the Florida Department of Environmental Protection to issue permits to discharge from point sources into waters of the United States. The permits are designed to monitor and limit the level of pollutants discharged from point sources. Plans to minimize or eliminate contamination of the water supply should be developed and implemented at all levels, including programs by local governments.

LOSS OF NATURAL COMMUNITIES/OPEN SPACE

The extensive loss of natural communities has had a major impact on water resources. Rainwater that historically percolated through the soil of natural communities to recharge the surficial aquifer has been diverted to drainage systems. Stormwater that would historically remain in wetlands or in the ground and flow steadily to the receiving water bodies, now flows to canals, rivers and waterbodies much more quickly. This altered pattern of flow has a negative impact on the receiving bodies of water.

Policies for the improvement of the quality, timing, distribution and volume of water discharged into the Indian River Lagoon and St. Lucie Estuary, which are addressed in the Indian River Lagoon and Lake Okeechobee SWIM Plans need to be implemented.

STORMWATER RUNOFF

The impacts of stormwater runoff from urban and agricultural sources can be minimized through implementation of a series of management practices designed to detain or retain water on developed sites. Such practices are currently required of new development by Water Management Districts. Serious impacts have occurred and will continue to occur due to discharges from older development which were not designed to hold stormwater. Plans need to be developed and implemented to address and correct the problems created by these existing water management systems.

LITTORAL ZONES AND BUFFER ZONES

The addition of littoral zone planting of native aquatic plants around the edge in stormwater management ponds can serve to improve water quality. The vegetation can absorb pollutants and can assist in the breakdown of contaminants. The planting of littoral zones can also improve the habitat value of these systems for wildlife. Similarly, the provision of upland buffer zones around wetlands, waterbodies, and storm water management systems can help to prevent excessive nutrients and other pollutants from getting into these aquatic systems, and can also provide habitat for wildlife.
WASTEWATER CONTAMINATION

Problems associated with septic tank, sewage treatment plant, leaky underground storage tanks, and landfill leachate can be reduced through better land use regulations, environmentally sensitive siting of facilities, improved facility design, public education, and development and implementation of plans for better managing hazardous and toxic materials.

4. Protection of Marine Resources

SHORELINE EROSION

Beach erosion may be caused by activities that obstruct the normal transport of sand in near shore currents. The construction of a jetty that blocks the southward flow of sand in these currents causes accretion of the beaches north of the structure and beach erosion to the south. This is evident by examining how the north and south shorelines do not match at the major inlets in the Region. Activities that restore the natural transport of sand should be supported and activities that result in beach erosion should be discouraged.

DREDGING

Dredging in the marine environment can result in a high level of suspended sediments that can be detrimental to benthic communities and marine organisms. The effects of sedimentation on slow-growing, highly productive coral and worm reef communities is of particular concern. The organisms in these communities die or are displaced when high levels of sedimentation occur. Suspended sediments can be the result of dredging channels, basins, or beach renourishment projects, which dredge sand from offshore and transport it to build-up nearby beaches. Also, reef systems can be impacted when covered with dredged material transported offshore for disposal. Dredging and spoil disposal activities that result in impacts to reef communities should be discouraged. Programs to protect coral and worm reefs should be supported. The designation of the St. Lucie Nearshore Reefs, Vero Beach Nearshore Reefs, and Oculina Reefs as National Marine Sanctuaries should be supported.

OFFSHORE WASTE DISPOSAL

The offshore disposal of waste can degrade water quality, and lead to undesirable debris washing up on the beaches. The release of petroleum products from ships has caused beach tar to be common on beaches in the Region. It is illegal to release petroleum products from vessels in the ocean; however, increased enforcement is needed to protect beaches and natural resources in the Region.
SEA TURTLE NESTING

Another concern is activities that disturb or cause death or injury to sea turtles nesting on the beach. Lights from developed areas can deter nesting by adult female turtles, and disorient newly hatched sea turtles causing them to move landward, rather than toward the ocean. Vehicles or activities on the beach can disturb active nests or prevent sea turtles from coming ashore to lay eggs. Programs to protect sea turtles on the beach should be supported. Activities that cause harm to sea turtles nesting on the beach are illegal.

5. Protection of Estuarine Resources

FRESH WATER QUALITY AND QUANTITY

Foremost among the factors impacting the Region's marine resources is the quality and quantity of water entering the estuaries. Stormwater runoff has a major detrimental impact. The runoff contains heavy metals and hydrocarbons from roadways as well as fertilizers, herbicides, and pesticides from developed areas. Discharge from sewage treatment plants, leakage from faulty septic tanks, and raw sewage from boats have also added excess nutrients and pollutants to the estuaries. Some marinas and boatyard operations have caused a variety of toxic substances to enter the marine waters, including tin and copper. Efforts to retrofit problem stormwater and wastewater management systems should be supported, and programs to improve and restore water quality should be encouraged.

DREDGING AND EROSION

Marine dredging is utilized to create, improve and maintain channels and docking facilities, and to restore and maintain eroding beaches. Such projects must be carefully designed in terms of the source and deposition areas, the composition of the dredged material, and the construction technique to avoid both direct and indirect adverse environmental impacts. Poorly designed dredging activities in the ICW and increased use of the estuaries by boats have caused turbidity levels to rise; increased boating activity has also contributed to a high mortality rate in manatees. In addition, the elimination of littoral vegetation and mangroves from the shoreline has led to erosion and allowed polluted runoff to enter the estuaries directly from waterfront property. Seagrasses and mangroves have been removed by dredge and fill operations, and many of the existing mangrove communities have been isolated by impoundment for mosquito control. Efforts to protect and restore estuarine natural resources, such as opening mangrove impoundments through rotational impoundment management techniques, and the development of manatee protection plans should be supported.
SEAGRASSES

Dredging and indirect impacts to seagrasses are of concern because they have numerous functions and values. A net loss of seagrasses contributes to degradation of a variety of estuarine resources, including fish and wildlife. Impacts to seagrasses should be avoided. However, unavoidable impacts to seagrasses should be compensated for through mitigation. The mitigation of seagrasses cannot be accomplished through direct planting in areas where they are currently not growing. Perhaps the best method is to create an environment suitable for the natural colonization of seagrasses. Such a project could involve scraping down a spoil island or filling in a hole. The project would involve achieving the proper depth, benthic substrate, and be located at a site with adequate water quality. This type of project should be researched and coordinated by the local governments and state to insure success. Projects of this type should be considered as mitigation banks that could be constructed to compensate for impacts to seagrasses. Support should be provided for mitigation banking programs to compensate for the unavoidable elimination of seagrasses.

6. Protection of Waterbodies and Wetlands

AGRICULTURAL IMPACTS

The Region receives about 62 inches of rain a year, and most of it falls during the spring and summer months. The combination of concentrated periods of rainfall and level terrain produces flood conditions. Historically, agricultural expansion into wetlands has been a major threat to these systems. Land was drained and protected from flooding in order to support agriculture. Furthermore, some crops such as citrus required that the water table be dropped well below natural levels. These practices not only destroy the wetlands that are converted to agriculture, but lowering the water table negatively impacts the viability of wetlands on adjacent properties. However, current practices involve permitting from the Water Management Districts, which require the protection of wetlands and/or mitigation for wetland impacts.

URBAN DEVELOPMENT IMPACTS

Development near wetlands is a problem if the water table is lowered. The water table may be lowered for flood control, or it may be lowered as a result of excessive pumping from wells in the shallow aquifer. Lowering the water table often alters the hydroperiod of the wetlands and threatens their viability unless the drainage plan is specifically designed to manage the wetland systems. When wetland habitats are altered by development, there is a need for mitigation through the creation of new wetland habitats or through the restoration of the degraded or existing...
habitat. The establishment of mitigation banks in areas unaffected by development could be used to mitigate for these impacts.

EXOTIC SPECIES IMPACTS

Another threat to the natural wetland systems in the Region is the invasion of exotic tree species and other exotic aquatic plants (Appendix F). Brazilian pepper now dominates some isolated wetland habitats, and Melaleuca forests completely dominate both isolated wetlands and native sawgrass communities in portions of the Everglades. These species have routinely entered new areas following the construction of new roads and transmission lines. Research efforts designed to limit the spread of these and other exotic aquatic pest species need to be supported. Local governments and the private sector should have aggressive eradication programs in order to prevent the spread of exotic pest species. Exotic pest species should be removed from all public lands.

7. Protection of Upland Natural Communities and Ecosystems

DIRECT AND INDIRECT IMPACTS

Direct impacts to upland natural communities and ecosystems occur when the vegetation is removed and the soil is disturbed by land clearing activities. Indirect impacts occur when development activities result in fragmentation of historically contiguous tracts of natural systems. This prevents species dispersal and can result in reduced population levels. Other indirect impacts include preventing the normal occurrence of fire, alteration of drainage patterns, and changing the level of the watertable. These types of impacts have led to changes in species composition in natural communities. The invasion of exotic species which can dominate native species or degrade natural communities is another indirect result of nearby urbanization.

METHODS OF PROTECTION

One method of protecting natural communities and ecosystems is to encourage new development to occur in areas where natural communities have already been impacted. Infill and redevelopment projects in urban areas should be supported as a method of minimizing impacts to uplands. Additional benefits of this strategy are more fully discussed in other sections of the plan.

The main method to protect important natural communities and ecosystems has been through public purchase programs. All four counties and several municipalities in the Region have land acquisition programs designed to preserve natural communities. These programs are financed by bond referendums approved by the public. Matching funds provided...
through state programs (Conservation and Recreational Lands, Save Our Rivers, Florida Community Trust) help to extend the purchase power of these programs. Once environmentally sensitive lands are purchased, it is important to provide the necessary level of restoration and management to maintain the natural communities. Programs to acquire, restore, and manage natural communities should be encouraged and supported. Other methods of protection, such as purchasing development rights or establishing conservation easements should also be considered.

Another method of protecting natural communities and ecosystems is by recognizing and protecting wildlife corridors within the Region. Wildlife corridors are routes which enable animals to travel from one natural area to another to find mates, food, and shelter. Such corridors are essential for the continued survival and well-being of many animals, especially large, wide-ranging species such as the Florida panther, bobcat, fox, deer, otter, and other species. Wildlife corridors are also important for maintaining biodiversity in the Region's preserve areas.

The Loxahatchee Greenways Program is an ongoing effort sponsored by the Conservation Fund, 1000 Friends of Florida and the John D. and Catherine T. MacArthur Foundation to establish natural linkages between some of the major preserve areas in the Loxahatchee River watershed. This local program is part of a state-wide effort, the Florida Greenways Program, to create a network of green areas linking natural areas, parks, open spaces and communities throughout the state. Greenways can be extensive natural connections or narrow corridors through urban areas. Greenways designed primarily for wildlife need to be very wide and may include natural communities and agricultural development. Greenways designed primarily for recreational use may be very narrow in urban areas.

The Loxahatchee Greenways Program has recognized the need to establish three major greenways in the Region, including connections between: 1) Jonathan Dickinson State Park/Loxahatchee River and the DuPuis/Corbett preserves; 2) Loxahatchee Slough/West Palm Beach Water Catchment Area and the DuPuis/Corbett preserves; and 3) DuPuis/Corbett preserves and the Loxahatchee National Wildlife Refuge. The Loxahatchee Greenways Program also identified the need to establish two minor greenways between: 1) Jonathan Dickinson State Park and the South Fork of the St. Lucie River, and 2) Loxahatchee River and the Loxahatchee Slough, and a hydrologic connection between Pal-Mar and the Loxahatchee River. This system of greenways/wildlife corridors would allow animals to disperse and travel between all of the major preserve areas within the Region, and would facilitate the movement of animals within the Region to and from southern Florida.
One additional wildlife corridor important to the Region and state should connect the St. John's Marsh/Fort Drum Marsh preserve areas in Indian River County with the DuPuis/Corbett preserve areas in southern Martin and northern Palm Beach Counties. The establishment of this corridor, along with the major greenways noted above would allow wildlife to move from the Everglades in southern Florida to central Florida by passing around the east side of Lake Okeechobee through the Treasure Coast Region (Figure 6-4).

Wildlife corridors can be protected by maintaining the current land uses within the proposed system of greenways. Urbanization and road building within the corridors should be discouraged because it would inhibit the movement of wildlife between major preserve areas. The support of agricultural land uses and the protection of existing natural communities should be encouraged. Since the corridors are vast, protection through purchase programs is not realistic for the entire system of greenways. The use of conservation easements and other methods to protect natural communities on agricultural lands should be supported. Also, a framework of incentives to reward private land owners for the preservation and management of upland natural communities should be developed.

The protection of upland natural communities and ecosystems on lands undergoing urban development has been a successful strategy in the Region during the last decade. The protection of at least 25 percent of the natural upland communities on a development site has proven feasible on most, if not all, properties where this strategy has been implemented. As a result of careful site plan design, this strategy has not proved to be a hardship for developers. Upland preserve areas are viewed as an amenity. Methods such as clustering buildings and better community design that more efficiently use the land have been and should continue to be used to address this issue. As a minimum baseline measure for consistency with the SRPP, the Regional Planning Council will strive to achieve protection of 25 percent of upland natural communities in the evaluation of development plans. This strategy is only one of the initiatives that the Council is suggesting as a way to implement the goal of protecting natural systems. Council policy encourages that site plans be designed to maximize the protection of natural communities and go beyond the 25 percent level where appropriate.

For purposes of benefiting wildlife, it is generally best to protect natural communities in areas of larger size, greater diversity, and located in closer proximity to other natural systems. However, in urban areas, the protection of small parcels of natural communities on development sites can also be important to protecting endangered and threatened species, especially plants. For example, a significant population of the four-petal...
Figure 6-4
REGIONAL WILDLIFE CORRIDORS

NOTE: The corridors shown on this map are to be used for planning purposes only.
paw paw, an endangered plant which is endemic to the Treasure Coast Region, occurs on several acres of scrub preserved on a development site in Palm Beach County. Another example is that one of the Region's largest populations of hand fern, an endangered species, occurs in a 5-acre cabbage palm hammock on a development site in Indian River County.

The protection of small parcels of scrub outside the Region's major preserve areas is also very important for the continued survival of the Florida Scrub Jay, a federal threatened species. The largest population of Scrub Jays in the Region occurs in Jonathan Dickinson State Park. Outside of the park, small isolated parcels of scrub on private property act as wilderness "stepping stones," which allow Scrub Jays to disperse between other areas of suitable habitat. Dispersal is necessary for the jays to find mates and maintain the genetic diversity of the species. The long-term survival of the species in the Region is linked to the ability of individual jays being able to maintain a genetic tie, through dispersal and reproduction, with other Scrub Jay populations.

Although a large stand of scrub has been preserved in Jonathan Dickinson State Park, there are other important biological reasons for preservation of additional islands of this and other upland natural community types. The most critical concern involves the risk of maintaining only one or a few populations of endangered or potentially endangered species. It would not be prudent to attempt to conserve the entire population of any species at one location where disease or other catastrophes might lead to its elimination from the Region.

**PRESERVE DESIGN**

Preserve design is important to the function and value of the natural communities being protected (Cox et al. 1987). Where the option is available, upland preserve areas should be consolidated to form expanded upland buffers around wetland systems. Preserve areas should also be designed to maximize protection of existing populations of endangered or potentially endangered species. The edge-to-area ratio of a preserve area should be minimized to reduce undesirable intrusions and disturbance of the preserve area. Consolidation of the protected areas also helps to facilitate management of these systems.

**PRESERVE AREA MANAGEMENT**

Management of protected areas is important to maximizing benefits to wildlife and controlling exotic pest species. Historically, all natural communities in the Region were subjected to periodic wildfires resulting from lightning strikes. The plants and animals, including many endangered and potentially endangered species are adapted to fire-dependent communities. In the absence of natural fire or some form of
management, natural communities become overgrown and the habitat becomes suboptimal for many plants and animals. In many areas exotic pest species such as Australian pine, Brazilian pepper, and Melaleuca have become established and dominate native plant communities. Exotic pest species should be removed and the communities should be restored to their natural condition. The list of Florida’s most invasive species published by the Exotic Pest Plant Council should be used to identify species that need to be controlled (Appendix F).

Mechanical trimming of natural communities is sometimes an acceptable substitute for fire management. However, the use of prescribed burns by professionals has been very successful in managing some of the Region's smallest and largest preserves in urban and rural areas. The proper restoration and management of the Region's preserve areas should be encouraged.

8. Protection of Endangered and Potentially Endangered Species

LISTED SPECIES

The historic loss of upland and wetland natural communities has had a major impact on wildlife and plant populations. More than 95 species of animals and 100 species of plants in the Region have been listed as rare, threatened, or endangered by the FGFWFC, Florida Department of Agriculture and Consumer Services, Florida Council on Rare and Endangered Plants and Animals, or the USFWS (Appendix G). In a regional analysis, the FGFWFC identified numerous large and small patches of natural communities outside the existing preserve areas that warrant preservation to protect wildlife (Cox et al. 1994). In addition to listed species, there are hundreds of other more common species that depend on the remaining natural communities for survival.

SPECIES SURVEYS

A key to protecting listed species is to identify their presence on a development site early in the planning process. Ideally, surveys for endangered and potentially endangered animals and plants should be conducted prior to the development of site plans. If listed species are detected, their location on site and habitat requirements should be considered when the site plan is developed. Where appropriate, a preserve area should be established on the site to protect listed species. Survey procedures for listed species should be approved by the FGFWFC or other appropriate State or federal agencies prior to conducting the surveys.

HABITAT CONSERVATION PLANS
In certain situations conflicts exist between economic development and the protection of endangered and potentially endangered species on private lands. These conflicts generally arise when an individual species has habitat requirements that exceed the amount of habitat protection that a proposed development can offer due to site planning constraints. One method for resolving such conflicts is the development of habitat conservation plans (HCP), which are authorized under Section 10 of the federal Endangered Species Act. HCPs allow limited impacts to listed species in exchange for certain measures to protect and restore habitat. The plans vary in scope from involving a single parcel to covering large areas with many land owners and multiple governmental jurisdictions. The USFWS offers assistance in the development of HCPs and is responsible for approval of these plans. The development of HPCs should be encouraged within the Region where necessary to resolve species-development conflicts.

9. Protection and Sustainability of the Everglades Ecosystem

EXTENT OF THE EVERGLADES ECOSYSTEM

The Everglades ecosystem requires special attention in this plan because of its large size, economic and environmental importance, and the State’s commitment to protect this system as part of creating a Sustainable South Florida. The Everglades ecosystem is a massive watershed spreading over 9,000 square miles in southern Florida. This system includes a series of interconnected fresh water rivers, lakes, marshes, prairies, forests and estuaries that stretch from the Kissimmee River Basin, Lake Okeechobee, the Everglades, Big Cypress Swamp and the estuaries of Florida Bay and the Ten Thousand Islands. This hydrologically related system occurs in all or part of 16 counties. Within the Treasure Coast Region, portions of St. Lucie, Martin, and Palm Beach Counties are located within the Everglades ecosystem.

IMPORTANCE OF THE EVERGLADES ECOSYSTEM

Both the economy and natural resources of South Florida depend on the health of the Everglades ecosystem. Approximately 6 million residents and 17 million visitors yearly depend on this system for domestic, agricultural, and industrial water supply; as well as for income and recreation. Furthermore, thousands of plant and animal species, many of which are endangered and potentially endangered, depend on the clean, free-flowing water and expansive natural areas of the Everglades ecosystems for survival.

CHANGES TO THE EVERGLADES ECOSYSTEM
Historically, water flowed slowly through the Everglades ecosystem through the chain of lakes in the Kissimmee River Basin, into Lake Okeechobee, and then southward through the Everglades proper, and into Florida Bay. The Everglades once covered about 4 million acres and was characterized as a slowly moving sheet of freshwater drifting southward.

During the last 100 years, drainage of lakes, swamps, and marshes and alteration of the flow of water has resulted in the permanent loss of over half the original Everglades. The drainage was primarily to make the area more suitable for urban and agricultural development. Channelization of the Kissimmee River destroyed over 40,000 acres of wetlands, and diminished fish and wildlife habitat. Agricultural runoff and water diversion degraded Lake Okeechobee and the Everglades. Roads, canals, levees, and water control structures have disrupted water flow to the Everglades, Big Cypress Swamp, Florida Bay and Ten Thousand Islands estuaries. Within the Treasure Coast Region, much of what was originally Everglades wetlands south and southeast of Lake Okeechobee has been converted to the production of sugar cane.

**IMPACTS TO THE EVERGLADES ECOSYSTEM**

Florida Bay, which is the end receiver of water through the Everglades ecosystem is showing signs of catastrophic collapse by exhibiting reduced shrimp and lobster populations; mangrove, seagrass, and sponge die-offs; huge algal blooms; recent fish kills; hypersalinity; a deterioration of estuarine productivity; and a declining coral reef system.

The Everglades have experienced a 90 percent decrease in nesting populations of wading birds; wetland losses; organic soil subsidence, and exotic plant and animal invasions. The invasion of exotic plants is one of the most disruptive changes to the natural communities of the Everglades. A few of the worst invaders and the extent of their infestation in the Everglades ecosystem are: Brazilian pepper (703,504 acres), melaleuca (488,824 acres), Australian pine (373,723 acres), hydilla (75,500 acres) and climbing fern (25,781 acres). The reduced hydroperiods and interrupted flows to the Everglades has facilitated this invasion of exotic pest species, and has contributed to reduced wetland productivity.

Water quality problems are also of concern in the Everglades ecosystem. Excessive nutrients in Lake Okeechobee and the Everglades are well known as a major concern. Other water quality issues include the widespread contamination of plants and animals throughout the Everglades ecosystem with mercury from unknown sources, and toxicological contaminants including metals, organic compounds, and pesticides.

**GOVERNOR'S COMMISSION FOR A SUSTAINABLE SOUTH FLORIDA**
The detrimental effects noted above have been recognized by the State of Florida as being far reaching. They directly impact the tourist industry and the local/regional economy which depend on the health of the Everglades ecosystem. Estimates of direct and indirect economic impacts are in the billions of dollars. Because of the importance of this, Governor Lawton Chiles created the Governor’s Commission for a Sustainable South Florida in 1994. The Commission was created to assure that a healthy Everglades ecosystem can coexist and be mutually supportive of a sustainable South Florida economy. The key principles of sustainability established by the Commission include: 1) that the needs of the future must not be sacrificed to the demands of the present; 2) that humanity’s economic future is linked to the integrity of natural systems; and 3) that protecting the environment is impossible unless we improve the economic prospects of the Earth’s poorest people.

PROGRAMS TO ACHIEVE A SUSTAINABLE EVERGLADES ECOSYSTEM

The Governor’s Commission is currently drafting a report with recommendations on how to achieve a sustainable South Florida and Everglades ecosystem. Critical to any program related to this task is the recognition of the interconnections of the system which contribute to its complexity. The ecosystem from the Kissimmee River, Lake Okeechobee, Everglades, and Florida Bay are connected. Sustainability of the Everglades ecosystem can not be accomplished if each of these components of the system are managed independently in isolation from one another. For this reason, it is important for Treasure Coast Regional Planning Council to improve coordination between State and federal agencies, other Regional Planning Councils, and affected local governments concerning methods to achieve sustainability of the Everglades ecosystem. Support should also be provided for programs being implemented by the South Florida Water Management District and Florida Department of Environmental Protection to: 1) develop coordinated and integrated water resource plans; 2) improve understanding of environmental water needs; 3) minimize flooding impacts; 4) increase focus on pollution prevention; and 5) combat the spread of exotic species. The Regional Planning Council efforts to transform urban sprawl into quality development patterns, promote employment and business opportunities, improve quality of life, and improve scientific understanding and information coordination is necessary to attain a sustainable South Florida and Everglades ecosystem.
C. Significant Regional Resources and Facilities

1. Natural Resources of Regional Significance

A. Surface Waters

1. Atlantic Ocean

2. Inlets
   Sebastian Inlet
   Fort Pierce Inlet
   St. Lucie Inlet
   Jupiter Inlet
   Lake Worth Inlet
   South Lake Worth Inlet
   Boca Raton Inlet

3. Estuaries
   Sebastian River
   St. Lucie River
   Warner Creek
   Krueger Creek
   Loxahatchee River
   Lake Worth Creek
   Indian River Lagoon
   Lake Worth Lagoon
   Lake Wyman Lagoon
   Lake Boca Raton Lagoon

4. Rivers
   South Prong Sebastian River
   Blue Cypress Creek
   Padgett Branch
   Ft. Drum Creek
   St. Lucie River
   Krueger Creek
   Willoughby Creek
   Manatee Pocket
   Manatee Creek
   North Fork St. Lucie River
   Tenmile Creek
   Fivemile Creek
   Long Creek Fork
   Howard Creek
   Britt Creek
Blakeslee Creek  
Winters Creek  
Bessey Creek  
South Fork St. Lucie River  
Poppolton Creek  
Danforth Creek  
Mapps Creek  
Loxahatchee River  
North Fork Loxahatchee River  
Northwest Fork Loxahatchee River  
Kitching Creek  
Cypress Creek  
Southwest Fork Loxahatchee River  
Jones Creek  
Sims Creek  

5. Lakes  
Blue Cypress Lake  
Lake Okeechobee  
Mile Lake  
Lake Mangonia  
Clear Lake  
Lake Osborne  
Lake Ida  

6. Wetlands  
St. John’s Marsh  
Gum Slough  
Cypress Creek  
Savannas  
Allapattah Flats  
Pal-Mar  
Loxahatchee Slough  
Everglades  

B. Groundwater  

1. Surficial Aquifers  
Undifferentiated Aquifers  
Biscayne Aquifer  

2. Floridan Aquifer
C. Natural Communities

1. Uplands
   - Sandhill
   - Scrub
   - Xeric Hammock
   - Beach Dune
   - Coastal Strand
   - Maritime Hammock (Tropical Hammock)
   - Shell Mound
   - Dry Prairie
   - Mesic Flatwoods
   - Prairie Hammock
   - Scrubby Flatwoods

2. Wetlands
   - Hydric Hammock
   - Wet Flatwoods
   - Wet Prairie
   - Floodplain Swamp
   - Freshwater Tidal Swamp
   - Slough
   - Strand Swamp
   - Swale
   - Basin Marsh
   - Basin Swamp
   - Depression Marsh
   - Dome Swamp
   - Flatwoods/Prairie/Marsh Lake
   - Sandhill Upland Lake
   - Blackwater Stream

3. Marine and Estuarine
   - Consolidated Substrate (Hard Bottom)
   - Unconsolidated Substrate (Beach, Sand Bottom, Mud Flat)
   - Coral Reef
   - Mollusk Reef (Oyster Bed)
   - Worm Reef
   - Algal Bed
   - Seagrass Bed
   - Tidal Marsh
   - Tidal Swamp

D. Endangered and Potentially Endangered Species List is provided in Appendix G
2. **Regional Facilities**

A. **Special Districts**

**Indian River County**
- Fellsmere Water Management District
- Indian River Farms Water Control District
- Sebastian River Water Management District

**St. Lucie County**
- Fort Pierce Farms Water Control District
- North St. Lucie River Water Control District

**Martin County**
- Hobe-St. Lucie Conservation District
- Indiantown Drainage District
- Troup-Indiantown Drainage District

**Palm Beach County**
- Acme Improvement District
- East Beach Water Control District
- East Shore Drainage District
- Gladeview Drainage District
- Highland Glades Drainage District
- Indian Trail Water Control District
- Lake Worth Drainage District
- Loxahatchee Groves Water Control District
- Northern Palm Beach County Improvement District
- Northern Palm Beach Heights Water Control District
- Pahokee Water Control District
- Pal Mar Water Control District
- Pelican Lake Water Control District
- Pine Tree Water Control District
- Ritta Drainage District
- Seminole Water Control District
- Shawano Drainage District
- South Florida Conservancy Drainage District
- South Indian River Water Control District
- South Shore Drainage District
B. Major Canals

Indian River County
- North Relief Canal
- Lateral G
- Main Canal
- South Canal
- Lateral J

St. Lucie County
- Belcher Canal (C-25)
- Diversion Canal (C-24)
- Moore’s Creek

Martin County
- County Line Canal (C-23)
- St. Lucie Canal (C-44)

Palm Beach County
- Hungryland Slough Canal (C-18)
- Earman River (C-17)
- West Palm Beach Canal (C-51)
- Boynton Canal (C-16)
- Delray Canal (C-15)
- Hillsboro Canal
- Rim Canal
- L-8 Canal
- West Palm Beach Water Supply Canal (M Canal)
- Ocean Canal
- Bolles Canal
- North New River Canal
- Miami Canal

C. Protected Lands

Indian River County
- Blue Cypress Marsh Conservation Area
- Blue Cypress Water Management Area
- Fort Drum Marsh Conservation Area
- Hobart Park
- Oslo Riverfront Conservation Area
- Pelican Island National Wildlife Refuge
- Sebastian Inlet State Recreation Area
- St. John’s Water Conservation Area
- St. John’s Water Control District Reservoir
St. Lucie County
  Avalon Beach
  Dollman Beach
  Fort Pierce Inlet State Rec. Area
  Green Turtle Beach
  Jack Island State Preserve
  North Fork St. Lucie River
  Savannas Recreation Area
  Savannas State Reserve
  Walton Rocks

Martin County
  Blowing Rocks Preserve
  Dupuis Reserve
  FPL Preserve (including Barley-Barber Swamp)
  Hobe Sound National Wildlife Refuge
  Jonathan Dickinson State Park
  Loop Road Audubon Preserve
  Pal-Mar
  Pecks Lake Park
  Rocky Point Hammock
  Savannas State Reserve
  Seabranch Tract
  South Fork St. Lucie River Preserve
  St. Lucie Inlet State Preserve

Palm Beach County
  Brown's Farm Wildlife Management Area
  Carlin Park
  Cholee/Palm Beach Pines Park
  Corbett Wildlife Management Area
  Dupuis Reserve
  Fox Property Preserve
  Holey Land Wildlife Management Area
  Ibis Preserve
  Indian Mound Park
  John D. MacArthur Park
  Jupiter Ridge Tract
  Juno Hills Scrub
  Loxahatchee National Wildlife Refuge
  Loxahatchee Slough
  Loxahatchee Wild and Scenic River Preserve
  North Palm Beach County Airport Preserve
  Okeeheelee County Park
  Old Leon Moss Ranch
  Palm Beach County Airport Preserve
PGA Preserve
Pine Jog Environmental Science Center
Pratt & Whitney Preserve
Riverbend Park
Royal Palm Beach Pines
Rotenberger Wildlife Management Area
Seacrest Scrub
Stonewall Estates Water Retention Area
Strazzulla
Water Conservation Area 2A
West Palm Beach Water Catchment Area

D. State Aquatic Preserves
Malabar to Vero Beach Aquatic Preserve
Vero Beach to Fort Pierce Aquatic Preserve
Jensen Beach to Jupiter Inlet Aquatic Preserve
North Fork - St. Lucie River Aquatic Preserve
Loxahatchee River - Lake Worth Creek Aquatic Preserve
D. Goals, Strategies and Policies

Regional Goal 6.1

A sustainable countryside.

Indicator:

Change in the number of natural systems protected.

Number of greenways established.

Strategy 6.1.1: Preserve and manage natural systems as a network of connected nature preserves and promote the establishment of greenway systems in the Region.

Policy 6.1.1.1: Develop a framework of incentives and programs for the preservation of environmentally significant natural systems. The incentives and programs should include, but not be limited to the following: tax abatement or incentives, conservation easements, transfer of development rights, purchase of development rights, and land acquisition.

Policy 6.1.1.2: Manage, restore, and reestablish natural systems.

Policy 6.1.1.3: Support the establishment of greenway systems to provide opportunities for recreational trails connecting public conservation lands and to provide public access where needed.

Policy 6.1.1.4: Support partnerships between state agencies, local governments, and private corporations to facilitate the development of greenways.

Strategy 6.1.2: Only patterns of development which are compatible with the protection and maintenance of natural systems and nature preserves should be permitted in the countryside.

Policy 6.1.2.1: Support agricultural practices and development that reduce impacts to the function and value of natural systems.

Policy 6.1.2.2: Support development of compact rural villages which do not negatively alter the function and value of natural systems, or interfere with standard agricultural practices.

Policy 6.1.2.3: Require that an urban design study be prepared to evaluate development proposals in the countryside.
Strategy 6.1.3: Support the Florida Department of Environmental Protection ecosystem management initiative.

Policy 6.1.3.1: Encourage participation by all levels of government, including federal, state, regional, and local authorities, as well as affected citizens in Ecosystem Management programs.

Policy 6.1.3.2: Refine maps of Natural Resources of Regional Significance as better information becomes available.

Policy 6.1.3.3: Encourage periodic updating of the Florida Game and Fresh Water Fish Commission Land Cover Map through the use of more recent landsat satellite imagery.

Policy 6.1.3.4: Encourage place-based ecosystem management, which is based on stewardship and a strong sense of place, ownership in, and responsibility for Florida’s lands and resources.

Policy 6.1.3.5: Encourage increased environmental information sharing to inform the public, other government personnel, and individual property owners on basic biological principles and on the benefits of protecting natural systems.

Regional Goal 6.2

A regional water supply managed to provide for all recognized needs on a sustainable basis.

Indicator:

Change in the number of wastewater treatment facilities making reclaimed wastewater available.

Change in the number of new developments using reclaimed wastewater.

Change in the number of new developments using xeriscape landscaping.

Change in the number of water conservation plans adopted.

Number of new regional attenuation facilities approved.

Number of new cases of saltwater intrusion in public wellfields.

Strategy 6.2.1: Develop and implement water conservation programs.
Policy 6.2.1.1: Use reclaimed wastewater for irrigation and other suitable purposes when such use is determined to be feasible.

Policy 6.2.1.2: Utilize xeriscape principles in landscaping to reduce the need for irrigation.

Policy 6.2.1.3: Protect natural communities on development sites as a method to reduce the need for irrigation.

Policy 6.2.1.4: In order to protect and conserve the water resources of the Region and southern Florida to ensure the availability for future generations:

1. All landscaping material used on the primary dune system should be composed of native plants adapted to soil and climatic conditions occurring on-site. In all other locations the majority of landscaped areas should be composed of native or drought tolerant plants adapted to soil and climatic conditions occurring on-site.

2. The lowest acceptable quality water should be used to meet nonpotable water demands.

3. Potable water rates should be structured to encourage conservation.

4. All new and expanding wastewater treatment facilities should make reclaimed wastewater available for use in irrigation. Where possible, all new development should rely on wastewater reuse for irrigation.

5. Use of water saving devices, irrigation systems, and plumbing fixtures should be required to the maximum extent justified. Where appropriate, existing systems should be retrofitted to make use of the most cost efficient water saving devices.

6. Leak detection programs should be developed and implemented.

Strategy 6.2.2: Support the development of Water Supply Plans or Needs and Sources Studies by the Water Management Districts for regional water resource management and long-range planning.

Policy 6.2.2.1: Water Supply Plan and Needs and Sources Studies should indicate that the objective with the highest priority is to protect and enhance the environment including federal, State, and locally identified natural resource areas. Sufficient water should be reserved to meet the essential demands of fish and wildlife and the ecological systems that support them. Provision of water to meet the needs of demand sectors that can reasonably
be served by reverse osmosis, or other technology (e.g., domestic and municipal potable water needs), should not occur to the extent that other demand sectors (i.e., natural systems, existing commercial agriculture, and other permitted uses) cannot be provided with an adequate water supply on a sustainable basis.

**Policy 6.2.2.2:** Water supply plans should provide for the equitable, orderly, cost effective and economical development of water supplies to meet the agricultural, urban, and industrial needs of the Region.

**Policy 6.2.2.3:** Water use allocation and management plans for emergency drought and flood situations should avoid irreversible impact on ecological systems and minimize long term adverse impacts on all sectors.

**Policy 6.2.2.4:** In order to improve resource management through the integration of Regional and local water supply plans and land use planning:

1. Water system planning and development programs should be consistent with water availability, use, allocation, and management plans and coordinated with the Water Management Districts.

2. New and existing structures should be connected to public, regional, or municipal water and wastewater systems when such systems become available.

3. Proliferation of small private package plants and individual water supply and septic treatment systems should be discouraged.

4. Methods should be developed to provide better monitoring and accounting of the volume of water flowing from public and private water supply systems.

5. Linkages between alternative water suppliers and users should be facilitated.

**Policy 6.2.2.5:** No activity or development should be permitted which would adversely affect the quantity or quality of recharge entering the Region’s aquifers. Consistent with the intent of this policy:

1. Important recharge areas should be identified and inappropriate development should be discouraged in these areas.

2. Storage and recharge potential of properties should be maintained and where possible enhanced.
3. Post development runoff volumes should not exceed predevelopment runoff volumes consistent with current SFWMD and SJRWM.

4. To the maximum extent consistent with the requirements of flood control, stormwater management systems should be designed to maximize retention capability.

5. Stormwater management systems should be designed to maximize the quality of water being recharged as well as that being discharged off-site.

**Policy 6.2.2.6:** The potential for regional attenuation facilities for increasing storage of water should be investigated, and the development of these facilities should be supported, where appropriate.

**Strategy 6.2.3:** Conserve, protect and enhance the Regions potable water supply.

*Policy 6.2.3.1:* Support research and development of reverse osmosis and desalination facilities to increase the water supply.

*Policy 6.2.3.2:* Support research and development of aquifer storage and recovery systems to increase storage of water and reduce environmental impacts.

*Policy 6.2.3.4:* Prevent the overutilization of existing wellfields.

*Policy 6.2.3.5:* An activity or development that would result in the degradation or over utilization of potable water resources should not be permitted.

*Policy 6.2.3.6:* Present and future potable water wellfield locations should be identified and protected through development and implementation of wellfield protection programs. These programs, based on scientifically delineated wellfield protection areas, should assure that water resources are not negatively impacted by development, excessive drawdown, or saltwater contamination.
Regional Goal 6.3

Protection of water quality and quantity.

Indicator:

Change in the number of water bodies meeting state water quality standards.

Number of substandard stormwater management systems retrofitted.

Number of new regional attenuation facilities.

Change in the number of contaminated wellfields.

Strategy 6.3.1: Carry out activities and implement regulations which protect water quality and maintain water quantity in the Region.

Policy 6.3.1.1: All new, reconstructed or substantially expanded storm and surface water management systems should be designed and constructed to meet state water quality standards. Where feasible, retention is the preferred method for treatment of stormwater, recharging the aquifer, and protecting the Region’s estuaries.

Policy 6.3.1.2: A vegetated and functional littoral zone should be established as part of new surface water management systems where possible. Prior to construction of the surface water management system for any phase of a project, the developer should prepare a design and management plan for the wetland/littoral zone that will be established as part of these systems. The littoral zone established should consist entirely of native vegetation and should be maintained permanently as part of the water management system.

Policy 6.3.1.3: The negative impacts of existing land use activities on surface water and groundwater quality and quantity should be minimized through enforcement or by retrofitting to provide the most appropriate water quality management techniques.

Policy 6.3.1.4: Retrofit substandard stormwater management systems.

Policy 6.3.1.5: Develop regional attenuation facilities for urban and agricultural stormwater.
Policy 6.3.1.6: Design drainage systems that maintain the natural discharge pattern of stormwater from a site.

Policy 6.3.1.7: Support land acquisition and other programs to acquire, restore and manage environmentally sensitive natural communities.

Policy 6.3.1.8: Support increased coordination between federal, State, and local governments in implementing the National Pollution Discharge Elimination System program and developing other methods to minimize or eliminate water pollution.

Strategy 6.3.2: Protect wellfields and recharge areas from contamination.

Policy 6.3.2.1: Existing and future potable water wells and wellfields should be protected from contamination by regulated materials (i.e., hazardous and toxic materials). Protection should consist of a program, including an ordinance, which establishes requirements for the use, handling, storage, production, and disposal of hazardous and toxic materials. Wellfield protection programs, including appropriate ordinances, should be developed and implemented which address, as a minimum, condemnation or elimination of existing inappropriate land uses, buffer zones, prohibitions, structural containment safeguards, monitoring, emergency reporting and clean up, personnel training, inventory, and financial responsibility.

Policy 6.3.2.2: New potable water wells and wellfields should be located in areas where no regulated materials (e.g., hazardous or toxic materials) will be used, handled, stored, or produced within the projected zones of influence of such wells or wellfields. At the time future wellfield locations are identified, establishment of incompatible land uses within the zones of influence of such wells or wellfields should be prohibited. This policy should be addressed in the sections of local plans dealing with potable water supply, infrastructure, future land use, and conservation.

Policy 6.3.2.3: No activity should be permitted which would increase further saltwater intrusion potential. Wellfield monitoring programs should be developed for areas where withdrawals could result in increased saltwater intrusion.

Policy 6.3.2.4: Support implementation of alternative water supplies and conservation strategies for coastal areas experiencing saltwater intrusion.

Strategy 6.3.3: Develop central sewer systems and regional wastewater treatment facilities.
Policy 6.3.3.1: Discourage the use of septic tanks and small wastewater facilities in higher density urban areas, or in other areas susceptible to groundwater contamination.

---

Regional Goal 6.4

Protection of beachfront and environmentally sensitive coastal and marine resources.

Indicator:

Number of primary dune systems restored.

Number of protective measures adopted to protect beach and dune resources.

Number of beach erosion control measures implemented.

Strategy 6.4.1: Prohibit activities that result in beach erosion or damage to the primary dune system.

Policy 6.4.1.1: Prevent interruption of the natural transport of sand in near shore currents.

Policy 6.4.1.2: Restore the primary dune system where it is damaged, and discourage activities which would destabilize the system.

Policy 6.4.1.3: Future development on barrier islands should be limited to those land uses which are resource dependent or compatible with the physical and environmental characteristics of barrier islands, or those uses which can occur without degradation of important environmental resources or interference with public access to beaches.

Future development of barrier islands should not occur where:

1. development of fixed structures (e.g., homes, condominiums, hotels, swimming pools) could reasonably create a future demand for beach renourishment and erosion control projects; or

2. evacuation of the island in case of emergency could not occur within established time periods; or

3. development would limit public access opportunities to beaches or other publicly owned resources; or
4. provision of necessary public services (e.g., centralized water and wastewater; solid waste removal; transportation systems; etc.) would not be available to adequately serve the development concurrent with need; or

5. provision of necessary public services to private development could not occur without increasing costs to mainland residents.

**Policy 6.4.1.4:** Protective measures should be established landward of primary dune systems to protect the integrity of dunes, native dune vegetation, and sea turtle nesting activities.

**Policy 6.4.1.5:** Erosion control measures should be limited to those that do not interfere with normal littoral processes, sea turtle nesting and hatching activities, or negatively impact coastal natural resources. Damaged erosion control structures may be replaced only with structures which are compatible with this intent and identified as necessary to protect existing, previously approved structures. All unnecessary man-made structures within the beach dune area that negatively impact natural coastal processes and resources should be removed. Plans should be developed and implemented for removal of such structures within an adopted time frame.

**Policy 6.4.1.6:** Native vegetation should be restored on dune systems where it has been impacted by development activities or displaced by exotic species.

**Policy 6.4.1.7:** Inlet Districts and other government agencies concerned with inlet maintenance should implement programs which provide for long-term beach stability through facilitation of normal littoral processes. State and federal agencies and local governments should coordinate and assist in the implementation of these programs.

**Policy 6.4.1.8:** Discourage hardening of the natural shoreline.

**Strategy 6.4.2:** Protect beach, coastal and marine resources for wildlife and recreational values.

**Policy 6.4.2.1:** Protect coral and worm reef communities.

**Policy 6.4.2.2:** Decrease the disposal of trash and the release of petroleum products in the ocean.

**Policy 6.4.2.3:** Support programs to protect sea turtles nesting on the Region's beaches.
Policy 6.4.2.4: Efforts to insure the designation of the St. Lucie Nearshore Reefs, the Vero Beach Nearshore Reefs, and the Oculina Reefs as marine sanctuaries in accordance with the Federal Marine Sanctuary Program and, where appropriate, efforts to designate other regional resources as Aquatic Preserves and Outstanding Florida Waters should be encouraged.

Policy 6.4.2.5: Plans for acquisition or provision of sufficient beach access, parking, and support facilities should be developed and implemented to meet future beach recreational needs.

Policy 6.4.2.6: School boards should include within their curricula courses or course work which deal with the subject of coastal and marine resources.

Regional Goal 6.5

Protection of estuarine resources.

Indicator:

Change in the number of acres of seagrass beds in the Region’s estuaries.

Change in the number of acres of managed mangrove wetlands that are reconnected to the Region’s estuaries.

Number of new manatee protection plans adopted.

Strategy 6.5.1: Maintain and enhance the functions and values of the Region’s estuaries.

Policy 6.5.1.1: Improve and restore the Indian River Lagoon, Lake Worth Lagoon, and St. Lucie and Loxahatchee River estuary systems.

Policy 6.5.1.2: Shoreline alteration and construction which degrades existing estuarine productivity should be prohibited unless it provides permitted access to marine resources, or abates serious and significant erosion.

Policy 6.5.1.3: A natural vegetated buffer adjacent to the Indian River Lagoon system and its major tributaries, and regionally significant lakes and rivers should be required. Except for public and private access points, native vegetation should be maintained for a maximum practical distance back from commonly recognized waterway banks.
**Policy 6.5.1.4:** All mosquito impoundments should be modified to provide the multiple functions of marine fisheries habitat, water quality enhancement, tidal circulation, and adequate mosquito control.

**Policy 6.5.1.5:** Existing spoil islands should be retained in public ownership and modified to serve as green areas, bird roosting, nesting, and feeding areas and, water-oriented recreation areas when such activities do not disrupt existing sensitive ecosystems. The creation of new spoil islands is not recommended. Spoil disposal options should be encouraged which reuse material for beneficial purposes and regenerate capacity in spoil disposal areas. In the event new spoil islands are created, they should be designed to serve recreation, wildlife, and other public use. Revegetation efforts on all spoil islands should utilize native vegetation adapted to existing soil, and climatic conditions.

**Policy 6.5.1.6:** Discourage the discharge of wastewater effluent into the estuaries, and support the development of sewer systems and regional wastewater treatment facilities in areas adjacent to estuaries.

**Policy 6.5.1.7:** Discourage activities that alter natural communities in and directly adjacent to the estuaries.

**Policy 6.5.1.8:** All projects should avoid the degradation of seagrasses where possible. Mitigation banking programs should be created to compensate for situations where the elimination of seagrasses is unavoidable.

**Policy 6.5.1.9:** Develop manatee protection plans and programs for all communities adjacent to the coastal waterway.

**Policy 6.5.1.10:** Retrofit substandard stormwater management systems.

**Policy 6.5.1.11:** Develop regional attenuation facilities for urban and agricultural stormwater.

**Policy 6.5.1.12:** Support efforts to reduce impacts of fresh water releases from Lake Okeechobee through the St. Lucie Canal on the St. Lucie River Estuary, and Indian River Lagoon.

**Policy 6.5.1.13:** Support the implementation of the National Estuary Program’s Indian River Lagoon Comprehensive Conservation and Management Plan through coordination with local governments to develop consistency in their Comprehensive Plan Elements that directly and indirectly affect the ecosystem of the Lagoon.
Regional Goal 6.6

Protection of wetlands and deepwater habitats.

Indicator:

Change in the number of wetlands eliminated.

Change in the number of wetlands protected.

Number of new mitigation banks established.

Strategy 6.6.1: Maintain the functions and values provided by wetlands and deepwater habitats.

Policy 6.6.1.1: No activity should be allowed that results in the alteration, degradation, or destruction of wetlands and deepwater habitats, except when:

1. Such an activity is necessary to prevent or eliminate a public hazard;

2. Such an activity would provide direct public benefits which would exceed those lost to the public as a result of habitat alteration, degradation, or destruction;

3. Such an activity is proposed for habitats in which the functions and values currently provided are significantly less than those typically associated with such habitats and cannot be reasonably restored;

4. Such an activity is water dependent or, due to the unique geometry of the site, minimal impact is the unavoidable consequence of development for uses which are appropriate given site characteristics.

Policy 6.6.1.2: Whenever any wetland or deepwater habitat is degraded or destroyed, mitigation should be provided through the creation of new wetland and deepwater habitat, through the restoration of degraded habitat, or through the enhancement of functions and values provided by existing habitats.

Policy 6.6.1.3: A buffer zone of native upland edge vegetation should be provided and maintained around wetland and deepwater habitats which are constructed or preserved on new development sites. The buffer zone may consist of preserved or planted vegetation but should include canopy,
understory, and ground cover of native species only. The edge habitat should begin at the upland limit of any wetland or deepwater habitat.

**Policy 6.6.1.4:** To the maximum extent consistent with protection of functions and values, natural systems should be utilized in lieu of structural alternatives (e.g., channelization, construction of discharge canals, etc.). In water management systems where use of canals is necessary, any modifications to, or construction of, canals should take into consideration water and habitat quality enhancement features such as planted littoral zones on shallow shelves, other appropriate Best Management Practices, and immediate stabilization of any bare ground adjacent to the canal with vegetation.

**Policy 6.6.1.5:** All affected local governments in the region should cooperate and participate in ongoing efforts to improve or restore Lake Okeechobee, the Everglades, Water Conservation Areas, Holey Land Wildlife Management Area, Loxahatchee Slough, St. John's Marsh, Indian River Lagoon, Lake Worth Lagoon, and the St. Lucie and Loxahatchee River systems.

**Policy 6.6.1.6:** Implement wetland policy that assures no net loss and fosters a net gain of wetland and deepwater habitat functions and values.

**Policy 6.6.1.7:** Retrofit substandard stormwater management systems.

**Policy 6.6.1.8:** Establish regional mitigation banks to protect wetland systems.

**Policy 6.6.1.9:** Use of off-road recreational vehicles should be limited to those areas designated for such use and should be strictly regulated to assure that adverse environmental impacts do not occur.

**Policy 6.6.1.10:** Support measures to eliminate and control the spread of invasive exotic aquatic weeds in the Regions canals, waterbodies, and natural wetland systems.
Regional Goal 6.7

Protection of upland natural communities and ecosystems.

Indicator:

Change in the number of parcels protected by acquisition, conservation easement, or other method.

Change in the number of acres of upland natural communities eliminated.

Change in the number of acres of upland natural communities protected.

Number of wildlife corridors established.

Strategy 6.7.1: Preserve and manage upland natural communities in order to maintain viable populations of all native plant and animal species, and representative stands of each habitat type.

Policy 6.7.1.1: A sufficient number of preserve areas of appropriate size and location should be established throughout the Region to guarantee protection of all native plant and animal populations. To the maximum extent feasible, these preserve areas should be established consistent with the location of "wilderness islands" and major wildlife corridors. Specific action should be taken to acquire lands of the Pal Mar Drainage District.

Policy 6.7.1.2: Development plans should be designed to maximize the amount of protected habitat. Protected natural communities and ecosystems should be preserved in viable condition with intact canopy, understory, and ground cover. Where possible, preserve areas should be designed to interconnect with other natural areas that have been set aside for preservation. A restoration and management plan for the protected areas should be developed. Upon review, or request for review, the regional planning council will make a recommendation concerning the appropriateness of: 1) the amount of habitat protected, 2) the design and location of the preserve area, and 3) the restoration and management plan for the protected natural communities.

As a minimum baseline measure for consistency with the SRPP, the Regional Planning Council will strive to achieve protection of 25 percent of upland natural communities in the evaluation of development plans. This is only one of the initiatives which should be undertaken to implement the goal. Council supports the maximum protection of natural communities,
and recommends that more than 25 percent of the upland habitat be preserved where appropriate.

**Policy 6.7.1.3:** Prior to making any land use or policy decision that could have a direct adverse ecological or environmental impact, governmental decision makers should be provided a written assessment of such impacts prepared by a qualified ecologist.

**Policy 6.7.1.4:** All nuisance and invasive exotic vegetation listed by the Florida Exotic Pest Plant Council should be removed and where appropriate replaced with plant species adapted to existing soil and climatic conditions. Removal should be in such a manner that avoids seed dispersal by any such species. State and federal agencies and local governments should coordinate and assist in the removal and replacement of nuisance exotic pest species.

**Policy 6.7.1.5:** Other methods of land conservation, besides outright purchase, should be used to protect natural communities and ecosystems, such as, conservation easements, deed restrictions, purchase of development rights, tax abatement, transfer of development rights or other flexible methods of land development transfer that will direct development from nonsuitable lands to properties most suitable for active use.

**Policy 6.7.1.6:** New land development in and adjacent to parks, recreation, and conservation areas should not impact public lands and should be compatible with the maintenance of existing wildlife populations and natural systems within these areas.

**Policy 6.7.1.7:** Support redevelopment, infill and preferred forms and patterns of development to avoid impacting natural communities and ecosystems.

**Policy 6.7.1.8:** Support land acquisition programs to acquire, restore, and manage environmentally sensitive natural communities and ecosystems.

**Policy 6.7.1.9:** Preserve areas should be designed to protect integrated systems of uplands and wetlands.

**Policy 6.7.1.10:** Develop and implement management plans for protected areas.

**Policy 6.7.1.11:** Support the use of prescribed burning in the management of natural systems.

**Strategy 6.7.2:** Establish Regional Wildlife Corridors connecting existing preserve areas.
Policy 6.7.2.1: Land uses should not be permitted that would prevent the movement of wildlife in regional wildlife corridors. Existing agriculture and conservation are the preferred land uses within the corridors. Limited urban development may be acceptable within the corridors providing it does not interfere with corridor function.

Policy 6.7.2.2: Treasure Coast Regional Planning Council and affected local governments should support the establishment of conservation easements and the acquisition of parcels within the Regional Wildlife Corridors.

Policy 6.7.2.3: Treasure Coast Regional Planning Council and all affected local governments should coordinate with the Florida Department of Transportation concerning the construction and modification of roads and the placement of bridges and culverts to facilitate the movement of animals within the Regional Wildlife Corridors.

Policy 6.7.2.4: Treasure Coast Regional Planning Council should coordinate with those counties and Regional Planning Councils whose boundaries lie adjacent to the Treasure Coast Region, in the planning of interregional connections with the Regional Wildlife Corridors.

Regional Goal 6.8

Protection of endangered and potentially endangered species.

Indicator:

Change in the number of endangered and potentially endangered species identified in the Region.

Number of new habitat conservation plans established.

Strategy 6.8.1: Preserve areas should be designed and established to protect endangered and potentially endangered species.

Policy 6.8.1.1: Sites proposed for land clearing activities within the known range of endangered or threatened species or where such species are expected to occur based upon habitat suitability and species ranges should be surveyed by qualified ecologists prior to approval of or commencement of such activities to determine whether or not endangered or threatened plant and animal populations occur.
Policy 6.8.1.2: All Endangered and Potentially Endangered plant and animal populations should be protected and all habitat of significant value to existing populations of endangered and threatened species should be preserved and protected.

Policy 6.8.1.3: Support the development of habitat conservation plans for species with habitat protection needs that frequently interfere economic development interests.

Regional Goal 6.9

Protection and sustainability of the Everglades Ecosystem.

Indicator:

Number of water quality parameters meeting State water quality standards.

Number of pollutants and pollutant levels detected in the Everglades.

Change in the number of acres of the Everglades dominated by exotic species.

Change in the population levels of wading birds breeding in the Everglades.

Strategy 6.9.1: Manage and restore the Everglades ecosystem to ensure a sustainable future.

Policy 6.9.1.1: Support the development of coordinated and integrated water resource plans for the Everglades ecosystem.

Policy 6.9.1.2: Support research and scientific studies to improve understanding of environmental water needs of the Everglades ecosystem.

Policy 6.9.1.3: Support programs that minimize flooding impacts to the Everglades ecosystem.

Policy 6.9.1.4: Support programs that prevent pollution of the Everglades ecosystem.

Policy 6.9.1.5: Support programs that combat the spread of exotic species in the Everglades ecosystem.

Policy 6.9.1.6: Encourage the acquisition of private lands that will allow restoration of the Everglades ecosystem.
Strategy 6.9.2: Improve coordination between State and federal agencies, Regional Planning Councils, and local governments to ensure the sustainability of the Everglades ecosystem.

Policy 6.9.2.1: Treasure Coast Regional Planning Council should regularly consult with State and federal agencies, other Regional Planning Councils, and affected local governments to discuss issues related to the sustainability of the Everglades Ecosystem.

Policy 6.9.2.2: Treasure Coast Regional Planning Council should regularly attend workshops to keep informed of the latest information concerning sustainability of the Everglades ecosystem.

Policy 6.9.2.3: Treasure Coast Regional Planning Council should regularly disseminate new information concerning the sustainability of the Everglades ecosystem to all affected local governments.
7. Regional Transportation

A. Trends and Conditions

1. Transportation and its Relationship to the Overall Regional System

The Region's transportation system should be one that integrates alternate modes of travel into one balanced system that supports community goals, enhances urban life, increases mobility and provides for the safe and efficient movement of goods and people.

Any approach to achieve these multiple objectives must include an analysis of the way we use our land, the manner in which we choose to travel, and the institutional and financial arrangements we have developed to meet our travel needs. In short, these objectives can only be achieved through a better integration of transportation and land use planning.

The relationship between land use and transportation is reciprocal; the land uses within a community create a demand for transportation facilities and transportation services are catalysts for land development (DCA 1995). How well we integrate regional transportation and land use planning will profoundly affect our ability to achieve a variety of regional goals. In other words, successful transportation planning requires paying careful attention to issues other than transportation and understanding the complex interrelationships between them all, especially land use.

![Diagram](image)

**Figure 7-1**
TRANSPORTATION AND ITS RELATIONSHIP TO THE OVERALL REGIONAL SYSTEM
2. **Summary of the Transportation Problem and its Impact**

The Treasure Coast Region is confronted by a transportation problem that seems destined to become more aggravated in the years ahead. The problem manifests itself in several ways and has numerous side-effects which need to be addressed on several fronts.

Growth of population and expansion of the urban area, combined with higher incomes and increasing economic growth, are continually increasing the volume of passenger and freight traffic. At the same time, shifts from rail to road and from public to private transportation have added tremendous burdens to highway and street facilities.

**INFRASTRUCTURE BACKLOG**

The existing transportation network is designed for the automobile. The Region's growth and development patterns have created demands for highways that have exceeded government's ability to meet expanded capacity requirements (FDOT, 1995). With the demand for highways greater than supply, an accumulation of unmet highway expansion needs (backlog) has developed. In terms of dollars, the most recent assessment of Florida's backlogged transportation needs places the total funding short fall at $14.5 billion for the 1990-95 period (Ewing, 1993).

**INCREASED AUTO-DEPENDENCY**

The Region's rapid growth is the primary reason for the backlog. Existing low-density, scattered development patterns in the Region aggravate the problem further by increasing auto-dependency, vehicle trips, trip lengths, vehicle miles traveled, and ultimately, the demand for more and larger highways. Population movement away from urban coastal areas frequently necessitates longer driving distances to jobs and shopping resulting in increased dependency on the automobile. This low-density pattern of development is also extremely difficult and expensive to serve with public transportation.

**TRAFFIC CONGESTION**

Traffic congestion is perhaps the most conspicuous side effect of the Region's robust but unmanaged suburban growth. Portions of the Region have experienced low-density, suburban growth to a point where the associated traffic congestion threatens to strangle the very transportation system that made such growth possible. This problem is particularly acute in suburbanizing Palm Beach County. While the level of congestion in the three northern counties of the Region is currently less problematic, increasing amounts of transportation dollars are being expended every year to address congestion problems. Congestion is anticipated to increase within the US 1 and A1A corridors and on major arterials such as CR 712, SR 70, SR 76, SR 60, and Port St. Lucie and Prima Vista Boulevard as suburanization of the three northern counties continues.
The greatest transportation difficulties are experienced while commuting between home and work. The separation of housing from employment centers together with the rapid expansion of the Region's urban area have created a pendulum movement between home and work that accounts for a larger volume of traffic than any other type of weekday travel (Kulash, 1990).

Traffic congestion imposes dramatic personal inconveniences, economic and fiscal inefficiencies in the use of roadways and barriers to economic development. It also results in harmful environmental degradation and wasteful use of valuable energy resources, as well as delays, lost time, and high costs that penalize business, the consumer, families, and communities.

The price associated with congestion and delays can be measured by lost time and added costs. For example, in 1990, the Texas Transportation Institute conducted a study entitled "Estimates of Urban Roadway Congestion". This study estimated that dollar costs associated with recurring and incidental roadway delays and its associated fuel costs was $970 million in the Miami urban area and $300 million in the Ft. Lauderdale urban area annually. Airport and seaport delays are also associated with significant negative economic impacts (FAA, FDOT 1993, SFRPC 1995).

TRANSPORTATION DISADVANTAGED AND MOBILITY

Auto dependency is a side-effect of the transportation problem that most negatively impacts the segment of the Region's population who can least afford it—the too old to drive, the handicapped, people with low incomes, and children. These are the transportation disadvantaged and they account for approximately 25 percent of the Region's population (FCTD, 1995). For the most part, our transportation and land use planning fails to adequately address mobility needs for this segment of the population. This is of particular concern since proportionately over the next 20 years the Region will house a greater elderly population and experience significant growth in children between the ages of 0-16 (BE BR, 1991). The Americans with Disabilities Act (ADA) is relatively recent federal legislation which is having a positive affect on the mobility of the Region's disabled population. Many design features (e.g., sidewalk ramps, grooves for the blind, audio walk - do not walk signals, etc.) are being incorporated into transportation facilities. Efforts along these lines should continue.

DRAIN ON THE FAMILY BUDGET

The Region's current transportation system places an inordinate burden on the family budget. Household expenditures for transportation are nearly 25 percent of the family budget, with many households allocating more for private transportation expenditures than they do for food or shelter (Jacobs, 1990). For most families, ownership of an automobile has become a prerequisite to survival, and ownership of multiple vehicles is necessary for a reasonable quality of life. The disproportionate amount of money families must spend to move around in this Region is a result of flawed transportation, land use, and fiscal policy.
More importantly, it limits a person's ability to afford housing, absorb tax increases, liberate themselves from government support and subsidies, access employment opportunities, and add money to the mainstream economy.

LEVEL OF SERVICE STANDARDS AND ACCESS

Highway standards are generally in inverse relation to the needs of transportation. The modern highway in open rural areas often degenerates in suburban areas to an obsolete right-of-way crowded on both sides with commercial activity strung out in an unsightly array to create what has been aptly called America's longest slums (Owen, 1966). Downtowns and urban areas are expected to achieve the same levels of service and free flow of traffic of suburban areas. Misdirected efforts to achieve this by road building in downtowns and central business districts instead of increasing mobility using transit options and land use corrections have led to a decline of urban communities and their economic value to the Region. Excess curb cuts, in combination with additional traffic generated by poorly planned strip commercial development has unnecessarily reduced levels of service on the regional roadway network and increased traffic hazards.

HAZARDS OF AUTO-DEPENDENCY

The accident toll related to driving is of serious concern. Since the turn of the century nearly one million people in the United States have been killed in motor vehicle accidents. Traffic deaths from 1977 through 1988 exceed all U.S. battle deaths in all wars from the Revolutionary War through the Vietnam War (Evans 1992). In 1988, 14.8 million accidents led to 47,000 deaths and almost 5 million injuries (FHA, 1991). In 1993, nearly 200,000 accidents occurred in Florida claiming 2,700 lives and injuring more than 200,000 (BEBR, 1994). During that same year, the Region accounted for nearly 10 percent of the States total accident-related injuries and deaths (BEBR, 1994). The public and private costs associated with this side-effect of current transportation planning are enormous (MacKenzie et. al., 1992). The more we drive, the greater the risk of experiencing injury, fatality, and associated costs. In spite of all the studies, interventions and traffic laws, on the basis of fatalities, injuries and economic costs, auto crashes are one of the most significant policy problems in this nation.

INFRASTRUCTURE COSTS

The cost of providing and maintaining the physical facilities required to meet traffic requirements is large (FDOT, 1995). Local and State governments burdened by heavy outlays required to accommodate ever-growing volumes of traffic frequently find that attempts to relieve congestion serve only to move the critical point somewhere else. Expressways or parking facilities established to meet the demand attract further use, magnify the need, and actually make the problem of congestion worse. Moreover, new facilities not only mean heavy capital outlays, but the loss of large areas of land from the tax rolls, reducing receipts at the same time that added revenues are being sought. At some point, or "threshold", costs to provide additional lanes due to increased dependency on the automobile become so high that the expense is no longer justified (FDOT, 1986). State_
Policy formally recognized this in 1991 and 1992, limiting the number of unrestricted travel lanes on State roads to a maximum of six.

UNDERSTANDING THE TRANSPORTATION-LAND USE CONNECTION

It needs to be more broadly understood that when a large volume of traffic exists on a particular roadway or bridge, it does not automatically mean the roadway or bridge needs to be expanded. Rather, it means there are a large number of people that are not finding their needs met where they are, so they are forced to travel. Perhaps there are no grocery stores or jobs near where they live. Perhaps there is insufficient suitable housing close to where they work or they do not want to live close to where they work because the schools there have a bad reputation. Before deciding to spend millions of dollars expanding a bridge or a highway, at least some consideration should be given to using those same millions of dollars to solve the fundamental problem--inadequate availability of housing or services.

Studies of why people are driving on a particular road are rarely conducted, even when the proposed highway construction or expansion would cost huge sums of money. It is assumed growth must be accommodated by building or expanding roadways. What is not well understood is that if no action were taken (i.e., the roadway or bridge was not expanded) the problem would over time take care of itself. As congestion gets worse, demand is created for services closer to where people are. The grocery store or office that did not exist, is built because people will prefer to shop or do business close to home rather than face congestion.

The converse is also true. If the road is built or expanded local markets never develop and are sometimes destroyed where they exist because it is made easy and convenient to drive past small neighborhood businesses in favor of more distant regional discount facilities. Such regional facilities can only exist where they are supported and subsidized by road building programs and taxes, paid for in part by the small businesses people now drive past. Road building makes new trip destinations possible and convenient. The frequency of trips increases because access and travel are made easy. It becomes possible for people to take jobs further away. An unintended effect of expanding the roadway system in several cases has been to encourage more driving. As a result, the expansion only temporarily relieves congestion problems. This effect occurs because traffic frequently expands to fill the available road space. In effect we are trying to overcome our traffic congestion by encouraging more traffic (Newman and Kenworthy, 1991).

The Region's transportation problem cannot be solved solely by supplying more and more roadway capacity by building more and bigger roads. This approach will only aggravate the problem and is unaffordable as a solution. The attack must come from the demand side of the problem. This will require a greater reliance on, and an understanding of, the relationship between land use and transportation planning as well as a reversal of personal behavior and travel trends and conditions that are at the root of the problem.
3. Important Regional Trends

a. Trends in Growth and Development Patterns and Transportation Demand

The Region's sizable growth of population and jobs over the last 40 years has been blamed for creating the Region's transportation and mobility problems. While growth is a factor to be considered, no one thing has compounded the transportation problem more than the geographic patterns of development in which this growth has occurred.

Source: New Jersey State Development and Redevelopment Plan 1988 and TCRPC Staff

Figure 7-2
DEVELOPMENT PATTERN TRENDS

In terms of persons per square mile of urban land, population densities in the Region have not increased in 20 years. Increases in urban land area have expanded at about the same rate as population. Most of the new development has been located away from established, high density urban areas and towards the undeveloped, western portions of the Region.
The trend of decreasing densities, rapidly expanding urban land area, and increased settlement in previously undeveloped areas away from coastal cities is likely to continue the increase in private automobile use in the future. The following trends and conditions also point to increased traffic congestion, automobile dependency and use in the future, with all the negative costs and impacts:

- From 1970 to 1990 the number of vehicle miles traveled in Florida increased by 163 percent, while population increased by only 90.5 percent;
- Average trip length in the Region has increased from 7.1 to 7.7 miles since 1980;
- Vehicle miles traveled in Florida has increased by nearly one hundred percent since 1980, while new lane miles of road constructed has increased by only 10 percent;
- Vehicles per household in the Region has risen by nearly 46 percent since 1960, increasing from 1.1 to 1.6 vehicles per household;
- There is approximately one car registered in Florida for every man, woman, and child living in the State;
- Florida ranks fourth in the nation in both population and in vehicle miles traveled, but 15th in total highway mileage;
- On average, Florida roads have twice the traffic of typical roads in the United States;
- Although Florida has only 3 percent of the U.S. road mileage, it has almost 6 percent of the Nation's vehicle miles traveled.
- Between 1973 and 1989 automobile fuel efficiency doubled, but automobile fuel consumption in the U.S. during the same period increased by 20 percent;
- In 1989 dollars, gasoline is less expensive today than it was in the 1950's;
- True cost of a gallon of gas could be upwards of $3.50. All other industrial European and Asian nations pay between 3.50 - 4.00 per gallon. We pay an average of $1.50 per gallon;
- Overall travel time to work in the Region has increased by 5 percent between 1980 and 1990, with the greatest percent change occurring in all counties in the number of workers commuting 30 to 45 minutes or more to work;
- Workers in the Region commuting to work outside of their county residence has increased between 30 to 40 percent since 1980;
- The number of persons per car going to work has decreased by nearly 10 percent between 1980 and 1990;
• In 1980, 64.4 percent of Americans drove alone to work. By 1990, the figure was up to 70 percent.

• The percentage of workers in the Region who drive alone to work rose from 75 percent in 1980 to 80 percent in 1990.

• The percentage of the Region’s work force who carpool has decreased from 21 percent in 1980 to only 12 percent in 1990;

• The percentage of the Region’s work force using public transportation to get to work has dropped from 1.6 percent 1980 to 1.0 percent in 1990;

• Federal highway dollars spent per transit dollar more than doubled from 1981 to 1991, from $1.90 to $4.60. It is estimated for 1995 that for every federal transit dollar spent, $4.30 will be spent on highways;

• Transit now carries only 5 percent of the nation’s daily commuters versus the 35 percent it carried 50 years ago; and

• Since 1980, the percentage of the work force who walk or bicycle to work in the Region has declined by nearly 50 percent.

LAND USE AND THE DEMAND SIDE OF THE EQUATION

Reversing these trends in the future will be critical if the Region is to solve the transportation problem and increase quality of life. The Region will not be able to reverse these trends by constructing more roads. It will not be able to completely build its way out of congestion and transportation problems. This is especially true in rapidly suburbanizing areas of the Region. There is a need to begin addressing these problems from the demand side. The most powerful tool we have is land use.

The Region's land use pattern is dominated by conventional suburban or "pod" development. This pattern of development segregates individual land use into free-standing parcels of land. There are no direct connections between individual parcels. All intracommunity travel is directed onto a collector street system and ultimately a portion of the arterial roadway network. External traffic (i.e., traffic outside the development) is directed to a single arterial connection. Walking and biking to various destinations is severely limited and often hazardous. Such development is basically unserviceable by transit.

The Region also contains some very good examples of more community-oriented development patterns. These are characterized by having a network of streets, configured in a grid pattern, with multiple routes for intracommunity trips and alternate routes for external travel (i.e., travel outside the community). Community-oriented development is based on the premise of integrated land uses, a range of housing types and affordabilities, an average density of about 5-6 units per acre, with travel between land uses possible on a
variety of alternative routes. Walking and biking to various attractions is encouraged and safe. Accommodations for transit are excellent.

The diagrams on the following pages graphically depict the transportation network and land uses features of the two different patterns of development.

An analysis of traffic generation, capacity, and assignments of the two different development patterns done by Kulash, et. al. in 1990, compared their performance with the following results:

- The community-oriented pattern generated 25 percent less vehicle miles of travel (VMT) on arterial streets then the conventional suburban or sprawl pattern. This reduction in arterial street volumes is due to the direct connection of the land uses within the community-oriented pattern, eliminating the need for traversing up and down the local/collector/arterial street hierarchy for trips within the community.

- In the community-oriented pattern, the collector streets (and therefore collector street traffic) are nearly eliminated from the street hierarchy.

- The community-oriented pattern yields a total internal VMT that is 57 percent of the conventional suburban model. This reduction is due to the more direct routing of the internal (i.e., inside the community) trips on the gridded network of streets built in the community-oriented pattern.

The reduction in VMTs between the two patterns of development is large. The costs of sprawling suburban development patterns and potential savings yielded through reducing VMTs through better community and land use planning are enormous, considering that the Region's population traveled an estimated 6 billion vehicle miles in 1990 and that vehicle ownership and social costs of driving per VMT are estimated to be 50 cents and 27 cents, respectively (CUTR 1994, AAA 1995, and Ewing 1994).

The cost-savings between the two patterns of development do not even consider the secondary savings of energy conservation (perhaps as much as 30 percent over a 20-30 year period [Roberts 1979]), vehicle emission reductions, personal time saved, reduced chances of injury and mortality from spending less time in cars on the road, and having our roadways last longer without expansion due to more efficient use.

Studies also demonstrate that there is no efficiency of scale in large roads. In fact, there is a deficiency of scale. Three two-lane roads yield more traffic capacity than one six lane road. You cannot turn any more vehicles at a large intersection than you can at a small one (Fulton and Kulash, 1991).

Land use is the critical question facing our communities in the future. Land use patterns and design must be taken in a new direction. Fundamentally, the Region must consider the needs of pedestrians, cyclists, and transit uses in our land use decisions to avoid further problems in the
future. Choices need to be preserved and provided for the future in suburban and urban areas where people can safely walk, and use bicycles and transit as well as their automobiles.

b. Trends in Other Transportation Modes and Transportation Demand

1. Mass Transit

As more people continue to live and work in the Region, a truly regional transit system will become essential to assure a good level of mobility and a high quality of life. It is no longer a question of highways versus transit; we need both and a system of land uses that is compatible with both modes.

Mass transit can serve important regional transportation needs by relieving congestion on the regional roadway network, providing linkages with other modes of travel, and providing service to the transportation disadvantaged population. It is recognized that the principle reasons that transit seems never to be seriously considered in Florida are: 1) that it needs to be subsidized; 2) because it is expensive to serve low density areas with transit and 3) because it is assumed that people will not use it. In response, it should be pointed out that: 1) automobile use is already subsidized heavily by road building and artificially low gasoline prices, and costs the public a tremendous amount of money out of pocket; 2) low density development should not exist on ecological and other grounds and would not if it had not been promoted by government policy; and 3) that people would use transit and do so where such service is competitively convenient to use. Other problems in the Region also need to be overcome if mass transit is to be implemented at any meaningful scale. The poor image of transit, prevailing land use patterns, lack of coordination between land use and transportation policies, and the general decay of central urban areas are the most serious (Allen, 1986).

In spite of these obstacles, providing bus and rail transit services within the Region present viable alternatives for addressing the Region's need to reduce its dependency on the automobile. It may also provide a cost-savings to its users. Recent data from the American Public Transit Association (APTA) suggests transit is becoming less expensive then driving to work alone. APTA research finds that a typical ten-mile round trip commute costs only $2.00 by public transit compared with $6.68 when driving alone.

EXISTING TRANSIT SERVICES

Current transit services are limited in the Region. Local services are mainly provided in Palm Beach County by the County's Palm Tran Bus System. Additional mass transit services in the County are also provided by private sector parties via jitneys and private minibuses and vans coordinated through the County's Metropolitan Planning Organization. Residents of the three northern counties in the Region rely mainly on limited services provided through local Councils on Aging. Indian River County operates a community coach fixed route transit service.
Figure 7-3
TRANSPORTATION NETWORK

Conventional Suburban Pattern

Community-Oriented Pattern

Unpredictable, Discontinuous Street Pattern (Predominantly Dead-End Streets and Cul-de-Sacs)

Single Route on Arterial

Multiple Routes Dispersed onto Local Streets

Source: DPZ, Kulash, and TCRPC Staff
Figure 7-4
LAND USE

Conventional Suburban Pattern

Community-Oriented Pattern

Source: Kulash and TCRPC Staff
The only regional transit is provided by the Tri-County Commuter Rail Authority (Tri-Rail). Tri-Rail is a commuter train which provides service in Palm Beach, Broward and Dade counties. Presently, 30 trains are operated each weekday, twenty trains are operated on Saturdays and some holidays and 10 trains are operated on Sundays. Since Tri-Rail began operating on January 9, 1989, ridership has steadily increased, but began to level off in 1994 and 1995 as a result of delays caused by railway expansion construction within the corridor and a fare adjustment.

![Tri-Rail Ridership](image)

Source: FDOT 1995

**Figure 7-5**

**TRI-RAIL RIDERSHIP**

Efforts in the Region have been initiated to: 1) move Tri-Rail in Palm Beach County from the CSX corridor west of I-95 to the FEC corridor which bisects several coastal cities; and 2) extend commuter rail service north through the Region along the FEC line. Efforts to make this happen on the part of the Region's coastal cities, FDOT, Tri-Rail, the Council and the Region's MPOs should continue.

**LAND USE AND TRANSIT**

Land use decisions affect the efficiency and effectiveness of transit systems to a large degree. Our land use planning process should ask how people will walk places, how they will use bicycles and how they will get access to public transit, as well as how they will use their automobiles. In terms of surface transit services, municipal planning can help make public transit a viable alternative to the automobile by encouraging an appropriate arrangement, mix, and density of land uses within the urban area (Cervero, 1986). Transit service can also be enhanced by subdivision and neighborhood designs that facilitate transit access (Cervero, 1985).
The spatial arrangement of land uses within the urban areas can also have a significant impact on transit use because it affects overall trip lengths, travel times, and the level and quality of transit services. Land use policies that discourage unnecessary suburban sprawl, improve the balance between residential and job location, and increase the concentration of urban development activities result in an increase in the efficiency of a transit system. Public transportation can also be more easily accommodated into developments if it is included at the earliest stages in the design process and the public transportation operator is a partner in that process.

The diagrams below and on the following page describe examples of planning and design that fosters transit and those that do not.

Figure 7-6
DESIGN GUIDELINES FOR TRANSIT

PUBLIC TRANSPORTATION CORRIDORS

In an attempt to bring land use into the transportation planning arena, FDOT has designated public transportation corridors in the Region. These include Okeechobee and Glades Road in Palm Beach County. Others should be considered. These include portions of State Road 76 and East Ocean Boulevard in Martin County, State Roads 68, 70 and 615 in St. Lucie County, State Road 60 in Indian River County, State Road 7 and State Road 80 in Palm Beach County, U.S. 1 and State Road A1A throughout the Region. Land use and density guidelines and public investment strategies should be developed in cooperation with local governments to help implement and support transit opportunities in these corridors. Transportation-related legislation adopted in 1995 identifies corridor management planning as a valid function of a local government's growth management responsibilities and encourages development of corridor management plans as part of the local government comprehensive planning process.
According to studies done by USDOT, APTA, and others, ridership on public transportation increases as residential density increases. Under good conditions, at 15 dwelling units per acre (du/ac), there can be a 100 percent increase in bus usage over that of 5 du/ac. At 30 du/ac, bus usage can triple, and at 50 du/ac there can be more bus trips than auto trips. Low density single-family housing of under four du/ac is generally too low to support any transit except park-and-ride express buses to very large downtowns. The threshold for local bus service to residential areas is approximately 5 to 7 du/ac. Medium density between 8 to 15 du/ac can generally support local bus service. If these densities are maintained over a large enough area, with good street access, rail transit may be supported.

**RAIL CORRIDORS**

Applying appropriate land use and fiscal policy tools to the Region's rail corridors, especially the FEC, will also be beneficial. Historically, and where rail lines have been highly successful, land use around commuter rail stations has allowed development to occur in compact urban forms which offered shopping, housing and employment opportunities, and other attractions (e.g., large civic and cultural uses) immediately adjacent to or within walking distance from the station (see theoretical sketches for the area around the Boynton Beach Station, Downtown West Palm Beach Station and Lake Worth Station). When development like this occurs, the station itself becomes a major destination and embarking point and the chances for: 1) increased ridership; 2) shared and reduced parking area; 3) reduced and more efficient transfers to other transit modes (e.g., cabs, buses, etc.); 4) reduced energy and auto use; and 5) increased safety in and around the station, become more likely. Any guidelines that are developed should be receptive to and encourage local government efforts to provide for compact, pedestrian-oriented development adjacent to and surrounding rail stations. Densification around coastal city rail stations and lines, especially on FEC-owned property may assist FEC in their decision to bring passenger service back and add Tri-Rail services to the east.

2. **Seaports and Airports**

Airports and seaports play a crucial role in the movement of goods and people to and from the Region, the rest of the nation, and other nations as well. Further planning efforts to facilitate the movement of people and goods from seaports and airports to rail and road networks are essential to enhancing growth and economic development in the Region.

Significant growth for seaport and airport facilities is forecast over the next twenty years. For example, cargo handled by the Port of Palm Beach has doubled in the last 10 years. This trend is projected to continue through the next decade. Passenger traffic has increased more than 100 fold at the Port between 1985 and 1995. The Port of Ft. Pierce is currently in the process of improving its accessibility for larger, deeper draft ships. This will increase its ability to handle more cargo and passengers.

Palm Beach International Airport (PBI A), the Region's largest commercial service (passenger) airport, has also experienced significant growth, a trend which is expected to
Figure 7-7
TRANSIT ORIENTED DEVELOPMENT

NOTE: The term TOD (Transit Oriented Development) was coined to describe places and plans that accommodate transit very well.
continue as the Region grows. Vero Beach Municipal Airport is also designated by the FAA as a commercial service airport facility. St. Lucie County International Airport also has plans for the distant future of becoming the Region's third commercial service airport.

As a result of current plans and trends, continued development of new facilities and enhancement of existing facilities are both needed and anticipated. Indicators of significant growth of seaport and airport facilities of the Region are listed in Tables 7.1, 7.2, and 7.3. Growth and expansion of these facilities will also significantly impact the Region's economy, the connecting roadway system and the Region's air quality.

<table>
<thead>
<tr>
<th>TABLE 7.1</th>
<th>PBIA</th>
<th>Passenger Enplanements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1984</td>
<td>1994</td>
</tr>
<tr>
<td></td>
<td>3,930,842</td>
<td>5,588,434</td>
</tr>
</tbody>
</table>

Source: PBC 1995

<table>
<thead>
<tr>
<th>TABLE 7.2</th>
<th>PBIA</th>
<th>Landed Cargo By Ton</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1984</td>
<td>1994</td>
</tr>
<tr>
<td></td>
<td>4,261,200</td>
<td>4,663,410</td>
</tr>
</tbody>
</table>

Source: PBC 1995

<table>
<thead>
<tr>
<th>TABLE 7.3</th>
<th>Increase in Seaport Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PORT OF PALM BEACH</td>
</tr>
<tr>
<td></td>
<td>Port of Palm Beach &amp; Port of Fort Pierce</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PORT OF PALM BEACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Short Ton</td>
</tr>
<tr>
<td>Passengers</td>
</tr>
</tbody>
</table>

Source: Port of Palm Beach, 1995
Figure 7-8
THEORETICAL NEIGHBORHOOD AROUND STATION
Boynton Beach, Conceptual Sketch

Source: TCRPC Staff
Figure 7-9
THEORETICAL NEIGHBORHOOD AROUND STATION
Lake Worth, Conceptual Sketch

Source: TCRPC Staff
Figure 7-10
THEORETICAL NEIGHBORHOOD AROUND STATION
West Palm Beach, Conceptual Sketch

Source: TCRPC Staff
3. High Speed Rail

Florida has been considering a high speed ground transportation system to connect the State's major urban areas for the past ten years. Currently, the means contemplated for implementing the high speed system will be a public-private partnership, with the State being a financial participant in system development (FDOT 1995).

The proposed rail corridor linking Tampa, Orlando and Miami is the one which will most directly affect the Treasure Coast Region. Corridor assessment studies indicate that for the Tampa-Orlando-Miami system, operating at 125 mph, capital costs would range from $1.3 billion to $1.8 billion and capture up to 4.7 million riders per year. An advanced high speed system, operating at 186 mph, would cost about $3.6 billion and capture about 5 million riders per year (FDOT 1995).

Precise location of the corridor has not been determined, yet the Miami-Orlando link will traverse the Region. Because of speed and safety considerations, it is likely that the location of the corridor will run through rural, unpopulated areas.

While this is an ambitious proposal for study, the long-term land use and environmental implications of constructing the system need to be considered. The potential for the high-speed system to disperse the Region’s population further, encourage suburban sprawl, and discourage infill and coastal city redevelopment needs to be seriously examined.

The faster people move as a result of modern means of transportation, the larger becomes their effective size and the more spread out they will become (Kohr 1973). The further a population spreads the greater distance it must cover to meet its needs. The greater the distance, the faster it must move. The faster it must move, the larger its effective (or velocity) size.

To address the need for the Region’s spreading population to move faster and further, we build new roads and widen old ones. The only problem with this approach is that we are not dealing with a fixed space of urban area. The addition of new ground transportation facilities outside the unrestrained limits of a city does not relieve the effect of overcrowding; it actually intensifies it by encouraging a given population to disperse even
further beyond the confines of the urban area into ever wider and more difficult frontiers (Kohr 1973). Roadway building cannot keep up. Each time we expand the network arithmetically, the spreading urban areas effective population is increasing geometrically.

The development of a high speed rail system through the Region will have the effect of drastically increasing the speed at which our population can move out and away from its urban areas. Perhaps instead of focusing on finding additional ways to move people faster out of and through the Region, the State should consider investing in more conventional transit approaches that would serve existing communities and expand economic development opportunities within the Region. Instead of compounding the Region's transportation and economic problems, this approach would favor a less expensive effort to expand and improve the function of light rail and commuter systems such as Tri Rail. The effort must also include redevelopment and revitalization of our existing urban areas to the extent the population would be motivated to stay, rather than disperse or leave the Region via long-distance high speed travel.

4. Mass Transit’s Link to the Economy

U.S. Secretary of Transportation, Federico Pena, recently announced a new National Transportation System initiative by challenging Americans to view transportation inefficiencies as an economic cost. The Secretary noted that even a "1% improvement in overall efficiency of America's transportation system would translate into nearly $100 billion in savings across our economy" (USDOT 1994). However, assuming additional transportation spending on any mode would be equally advantageous to economic growth may not be entirely correct. For instance, in a report to the American Public Transit Association, he noted the following:

Relative to a baseline path, a program on increased transit spending of $100 billion over a 10-year period is predicted to raise productivity at an average rate of about $18.50 a year so that by the year 2000 the annual increment to productivity peaks at $185. A highway spending program of equal magnitude, while also lifting productivity, would have a somewhat smaller impact. In the case of enhanced spending on highways, productivity would climb at an enhanced pace of more than $8 per year until 1999 and would peak at just $87 in that year (USDOT 1994).

This suggests that transit spending carries over twice the potential to affect productivity as does highway spending. Clearly, positioning other aspects of land use plans so as to make transit investments more feasible can allow for more cost-effective transportation investments and thus a significant impact on the Region’s economic productivity.

The Region must not only ensure mobility to its citizens, but access to markets, jobs and opportunities. State and local governments must also recognize the social and environmental impacts of transportation as well as the direct and indirect costs associated with them in making transportation investment decisions. (FDCA 1995). Improving major airports, seaports, railroads and truck facilities, completing and improving intermodal connections, and managing and preserving designated public transportation
TRADITIONAL WAY OF ADDRESSING TRANSPORTATION PROBLEMS AND ITS RESULTS

CONGESTED ROAD

BUILD A HIGHWAY

CONGESTED HIGHWAY

CONGESTED HIGHWAY + CONGESTED ROAD

BUILD A FAST NEW RAILWAY

CONGESTED HIGHWAY + CONGESTED ROAD + CONGESTED RAILWAY

BELIEF IN ONLY THE WIDENING AND EXPANSION SOLUTION

WASTING OF: MONEY
TIME
ENERGY
RESOURCES
SPACE

RESULT: INCREASING SOCIAL TENSIONS
DECREASING TRAFFIC SAFETY
DECREASING QUALITY OF LIFE

FIGURE F-1 (Source: Knoflacher and TCRPC Staff)
connections, and managing and preserving designated public transportation corridors will strengthen the Region’s position in the global economy and facilitate the linkage of transportation and land use planning into a cohesive regional growth management system.

5. Parking, Transit, and Pedestrianism

The integrity and attractiveness of downtowns, local communities and neighborhoods depend very much on the amount of parking they provide. The more parking they provide the less possible it will be to maintain a good pattern of development, because the parking spaces will attract cars, which in turn will compromise the pedestrian environment and structure and scale of a community. Very simply--when the area devoted to parking is too great, it destroys the land (Alexander, et. al. 1977). For example, in downtown Los Angeles, over 60 percent of the land is given over to the automobile.

The placement of parking is a key ingredient for successful pedestrian and public transportation circulation (USDOT, 1989). Large, free parking lots and garages reinforce auto-dependency in suburban and urban developments. In such environments the public is discouraged from walking, riding a bicycle or using public transportation.

Figure 7-12
PARKING PLACEMENT

Undesirable
No pedestrian connection provided, distance between building and bus is too far

Desirable
Parking behind, bus stop close to entrance, walkways to entrance

Undesirable
Buildings separated from street by parking

Desirable
Parking behind building


Source: Design for Bus Facilities, Orange County Transit District, (1987)
PARKING AND DESIGN

Reducing the impacts of parking through better design of parking at development sites will encourage the use of alternatives to the single-occupant auto. Some ways to do this include: 1) arranging buildings on a site to reduce the walking distance between other buildings, the street, and public transportation stops; 2) orienting the building towards the street and not parking lots; 3) locating buildings for equal convenience to transit facilities and sidewalks as well as auto parking; 4) locating parking to the sides and backs of buildings so as not to require walking though large parking lots to reach building entrances; 5) building and landscaping parking lots and garages so they are shielded from the street to minimize damage to the pedestrian experience; 6) making use of smaller, scattered parking lots or nodes of parking to prevent “bunching” of parking into huge neglected areas; and 7) subdividing urban areas by “parking zones” or nodes and limit parking lot coverage within these zones. There is some evidence to suggest that good patterns of development and the environment for the pedestrian are compromised if areas for parked cars take up more than 9 or 10 percent of the land in a community (Alexander, et. al. 1979).

Figure 7-13
PARKING ALTERNATIVES

ON-STREET PARKING

When building or expanding roads in the Region, the goal of increased traffic flow and speed needs to be balanced with other State, regional, and local goals and objectives related to downtown revitalization, neighborhood improvement, economic development, employment and public safety. While the provision of on-street parking is not appropriate for every street and needs to be evaluated on a case-by-case basis, it does provide important benefits to business and pedestrians in various communities and downtowns.
1) On-street or “front door” parking, increases customer access to the business, potentially increasing revenues. This directly affects the business’s profitability, viability, and job base;

2) Deliveries, in some cases, are less difficult and do not have to be staged during nonbusiness hours to avoid blocking traffic lanes. This may reduce the cost of doing business and increase business efficiency;

3) On-street parking buffers pedestrians from moving traffic and encourages pedestrian activity which is a customer base for some neighborhood businesses and important to downtown revitalization. On-street parking prevents through traffic from passing at greater speeds and volumes that could destroy the possibility of pedestrian activity on the sidewalks;

4) A controlled and steady flow of traffic is the life blood of downtown and neighborhood retail. On-street parking has the effect of controlling traffic speeds and flows which encourage stopping and shopping. Without such control, traffic is encouraged to move through at higher speeds, bypassing local businesses.

5) On-street parking reduces the amount of pavement necessary to accommodate parked cars, reduces costs of development to business owners, and conserves developable land that could be used for additional development; and

6) On-street parking reduces the distance and time pedestrians must experience in travel lanes to cross the street, increasing safety and encouraging an exchange of customers on both sides of the street.

6. Great Streets

STREETS AND STREET PATTERNS

Some streets and street patterns are better than others. Streets that are designed and treated as public spaces, that are safe and comfortable for pedestrians as well as providing for adequate automobile movement are the best. Street patterns that provide multiple routes to routine destinations, disperse and calm traffic, encourage mobility on foot, by bike, or by car, and provide the framework around which towns and cities can elegantly grow and evolve are superior. A full range of streets may include highways and boulevards to carry regional traffic, streets for high density residential and commercial traffic, roads and lanes for lower density residential areas, and service alleys.

STREET FUNCTION

Streets are more than public utilities that permit people and goods to get from here to there. These are the primary function of only a very few public highways, interstates, turnpikes, and ring roads. The roles most streets play in Treasure Coast communities are quite
different. Yet, the Region’s streets have shifted over time from attractive, livable public spaces shared by cars and pedestrians, to their current use as channels for a high volume of motor vehicles, with responsibility for street design becoming solely the province of traffic engineers (Untermann 1992).

Streets moderate the form, structure, scale and quality of life of urban and suburban communities. Their sizes and patterns afford or deny light and shade, influence whether we walk, bicycle, or drive, and dictate how far and fast we must travel. In a very fundamental way, streets simply allow people to be outside (Jacobs 1993).

Some of the best streets are used for exchange of goods and services, as places where business and commerce occurs. They provide people places to meet by chance or as scheduled. Other great streets play a symbolic, ceremonial and political role, serving as sites for parades, protests, and festivals.

Some streets also fill the demand for parking cars quite nicely. The utilitarian ability of a street to accommodate parked cars can reduce the need and expense for private driveways, the size of parking lots and the cost of development. Streets that perform parking functions also increase the amount of land for public and private green space and economic development, and widen the buffer between the pedestrian and the car.

**STREET DESIGN**

Just as easily as a well-designed street can enhance community function and value, a poorly designed and conceived one can destroy it. Regularly, when citizens are aware of what is being planned, new roads and street widenings are protested, particularly if those road expansions will mean dislocation of people and business or higher volumes of fast-moving traffic on their streets. A recent survey of South Florida residents done by Florida State University indicated that less than half of the residents polled were willing to pay more in taxes for more road network expansions. The lowest percentage (28.2%) was recorded in Dade County where the damage done by poorly designed roads is perhaps most evident. On the other hand, proposals to improve existing streets to make them special places are regularly approved by voters who tax themselves to achieve this end. One notable example were the improvements made in 1967 to turn Market Street in San Francisco into a great street. The voters agreed to spend $24.5 million, not to tear down properties or build buildings, but to make Market Street beautiful (Jacobs 1993).

It is difficult to pinpoint what exact physical qualities make certain streets stand out over others. Some streets, however, do “feel” better than others and contribute more to improve a community’s social and economic well-being.

First and foremost a great street should be a public space that can be used by all, not just those that are able to afford an automobile and are capable of driving one. With very few exceptions, streets should be designed to follow this rule. Most should be desirable places
to be and move around on. They should be physically comfortable and safe and encourage social interaction and commerce.

Not all streets can combine all of these attributes, but it should be the goal. Each street should be designed on a case by case basis with this goal in mind.

There are several examples of great streets in the Treasure Coast Region. Royal Palm Way and Flagler Boulevard in Palm Beach County, Second Street in downtown Ft. Pierce, Lake and Lucerne Avenues in Lake Worth, and sections of St. Lucie Boulevard and A1A in Martin County are some, just to name a few.

In the Region there are opportunities, even for streets as large and unfriendly as U.S. 1 to be redesigned and retrofitted into a community asset. Following are some examples in perspective and in cross-section that illustrate street design, scale and pattern that should be considered when designing new streets or retrofitting old ones.

**STREET TREES**

Defining streets with buildings or trees to form a continuous, predictable border reinforces the function of the street as a public space and the structure of a community. Trees are a feature that should be appropriately incorporated into every street, and avoid conflicts with overhead and underground infrastructure.

Generally, trees should be planted in straight lines or rows close to the curb in the sidewalk or between the sidewalk and curb. Following these rules of thumb will provide maximum visual impact and shades most of the pavement while providing pedestrians with a walking area that feels safe from the automobile.

Durable trees should be used. Avoid planting trees too far apart. Most types of trees spaced over 30 feet apart will develop an open grown form branching close to the ground. This form is not suitable for street trees.

Street trees should be at least four to five inches in caliper when planted. This will help reduce damage from carelessness or vandalism. In addition, the trees will provide earlier shading and visual benefits.

Plant only one type of tree on both sides of the street in any one block. It is best to use a tree type that has already grown successfully in your community under similar conditions. It provides for visual continuity along the street. Diversity, if desired, should be provided at the city or town scale, not within a single block or street. Diversity of tree species does not create a more robust stand of trees. In fact, on an urban site the reverse is generally true (Arnold 1992).

These are just some of criteria that will make the use of trees along street effective in creating great public spaces. Other considerations include: sunlight, watering, pest
Figure 7-14
CITY BOULEVARD
Four lanes, medians, two service roads and wide sidewalks

Source: Jacobs 1993
Figure 7-15
HIGH TRAFFIC BOULEVARD
Six lanes, median and sidewalks

Source: Jacobs 1993
Figure 7-17
OCEAN AVENUE BRIDGE
Boynton Beach, Conceptual Sketches
Figure 7-19
MIDWAY ROAD
White City, Proposed Main Street Section
Figure 7-20
NEIGHBORHOOD STREETS
Two lanes and sidewalks

Source: Jacobs 1993
Figure 7-21
MAJOR NEIGHBORHOOD STREET
Two lanes, median and sidewalk

Source: Jacobs 1993
Existing unimproved R.O.W.
5th Avenue South, Between Federal Highway and "A" Street

CITY OF LAKE WORTH

1. Bike/Pedestrian asphalt path
   approximately 3500' in length, 12' in width
2. Grass for swales
   78000 square feet
3. Shade trees (live oaks or some similar native species) along the length of the Bike/Pedestrian Path
   150
4. Palm trees (at important intersections)
   24
5. Four-person benches
   12
6. Bus/Rain shelters
   6
7. Bike racks (to be installed at bus shelters)
   6
8. Lamps
   150
9. Picket Fence
   7000' in length

Figure 7-22
PROPOSED BIKE PATH
5th Avenue South
control, fertilizing, planting, pruning, maintenance, visibility of store fronts, sight lines and protection from abuse.

STREET LIGHTING

For streets to be safe and comfortable at night, proper streetlighting is a must. Selecting the type of light source and the placement, spacing, and type of light standard used on a street is a complex choice.

Generally, mercury and sodium vapor lamps should be avoided. They cause the eye’s pupil to actually contract, cause glare and paint the landscape in an eerie and unfriendly pinkish orange or blue glow (Tung 1992). Lighting should be spaced to avoid creating unlit gaps along the sidewalk. On downtown or shopping streets, lights should illuminate storefront signs as well as the street and sidewalk.

ROUNDABOUTS

In the United States roundabouts are often called traffic circles or rotaries, the latter because not all central islands are circular in shape, but still give a rotary movement (Todd 1988). Roundabouts or rotaries are intended as an alternative to regular signalized and unsignalized intersections.

The FDOT and other traffic professionals and agencies are beginning to reinvent and reintroduce traffic circles more and more as solutions to traffic problems and to enhance community appearance. Within the Region, Stuart’s Confusion Corner is the most memorable example. Others occur on a smaller scale and several are proposed for the new town of Abacoa in Jupiter and for downtown Ft. Pierce.

Information on roundabouts suggest the following general advantages and disadvantages:

Advantages:

1) Orderly and regimented traffic flow is achieved by eliminating traffic movements such as left turns, and traffic as a whole component of the system is considered in evaluating safety and mobility of the road users;

2) Conflicting turning movements are replaced by merge and diverge operations with relatively small angles;

3) For moderate traffic, roundabouts are self governing and require no additional traffic control measures;

4) They create memorable entrances to towns, cities and villages;

5) They establish highly visible venues for monuments and memorials;
Figure 7-23
ROUNDABOUTS
Proposed Redevelopment Projects
6) They encourage traffic to travel at reasonable speeds through intersections; and

7) Where designed properly, they are exceedingly safe.

Disadvantages:

1) As the traffic volumes reach capacity of the roundabout, the delays will increase due to the difficulty in the weaving operations. Under such conditions vehicles which enter into the roundabout will not be able to come out of the circular path and the roundabout gets locked up, resulting in long queues.

2) Normally, roundabouts require additional right-of-way, to construct the central island.

Based on review of technical documentation, the following are some of the basic site selection criteria that need to be considered before suggesting roundabouts as a solution to resolving intersection capacity and safety problems. These are:

1) Roundabouts are more appropriate when the proportion of turning traffic is very high. It is considered that at four-way intersections, a roundabout may need less land as compared to traffic signalization if right turning traffic exceeds 30 percent of the total traffic;

2) Roundabouts are good for moderately busy intersections in urban and suburban intersections; and

3) Roundabouts work best when approaching roadways have the same number of lanes and operating speeds.

7. Florida Intrastate Highway System

An important portion of the statewide and interregional transportation system is the Florida Intrastate Highway System (FIHS). The FIHS includes 4,171 miles of existing and future limited access and controlled access roadway facilities designated by FDOT which serve high-speed and long distance automobile travel. The FIHS carries almost 30 percent of the State’s total traffic while it represents only 3 percent of Florida’s roads (FDOT March 1995).

Florida’s Turnpike, I-95, SR 60, SR 70, SR 710, SR 80 and US 27 make up the FIHS in the Treasure Coast Region. The health of this roadway network is extremely important to the health of the Region’s economy and growth. Planning within FIHS corridors will consider the inclusion of other forms of transportation such as buses and passenger rail service. However, FIHS expansions needed during the next 15 years significantly exceed anticipated funds (FDOT March 1995). Because of the importance of the FIHS to the growth of the Region, local land use and transportation planning should reflect the need to
protect the integrity of the FIHS and minimize its use as a solution to local transportation problems.

c. **Trends in Employment and Transportation Demand**

The types of jobs created will also affect transportation demand in the Region. As incomes go down, demand for public transportation will generally increase. As a result the Region should expect to see an increase in demand for public transportation options as more low-paying service sector jobs are created in the Region. A large number of jobs that are being created in the Region are relatively low-paying service sector jobs (BEBR, 1994).

d. **Trends in Tourism and Transportation Demand**

The trend of increased tourism in the State has been dramatic. In 1990, the number of tourists arriving was 41 million, three times the State's population. The State has experienced an annual tourist growth rate of 7.4 percent during the 1980s. This represents a significant source of increase in the demand for transportation facilities (CUTR, 1994).

Additionally, if planning ignores the needs of our own residents it also ignores the needs of some tourists who visit Florida and come from places where not everyone has the need for an automobile. The money spent by such visitors is in areas like Miami Beach, that are more pedestrian friendly and have reasonable transit systems, and not in most areas of the Treasure Coast.

e. **Trends in Intergovernmental Coordination and Transportation Planning**

Responsibility for each form of transportation is divided among different agencies within the State and counties, and again among the various municipalities sharing transportation responsibilities in the Region. Our transportation problems are not being solved because no single agency of government is responsible for their solution.

At the State level, the responsibility for transportation systems planning and implementation lies with FDOT, while land use planning is carried out by local governments under the scrutiny of the Department of Community Affairs. Planning occurs mainly as a reaction to one another's actions. Land use and urban form dictate and drive the need for transportation systems and the viability of transit as an option. While coordination between the FDOT and DCA occurs and is improving, a more efficient arrangement could be forged if land use and transportation systems planning were brought together under one roof. Implementation and transportation system building is a role that can remain a separate agency function without hurting efficiency.

Transportation planning on a regional level is promoted and maintained primarily through the metropolitan planning organization process. In theory, the process was intended to coordinate transportation regionally. In recent years however, the trend in coordinated transportation planning has been to further divide responsibility for transportation planning. The Region now has four MPOs, one for each county. Implementation is
primarily an individual jurisdiction responsibility. With limited funds, jurisdictions are forced to concentrate on meeting internal needs, rather than those of the Region as a whole. Improved coordination and cooperation between MPOs are essential for successful regional transportation planning. There is also room for the MPOs to increase their role in local and regional land use planning. In fact, it will be necessary for this to occur to achieve better integration of land use and transportation planning.

f. Trends in Transportation Demand Management (TDM) Strategies

The Region will not be able to build its way out of congestion forever. The Region has several opportunities to address the transportation problem from the demand side using land use adjustments. This is perhaps the most powerful and overlooked TDM strategy. As is stressed in every introductory transportation course, travel demand is a function of land use patterns. Clustering and mixing land uses have the following effects on travel demands: 1) trips will be shorter; 2) walking, biking and transit will become viable options; 3) a single trip can satisfy multiple purposes; and 4) travel is spread out more evenly across the day since different activities have different patterns of peak demand. New compact development generates about half as much vehicular travel as does suburban sprawl (Ewing 1993).

Within a 20-year time frame the potential of land use changes to reduce vehicle miles traveled far exceeds the potential of other TDM strategies (Ewing 1993). Even so, emphasis still needs to be placed on other solutions to managing travel demand.

In an analysis of TDM impact studies done by Ewing in 1993, the following were reported:

Broad ridesharing incentives can reduce daily vehicle commute trips to individual worksites by 5 to 15 percent. If substantial parking charges are levied as well, vehicle trip reduction climbs to 20 percent or more. Modified work hours can effect as much as a 50 percent reduction in peak-hour vehicle commute trips to individual sites. Concurrent flow high-occupancy vehicle (HOV) lanes generally reduce peak-period vehicle trips on individual facilities by 2 to 10 percent. This range applies to both arterials and freeways. If freeway HOV lanes are physically separated (by a barrier) and the main lanes are very congested, vehicle trip reduction may be as high as 30 percent.

At the State level, the trend towards using TDM is being promoted through changes in growth management regulations and practice; through a new interstate highway policy favoring exclusive HOV lanes; and through State funding for regional commuter assistance agencies and transportation management associations (Ewing 1993). At the regional and local level, utilizing common sense and low cost techniques such as increasing vehicle occupancy, increasing transit use, and rescheduling trips around peak travel hours provide opportunities to reduce congestion, improve air quality, and reduce energy consumption.

TDM strategies can include alternatives to single occupant vehicles and alternatives that affect when and where travel occurs. TDM alternatives to single occupant vehicles can
include public transit, carpools, vanpools, buspools or non-motorized travel such as bicycles and walking. TDM alternatives that affect when travel occurs can include variable work hours, flexible work schedules or compressed work weeks (SFRPC, 1995).

Telecommuting is a TDM alternative that affects where work occurs. However, there is a growing belief that telecommuting could stimulate suburban sprawl, have adverse impacts on land use and public transportation, and perhaps even result in increases in vehicle miles traveled, depending upon household location decisions made based on a reduced number of necessary trips to the workplace (CUTR, 1994).

TDM strategies enhance that ability to utilize transportation alternatives. TDM strategies may include time incentives such as preferential parking for ridesharers and HOV lanes. TDM strategies may also include financial incentives such as transportation allowances and subsidies for transit riders and substantial parking charges for single-occupant vehicle commuters. TDM strategies may also include marketing strategies that promote transit use or guaranteed ride home programs.

Even with all these TDM tools available to us, only one out of every five vehicle trips are under the influence of TDM programs. At this rate such programs can only be expected to reduce regional traffic volumes by one or two percent. Boosting this percentage in this Region will require greater efforts to reproduce exemplary TDM programs at multiple employment sites, extend programs to small worksites, and manage nonwork trips as well as we manage work trips (Ewing, 1993). Establishing and supporting Transportation Management Organizations within the Region can also further efforts to implement TDM programs and reduce congestion.

g. Trends in Transportation System and Land Use Planning for Emergency Preparedness and Evacuation

The regional transportation system is an important part of emergency preparedness planning and in relief, recovery and reconstruction efforts. In the aftermath of Hurricane Andrew (1993), public and emergency planners became aware that a congested and discontinuous street network are unacceptable in an emergency evacuation situation and during the relief effort.

Perhaps the most important lesson Hurricane Andrew taught emergency planners is that good community design and an efficient internal street network within the community greatly enhances the success of post-disaster relief and recovery efforts. Many of the communities hardest hit by Andrew were served by limited ingress and egress and had no recognizable community or neighborhood center which could serve as a logical and strategic location for a disaster relief station. Many of those areas also suffered from a lack of public buildings, which again could have served as logical community sites for shelters, or medical and food distribution centers. Many segments of the disjointed road networks were blocked after the storm, with few alternative routes in or out of the devastated areas. The lack of centralized neighborhood locations (e.g., neighborhood commons or public squares) hampered the efforts of relief workers to set up medical and
food stations in an efficient manner, unnecessarily delaying emergency relief and putting people at risk.

In the future, regional transportation and land use planning must better address the capacity of the system and a community’s ability to respond both before and after the emergency evacuation. It is also believed that in the event of a future Category 4 or 5 hurricane, evacuations will be much higher than during Hurricane Andrew. As a result even more demands will be placed on the transportation system. How well we design our communities to be self-sufficient and sustainable will be of increased importance.

In Palm Beach County, five major routes serve as primary regional evacuation corridors: U. S. 1, I-95, Florida’s Turnpike, Military Trail, and the Beeline Highway. State Road 7 is also considered an evacuation corridor and will increase in importance if it is connected to the Beeline Highway. In the three northern counties of the Region, primary regional north-south evacuation routes are reduced to three: U. S. 1, I-95, and Florida’s Turnpike. State Road 609 is a potential north-south regional evacuation corridor if it is completed and paved as a contiguous highway.

Capacity will be constrained on these routes during an emergency evacuation. Building enough capacity into these roadways to accommodate traffic flow during the evacuation is not feasible. However, capacity can and has been increased in these corridors during the emergency by suspending tolls and opening up southbound lanes to northbound traffic.

h. Trends in Right-Of-Way and Infrastructure Costs

Many existing roadways in the Region do not have adequate capacity to handle the expanding demands of the growing economy (TCRPC, 1995). Given current trends for solving roadway capacity problems, it is likely that additional rights-of-way will be acquired and roadways built and expanded.

As land use intensities increase, property values increase resulting in greater right-of-way acquisition costs for government. Due to the trend of escalating costs of right-of-way acquisition, protecting and preserving needed future rights-of-way and acquiring right-of-way in advance of actual need is becoming increasingly important.

Recent estimates indicate that right-of-way costs vary from approximately $100,000 per mile in rural areas (North Florida) to $77 million per mile in the urbanized areas of Southeast Florida (FDOT, 1986). These costs are expected to continue to increase at a rate of six to eight percent a year over the next ten years (FDOT, 1985). It is therefore important for all local, regional, and State adopted thoroughfare right-of-way protection plans to be consistent. This will help reduce the amount of additional right-of-way acquisitions that may be necessary due to development of unreserved land. It is important that Corridor Management Plans be developed and adopted by local governments in consultation with FDOT to protect levels of service on important roadways and to reduce the need for acquiring additional right-of-way for roadway expansion. It is also important
Intersection of A1A and Olympus

Proposed Mixed-Use Building on A1A

Figure 7-25
HOBE SOUND
Conceptual Commercial Streets
that transportation planning consider demand side alternatives that will avoid the need for additional right-of-way, new highways, and roadway expansion.

Highway infrastructure costs are also increasing. Actual highway construction costs adjusted for inflation have increased 10 to 20 percent (FDOT, 1995). Cost for constructing one mile of two-lane road is averaging about one million dollars. To build the same mile of four or six-lane interstate or freeway can cost anywhere from 7 to 13 million dollars respectively (FDOT 1995).

Roadway construction has also been a drain on the budgets of local government in the Region. For 1995, county budgets for highway construction and maintenance will reach an estimated $245 million. Money budgeted for highway construction and maintenance in 1995 has increased four to five times what it was ten years ago. This rate of increase is greater than that budgeted for education.

There is also evidence to suggest that local governments cannot keep up with the spiraling costs. For example, to meet transportation needs through the year 2010 in Palm Beach County it was estimated that the County would have to commit $55 million per year for roadway improvements. Exclusive of improvements to I-95 and the Turnpike, the State will need to provide another $30 million per year for State road improvements. The County has not come close to fulfilling this commitment. Specifically in FY 1992-93, the program was under-funded by $22 million and the total five-year program was under-funded by $114 million. This equals 35 percent of the County’s program (PBC, 1993).

Right-of-way acquisition and highway construction also eats up valuable real estate, some of which could otherwise be used for economic development and public revenue generation. There are about 2,000 miles of public roadway in the Region. If we take 50 feet as an average width, including shoulders, this translates into almost 20 square miles of land. Apply this to Florida's 112,000 miles of roadway and the land consumed is nearly the size of the entire state of Rhode Island. These figures do not include the large land areas used for parking lots and private roads needed to support the Region's auto-oriented transportation system.

The trend of increasing costs for highway right-of-way, construction, and maintenance further suggests the Region will not be able to build its way out of congestion and solve the transportation problem. Even if massive roadbuilding is chosen as the preferred solution, the Region could not afford it and there is good evidence to suggest that a majority of South Florida residents are unwilling to pay for it (FSU, 1995).

i. **Trends for the Future**

To ensure that the transportation system maximizes mobility and accessibility, transportation systems must be thoughtfully designed and planned with a complete understanding of the significant effects they have on other regional systems and quality of
life. Effectively addressing current transportation problems will also require more than one solution.

For example, coordinated land use and transportation planning can help promote compact development patterns and support public transit systems. Transportation demand management in coordination with land use and transit planning help reduce use of the single occupancy vehicle. A combination of land use planning, regional transit planning, transportation demand management, new technologies, and coordinated planning efforts can help reduce the impacts of congestion and improve the quality of life in the entire Region.

Renowned city planner Lewis Mumford summed up the need for multiple solutions to the problem of transportation best when he wrote:

> It is an absurdly impoverished technology that has only one answer to the problem of transportation; and it is a poor form of city planning that permits that answer to dominate its entire scheme of existence...Future generations will perhaps wonder at our willingness, indeed our eagerness, to sacrifice our cities and towns, the education of our children, the care of the ill and the aged, the development of the arts, to say nothing of ready access to nature, for the topsided system of mono-transportation, going through low-density areas at sixty miles an hour, but reduced in high density areas to a bare six.

Excerpt from the City in History, 1961.

For a Region which is both motorized and mostly suburban, much of the solution lies in a better integration and closer relation between land use and transportation planning. We will have to use transportation resources to achieve better communities and community planning techniques to achieve better transportation.
B. Important Regional Issues

1. Lack of integration of transportation and land use planning;

2. Increasing automobile dependency;

3. Decreasing use of alternate modes of transportation;

4. Increasing public roadway facility backlog;

5. Increasing traffic congestion;

6. Inefficient and unsustainable patterns of development;

7. Challenges to mobility and accessibility for the Region's citizens, especially for the growing transportation disadvantaged population;

8. Need for increased intergovernmental coordination between local, State and regional transportation planning agencies and authorities;

9. Increasing public costs for transportation;

10. Increasing amounts of land required for transportation;

11. Need for increased consistency between local thoroughfare and right-of-way acquisition plans and programs, and with the FTP designated corridors list;

12. High automobile-related mortality and injury in the Region;

13. Need for additional higher density, mixed-use nodes and corridors within urbanized areas which are served by public transportation;

14. Increasing energy budget for transportation;

15. Underutilization of rail and other mass transit systems for transportation;

16. Underutilization of TDM strategies as a way to relieve congestion;

17. Need for more intermodal connections between public transportation systems;

18. Need for a greater understanding about the connection between transportation, land use planning and economic development;

19. Conflicting local goals related to development and redevelopment of seaports and airports.
20. Increasing need for the transportation network and our land use planning to accommodate hurricane and other emergency-related evacuation and recovery efforts;

21. Need for a greater recognition of the true cost and impact differences between urban and suburban patterns of development in our accounting and charging of impact fees and other exactions; and

22. Need for a greater understanding of how level of service and mobility standards can be met in urban communities and downtowns other than by building or expanding roads and parking areas.

23. Need to support FDCA’s Transportation Concurrency Exception process to encourage urban infill, redevelopment, downtown revitalization and mass transit.
C. Significant Regional Resources and Facilities

Regional Roadway Network

Indian River County

SR A1A
*SR 60
CR 510
SR 656/17th Street
U.S. 1
CR 605
Indian River Boulevard
CR 607
CR 611
CR 613
CR 619
*Florida’s Turnpike
*I-95
CR 512
CR 505
CR 606
CR 612
Walker Avenue
CR 611
CR 630
CR 632
North Winter Beach Road
CR 615 (66th Avenue)

Martin County

SR A1A
CR A1A
CR 707
SR 707
SR 732
CR 732
CR 723
U.S. 1
Willoughby Boulevard
SR 76
SR 714
CR 714
*Florida’s Turnpike
*I-95
SR 76A
CR 76A
CR 711
Port St. Lucie Boulevard Extension
CR 726
*SR 710
SR 700/15
U.S. 98/441
CR 609
SR 714
CR 714
CR 708
SR 5A
Mapp Road
Murphy Road
High Meadows Road
Gomez Road
Dharyls Street
Osprey Street
Martin Downs Boulevard
Sea Branch Boulevard
Cove Road
Salerno Road
Indian Street
St. Lucie Boulevard
Market Place Corridor
MacArthur Boulevard
Green River Parkway
Island Way
Country Club Drive

**St. Lucie County**

SR A1A
CR 605
SR 707
CR 707
CR 613
CR 609
CR 609A
CR 603
SR 607
*Florida’s Turnpike
*I-95
SR 713
CR 611
CR 709
CR 611B
CR 615
SR 615
CR 607A
SR 614
CR 614
CR 608
SR 608
SR 68
Delaware Avenue
*SR 70
Avenue A
CR 712
Walton Road
Lennard Road
Port St. Lucie Boulevard
Port St. Lucie Boulevard Extension
Becker Road
Gatlin Boulevard
Prima Vista Boulevard
St. Lucie West Boulevard
Reserve Boulevard
Savage Boulevard
West/East Torino Parkway
Palmer Expressway

**Palm Beach County**

SR A1A
CR 707
Center Street
Longshore Drive/Northfork Drive
Loxahatchee River Road
The Western Connector (Martin County, Jupiter)
Tequesta Drive/Country Club Drive
SR 811
CR 811
Central Boulevard
U.S. 1
CR 809
*I-95
*Florida’s Turnpike
Jog Road
Donald Ross Road
Hood Road
Prosperity Farms Road
SR 786
CR 706
CR 711
SR 706
*SR 710
Seminole-Pratt Whitney Road
CR 809A
CR 850
SR 850
SR 708
RCA Boulevard
Monet Road
Congress Avenue
Australian Avenue
CR 702
SR 805
Palm Beach Lakes Boulevard
SR 704
Roebuck Road
Belvedere Road
*SR 80
Summit Boulevard
Forest Hill Boulevard
SR 7
10th Avenue
SR 802
6th Avenue
CR 812
Hypoluxo Road
SR 804
Ocean Avenue
SW 15th Avenue
SW 23rd Avenue
Hagen Ranch Road
SR 806
CR 806A
CR 782
Lake Ida Road
Germantown Road
Lyons Road
Camino Real
Clint Moore Road
SR 794
SR 800
SR 808
SR 845
CR 798
CR 827
CR 700
SR 700
U.S. 98
*U.S. 27
Lake Avenue
Lucerne Avenue
Royal Palm Beach Boulevard
Crestwood Boulevard
SR 715/15
SR 729
CR 827
SR 880
SR 717
CR 717
Airport Road

Regional Roadway Network - The regional roadway network, as presently defined shall be that which is listed above. The list was established using the criteria listed below. Any proposal for additions or deletions to this list shall be evaluated using the criteria listed below:

1. All State Highway System facilities, all facilities on the Florida Intrastate Highway System (FIHS), Florida Turnpike System, and the National Highway System.
2. Intercounty roads that carry, or are projected to accommodate, a significant amount of traffic;
3. Access roadways to the Florida Turnpike and Interstate 95. The segments of these access roads to be included extend east or west of the Turnpike and Interstate 95 to the first intersection of a regional road;
4. Roadways that provide access to regional resources, facilities, or activity centers;
5. All existing or proposed expressways;
6. Florida Transportation Plan designated corridors;
7. Major evacuation routes; and
8. Other roadways that would significantly impact a previously defined regional roadway if that road did not function at an acceptable level of service; and all roadways shown as part of a county’s adopted thoroughfare plan which act as interconnecting links to the regional network, as defined above and approved by the Regional Planning Council.

*Denotes roads on the Florida Intrastate Highway System

Bridges

Donald Ross Bridge
Citrus Avenue Bridge
17th Street Bridge
Merrill Barber Bridge (SR 60)
Indiantown Road Bridge (SR 706)
PGA Boulevard Bridge
Parker Bridge (U.S. 1)
Jupiter Island Drawspan
Flagler Memorial Bridge (SR A1A)
Roosevelt Bridge
Royal Park Bridge (SR 704)
Jensen Beach Causeway
Southern Boulevard Bridge (SR 700/80)
Hobe Sound Draw Bridge
Lantana Avenue Bridge
Evans Crary Bridge
Atlantic Avenue Bridge (SR 806)
Ernest Lyons Bridge
All high-span bridges that are part of the Regional roadway network.
All other draw bridges that are part of the Regional roadway network.

Mass Transit

Palm Tran System
Local Council’s on Aging Systems
Transportation Disadvantaged transportation services
Regional Commuter Services Organization
Gold Coast Commuter Services Organization
All other public and private transportation providers using the regional roadway network.

Railway Lines

Tri-Rail
FEC Railroad
CSX Railroad
Amtrak
High Speed Rail

Airports

Palm Beach International Airport
North Palm Beach County General Aviation Airport
Vero Beach Municipal Airport
St. Lucie County International Airport
Martin County/Stuart Airport (Witham Field)
Lantana Airport
Boca General Aviation Airport
Sebastian Municipal Airport
Ports

Port of Palm Beach
Port of Fort Pierce

Intermodal Connections

Transportation Management Organizations
D. Goals, Strategies and Policies

Regional Goal 7.1

A balanced and integrated transportation system.

Indicator:

Percent change in use of alternative modes of transportation.

Percent change in amount of private vehicle miles per capita traveled in the Region.

Percent change in total gallons of gasoline used per capita in the Region.

Increase in total number of commuter rail passengers; total miles of passenger rail track; and new passenger rail stations.

Percent of roads operating at an acceptable level of service

Percent change in average trip length.

Increase in the proportion of State and local funds going towards transit vs. highway expansion.

Strategy 7.1.1: Develop a balanced, complete and fully integrated transportation system which, as a minimum, includes the following:

(1) two commercial seaports linked to and developed consistent with the port element of the local comprehensive plan, the Florida Transportation Plan, and the Florida Seaports Mission Plan;

(2) two regular service commercial airports linking the Region to major business centers both within and outside the State and sufficient general aviation reliever facilities consistent with the Continuing Florida Aviation System Planning Process;

(3) commuter rail service with stations linking the coastal cities and towns of the Region;

(4) a regional mass transit system linking commuter rail stations, major commercial airports, seaports, colleges, and principle urban areas within the Region;

(5) urban bus and shuttle service linked to each regional mass transit system station;

(6) designated public transportation corridors linked to the regional mass transit system;
(7) a road system designed to complement and supplement the core mass transit system;

(8) a road system designed and located to avoid fragmentation of native habitat;

(9) complementary pedestrian and bicycle connections;

(10) land use type and density changes necessary to support such a system;

(11) adequate Transportation Disadvantaged services to meet the needs of the transportation disadvantage population as defined by Florida Statutes; and

(12) facilities and services consistent with the Americans with Disabilities Act.

Policy 7.1.1.1: Reserve and protect sufficient road right-of-way on the regional roadway network to provide for an efficient multi-modal transportation system.

Policy 7.1.1.2: Develop or expand airports in accordance with an approved airport master plan which is part of the local comprehensive plan and which is consistent with the Continuing Florida Aviation System Planning process.

Policy 7.1.1.3: Develop or expand seaports in accordance with the Florida Seaports Mission Plan and an approved port development plan which is part of the local government comprehensive plan.

Policy 7.1.1.4: Where feasible and consistent with community character and goals, replace existing bascule span bridges with fixed-span bridges on the regional roadway network.

Strategy 7.1.2: Develop a complete and coordinated transportation planning process.

Policy 7.1.2.1: Assist public and private agencies and entities in implementing TDM strategies that reduce congestion, energy use and the number of single-occupant auto trips.

Policy 7.1.2.2: Give consideration during the planning of transportation system expansion to providing incentives for use of high-occupancy vehicles and alternative modes of transportation (e.g., car pools, van pools, buses, bicycles, etc.).

Policy 7.1.2.3: Increase land use densities and the mix of land uses around commuter rail stations and at strategic locations along designated public transportation corridors where consistent with other local and regional goals and strategies.
Policy 7.1.2.4: Develop and redevelop downtowns and strategic locations along designated public transportation corridors. In order to improve the feasibility of public transportation, residential densities should be no less than 8 units per acre.

Policy 7.1.2.5: Develop a regional roadway system of predictably spaced and interconnected east-west, north-south streets. Ideally, streets should be spaced every one-quarter to one-half mile to offer multiple route choices, disperse traffic, and discourage local travel on interstates and arterials.

Policy 7.1.2.6: Redirect development patterns from interstates and major arterials to town and neighborhood centers along collector and minor arterials.

Policy 7.1.2.7: Include land use analysis, urban design studies and origin and destination studies as part of the analysis in determining a course of action for solving roadway capacity problems.

Policy 7.1.2.8: Increase the understanding and coordination of land use and transportation policy decisions within and between departments and agencies at all levels of government to effect better solutions to the Region’s transportation problems.

Policy 7.1.2.9: To address multijurisdictional impacts and improve intergovernmental coordination, require a multijurisdictional traffic impact analysis when a development’s traffic impacts are expected to occur on roads outside the jurisdiction in which the project is located. All traffic impact analyses should include a land use analysis and urban design study.

Policy 7.1.2.10: Ensure consistency between State, local and regional transportation plans.

Strategy 7.1.3: Promote improved community planning and urban design.

Policy 7.1.3.1: Encourage patterns and forms of development and redevelopment that maximize public transportation alternatives, minimize the use of the Region’s collector and arterial roadway network, and reduce the total amount of daily vehicle miles traveled.

Policy 7.1.3.2: Plan and design new development and redevelopment to provide complementary interconnections for pedestrians and public transportation within and between residential areas, schools, employment and retail centers, recreational areas and other public facilities.

Policy 7.1.3.3: To maximize public transportation, pedestrian access and facilitate on-street parking opportunities, an urban design study should be prepared prior to the development and redevelopment of building sites or changes to the street network.
Policy 7.1.3.4: Reduce VMT per capita by private automobile within the Region through a combination of the following:

1. provision of public transportation alternatives;
2. provision of housing opportunities in proximity to employment opportunities;
3. provision of essential services and recreational opportunities in proximity to demand;
4. concentration of commercial and other essential services;
5. provision of a street network designed for the pedestrian, the disabled the automobile and transit;
6. provision of parking in ways that will encourage pedestrianism and public transportation alternatives;
7. provision of incentives encouraging infill and downtown redevelopment;
8. support of public and private sector efforts to carry out TDM strategies that will reduce congestion; and
9. expansion of commuter rail and intermodal connections.

Policy 7.1.3.5: Orient buildings toward streets to create better pedestrian environments.

Policy 7.1.3.6: Locate buildings so they are as convenient and accessible to public transportation facilities and sidewalks as they are to auto parking.

Policy 7.1.3.7: Locate parking to the sides and backs of buildings so that pedestrian access and access from public transportation does not require walking through large parking lots to reach building entrances.

Policy 7.1.3.8: Develop a tiered system of impact fees or other system of assessment which recognizes the wide and disproportionate differences in roadway use and impacts between local and regional land uses and attractions.

Policy 7.1.3.9: Design and locate parking lots and garages to enhance pedestrianism and the character and attractiveness of the area, and to encourage use of alternate modes of transportation.

Policy 7.1.3.10: Design efficient intersections and traffic light sequences which minimize idle time for automobiles.
Strategy 7.1.4: Encourage public transportation alternatives.

Policy 7.1.4.1: Review and where necessary amend public policy governing parking requirements to support “transit first” policies and to promote public transit as a viable alternative in high density areas, designated public transportation corridors, and central business districts.

Policy 7.1.4.2: Have new development or redevelopment provide transit ridership amenities (shelters, route information, and schedules) and appropriate and effective incentives whenever transit use is assumed or required to maintain acceptable roadway level of service.

Policy 7.1.4.3: Support and assist local governments in applying and qualifying for federal funding assistance to expand public transportation services where consistent with other regional goals and strategies.

Policy 7.1.4.4: Support requests for lower levels of service and establishment of transportation concurrency exception areas in higher density areas, downtowns, and along designated public transportation corridors where it can be demonstrated that levels of mobility and convenience will be maintained or increased through other modes of transportation or land use corrections.

Policy 7.1.4.5: Support development and implementation of corridor management plans which are consistent with the SRPP.

Regional Goal 7.2

Adequate mobility for the transportation disadvantaged.

Indicator:

Percent change in service opportunities and ridership of the transportation disadvantaged.

Strategy 7.2.1: Promote patterns of development which provide better opportunities for the transportation disadvantaged.

Policy 7.2.1.1: Encourage patterns and forms of development and redevelopment and street design that will improve mobility opportunities for transit dependent groups, especially the poor, the handicapped and the young.

Strategy 7.2.2: Provide services which improve mobility opportunities for transit dependent groups, especially the poor, the handicapped, the aged, and the young.
Policy 7.2.2.1: Coordinate transportation disadvantaged services in all counties with existing or planned public transit systems, including school bus systems.

Policy 7.2.2.2: Encourage the participation of the regional planning council as ex-officio members on Community Transportation Coordination Councils.

Regional Goal 7.3

Reduced vulnerability to disasters and increased public safety.

Indicator:

Percent change in population living on coastal barrier islands and in flood prone areas.

Percent change in hurricane evacuation clearance times.

Strategy 7.3.1: Reduce vulnerability through better transportation, land use and community planning.

Policy 7.3.1.1: Restrict further development on coastal barrier islands and flood-prone areas where established hurricane evacuation times are exceeded.

Policy 7.3.1.2: Plan and design new development and redevelopment to increase the ability of the internal and external roadway network to accommodate emergency traffic, enhance post disaster recovery efforts, and provide central locations for public shelters and emergency relief centers.

Policy 7.3.1.3: Phase out nonconforming uses on coastal barrier islands in order to reduce densities and aid in emergency evacuations.
Regional Goal 7.4

Fair and consistent treatment for projects in the Development of Regional Impact review process.

Indicator:

Number of Council recommendations to appeal local government DRI development orders.

Strategy 7.4.1: Provide standards for review of transportation issues in DRI’s.

Policy 7.4.1.1: Background traffic growth projections included in the traffic analysis that is submitted as part of the review process shall include the following factors:

(1) full buildout of approved Development of Regional Impact within the project’s areas of influence;

(2) full buildout of potential Developments of Regional Impact within the project’s area of influence (i.e., Developments of Regional Impact which have submitted an Application for Development Approval, DRIs which have received a binding letter, or DRIs which have entered into a preliminary development agreement);

(3) full buildout of other approved developments within the project’s area of influence (i.e., site plan, planned unit development, etc.) that generate 500 or more daily trips; and

(4) a yearly growth factor shall be determined for the impacts of projects located outside the development’s area of influence and a growth factor for vacant parcels inside the project’s area of influence that are not included in 1, 2, and 3. This factor shall be applied to the regional roads serving the project.

Policy 7.4.1.2: The time horizon for reviewing traffic impacts on the regional roadway network for a proposed development will be through the projected project buildout year.

Policy 7.4.1.3: On a case-by-case basis, acceptance of a timetable and commitment for construction of listed roadway improvements which is not concurrent with the timetable for construction of the project, but is instead deemed reasonable, may be allowed in the special case of major bridge crossings of water bodies, providing:
a. plans have been finalized and approved for construction of the required bridge or bridge capacity expansion prior to commencement of project construction;

b. the approved bridge improvements will be adequate to provide for objective Levels of Service;

c. construction of the bridge or bridge improvements is to be initiated within a reasonable time frame;

d. financing is committed for construction; and

e. the developer has agreed to pay a fair share of the bridge or bridge improvement costs, to be defined by the proportion of total bridge capacity which will be required to accommodate project traffic.

Policy 7.4.1.4: Encourage cooperation and coordination among transportation planning agencies in designing transportation methodologies for determining and mitigating impacts on transportation facilities of regional significance.
COORDINATION OUTLINE
1. Introduction

Unlike the local government comprehensive plans, the Strategic Regional Policy Plan (SRPP) is not implemented through a set of land development regulations and accompanied by a capital improvements program in order to meet the objectives established in the Plan. Instead the Regional Plan must be implemented as a result of Council’s program activities and through the consensus of local governments in the Region.

After a good deal of debate about the future role of Regional Planning Council’s in Florida’s overall planning and growth management process, the 1993 Legislature made a number of statutory changes which effect the Council’s. Of significance among those changes were the acknowledgment that the Regional Planning Council is Florida’s only multi-purpose regional entity that is in a position to plan for and coordinate intergovernmental solutions to growth-related problems on greater than local issues; and the requirement to develop a SRPP to replace the current Regional Comprehensive Policy Plan.

The ability of Council to carry out its responsibilities is very much intergovernmental in nature. Council provides technical assistance, shares information, offers dispute resolution, and carries out activities which require multijurisdictional efforts. The power of the SRPP is in its success in portraying regional/multi jurisdictional issues, and in proposing strategies to address the issues which are considered logical and feasible by local governments throughout the Region.

Although Regional Planning Council’s are primarily advisory in nature, the successful implementation of the Regional Plan can occur in a number of ways. Perhaps most importantly, the SRPP will be implemented as a result of successful implementation of local government comprehensive plans, which by Statute (Chapter 163) must be consistent with the Regional Plan. The Regional Plan is also implemented as a result of Council’s program activities, which are summarized in the following section. Finally, the Plan is implemented through the activities of other organizations and agencies, both public and private, if they consider the Regional Plan to present good solutions to identified problems.

2. Roles and Activities of Council

In order to assess the potential for the successful implementation of the SRPP, it is necessary to look at the current roles and activities of the Regional Planning Council and to determine if additional activities or programs are necessary. Before doing so, a brief description of the Region is provided.
a. Development and Growth Management in the Treasure Coast Region

While the four counties of the Region are different in some respects, they have a number of similarities. Historically each of the four counties which make up the Region had an economy based primarily on agriculture and secondarily on tourism. Today, although agriculture remains an important industry in the Region, the Region has taken on far more urban characteristics. In each county, urban growth occurred in coastal areas and expanded westward. In each county, urban expansion has displaced former agricultural lands. Agricultural activities have moved to the west, often into ecologically sensitive wetland habitats which dominate areas west of the coastal ridge.

Geographically, each county is located adjacent to the Atlantic Ocean and, therefore, all counties have problems and opportunities related to their coastal orientation. Common problems include: the threat of hurricanes, beach erosion, pressure to develop high hazard coastal areas, saltwater intrusion, potable water supply limitations, and rapid urbanization of coastal areas. Common opportunities include: the attractive power of beaches, estuaries and rivers for recreational fishing and boating, seaports for commerce, and a long-term potential for growth.

Environmentally the problems faced by each county within the Region are very similar. Demographic characteristics are similar, but not exact. In all counties within the Region, the seasonal aspects of tourism and agriculture create problems. In all of the counties, provision of services to a rapidly growing elderly population is a concern.

An important similarity that binds the counties of the Treasure Coast together is the opportunity that each has to avoid many of the problems and costs associated with growth through good planning. The Region has a commitment to address growth management problems and thereby realize the high quality of life that can come with well-planned growth.

The Treasure Coast Region is expected to experience continued growth in population into the next century. Currently the Region’s population is growing by 100 new permanent residents per day. Many of these individuals and families moving into the Region come for employment reasons; others intend for the Region to be their home during retirement years.

The attractive power of Florida and the Treasure Coast Region provides residents an opportunity to achieve and maintain a higher quality of life than could occur in the absence of growth potential. Whether this opportunity is realized or put to good advantage, however, depends upon how and to what extent growth leads to quality neighborhoods and communities.

b. General Roles and Responsibilities
The Treasure Coast Region includes 49 municipalities and 4 counties. The board of the Regional Planning Council is made up of 23 individuals, two-thirds of which are elected officials, representing member counties and cities, and one-third of which are appointed by the Governor.

Regional Planning Council’s are quite different than State agencies or special district. They perform unique and vital roles and have been acknowledged by the State to be the only multi-purpose entity suitable to address greater than local and multi-jurisdictional issues. Examples of these roles are:

1) **Provision of a Multijurisdictional Forum** - One very basic and unique function of Regional Planning Councils is the provision of a forum through which member local governments and other affected parties can discuss and resolve planning issues and problems which affect more than one jurisdiction, municipality, or county.

Land use decisions, policies, and plans made by one jurisdiction may sometimes interfere with the realization of planning goals within neighboring jurisdictions. Likewise large-scale developments proposed to occur within one jurisdiction may have negative impacts on neighboring jurisdictions and counties. Through a review of Local Government Comprehensive Plans, Regional Planning Councils provide a formal mechanism through which potential and real conflicts may be resolved at a reasonably local level. Through Council review of DRIs, elimination or mitigation of regional impacts can be assured. Both of these review functions allow for more local resolution of interjurisdictional conflicts than could occur in the absence of Regional Planning Councils. The first Regional Planning Councils to be established within Florida evolved from Councils of Government organized to meet this locally perceived need.

2) **Provision of a Multidisciplinary Issue Synthesis Function** - A second unique function of Regional Planning Councils is their ability and responsibility for coordinating and synthesizing diverse perspectives, expertise, and opinions into a comprehensive set of balanced recommendations for problem resolution.

Most State agencies must view problems from a relatively focused perspective. Perspective is typically limited to the administrative and regulatory responsibilities of the agency and infrequently includes a comprehensive evaluation of all relevant issues. This is not inappropriate; however, there is a need for the aggregation, synthesis, and coordination of comprehensive sources of information, a service which Regional Planning Councils are in a unique position to provide.
3) **Provision of a Regional Perspective** - Florida is an unusually diverse state economically, demographically, and ecologically. Wherever such differences occur, realization of objectives and goals requires a sensitivity to regional peculiarities. A third, unique characteristic of Regional Planning Councils is their regional perspective. Regional Planning Council’s, unlike other regional entities such as water management districts, can focus on the full range of issues that unify a Region. Each of the four counties that makes up the Treasure Coast has urban land uses concentrated along the coast and agricultural dominance to the west. All contain barrier islands, rivers, and beaches. All must be concerned about and plan for hurricane evacuation. All face the problem of displacement of agricultural lands for urban expansion. Based on public opinion surveys conducted for in the 1980’s, the citizens of the four counties uniformly share common concerns. If there are differences between the counties they are largely temporal. Some are rapidly urbanizing today; others will do so tomorrow. This difference is more unifying than harmful.

Regional Planning Councils also provide local governments an opportunity to address regional issues at a relatively local level. Regional issues typically cannot be adequately addressed by an individual local government. The Regional Planning Council provides an opportunity for local governments to come together to address such issues, so that disputes and litigation can be avoided.

4) **Provision for Efficiency and Economy in Problem Solving** - A fourth unique function of Regional Planning Councils is their ability to efficiently and economically address problems which confront several or all member local governments. Examples of such problems or issues which can be addressed at the regional level include hazardous waste management, hurricane evacuation, wetland protection, marina siting and the siting of land uses such as waste disposal/management facilities, correctional facilities, etc.

c. **Specific Activities of the Treasure Coast Regional Planning Council**

Council’s primary duties, responsibilities and activities are contained in Chapter 163, 186 and 380 of the Florida Statutes. These include:

1) **Assistance in State Planning** - Council assists the State by reviewing State Plans (i.e. State Comprehensive Plan, Florida Land Plan, etc.) and State agency Functional Plans for consistency with the Regional Plan. Council also assists local governments in understanding the contents and significance of State Plans.

2) **Strategic Regional Policy Plan** - Council is responsible for preparing, revising and updating the Strategic Policy Plan for the Treasure Coast
Region. Legislation calling for the preparation of a Strategic Regional Policy Plan was passed in 1993. The Plan must address affordable housing, economic development, emergency preparedness, natural resources of regional significance and regional transportation, and may address any other subject which relates to the particular needs and circumstances of the region as determined by the Regional Planning Council.

Minimum Rule criteria for the Strategic Regional Policy Plans were adopted in Chapter 27E-5 of the Florida Administrative Code. The Legislation emphasizes that the Plan must focus on regional, rather than local resources and facilities. The goals and policies in the plan are to be used to develop a coordinated program of regional action directed at resolving the identified problems and needs.

The Regional Planning Council is to seek the full cooperation and assistance of local governments to identify key regional resources and facilities. Standards included in the Strategic Plan may be used planning purposes only and not for permitting or regulatory purposes.

3) **Review of Local Government Comprehensive Plan and Plan Amendments** - As required by Chapter 163, Council is responsible for the review of all local government comprehensive plans and plan amendments for local governments in the Region. Council’s primary role is to review the plan/amendments for consistency with the goals and policies of the Regional Plan. Council is responsible for reviewing both proposed and adopted amendments. This is a significant responsibility. As an example, Council reviewed 627 comprehensive plan amendments in the region in Fiscal Year 1994-95.

4) **Developments of Regional Impact** - Council assists developers and local governments with DRI applications and agreements. Council reviews DRI applications and prepares reports which contain recommendations for consideration by local governments. Additionally, Council assists the State in annual DRI monitoring.

The Treasure Coast Regional Planning Council’s responsibilities for DRI review are outlined in Section 380.06, Florida Statutes. Large-scale DRIs are described in Section 380.06, Florida Statutes, and in Sections 27F-2.013 to 2.028, Florida Administrative Code. The Council’s review process is contained in Section 380.06, Florida Statutes; and 29K-2, Florida Administrative Code. Rules governing Council’s reviews of DRIs shall remain intact until modified, amended or replaced.

5) **Intergovernmental Coordination and Review** - Council assists federal and State agencies as well as local governments by conducting reviews of projects seeking federal assistance through the Intergovernmental
Coordination and Review Process. The Council conducts approximately eighty to ninety such reviews per year (Treasure Coast Regional Planning Council Review Procedures, Chapter 29K-3, Florida Administrative Code).

Council comments regarding projects under review shall be based on the Regional Plan. Recommendations will be made as necessary to encourage proposed projects to conform with the Plan.

6) Regional Dispute Resolution - Pursuant to Chapter 186.509 of the Florida Statutes, Council has adopted by rule (29K-4, Florida Administrative Code) a dispute resolution process to reconcile differences on planning and growth management issues between local governments, regional agencies, and private interests. The dispute resolution process provides for voluntary meetings among the disputing parties, initiation of voluntary mediation, initiation of arbitration or administrative or judicial action.

7) Hazardous Waste Mitigation, Emergency Preparedness and Response, Education - Since its inception, the Treasure Coast Regional Planning Council has actively assisted all levels of government in planning for emergencies. However, 1988 was a milestone year in that for the first time, Council provided full-time senior staffing for local government emergency preparedness planning assistance and technical support. This commitment included unprecedented support for the private sector as well. Today, Council’s support of and cooperation with local governments and the private sector is the main focus of its implementation strategies to further regional emergency preparedness.

Council staff served as local government liaison at the common center of the Florida Relief Center, the Hurricane Andrew recovery center set up at the South Florida Fairgrounds. After Hurricane Andrew, staff participated as a member of the Federal Emergency Management Agency’s Interagency Hazard Mitigation Team. In addition, staff currently represents Council as a member of the State Hazardous Materials Training Task Force, the State Comprehensive Emergency Management Plan Review Team, and the Martin County Environmental Crimes Commission.

Emergency Preparedness Projects

The Treasure Coast Regional Planning Council has a long history of working with local governments on projects developed to enhance the Region’s emergency preparedness. Some of these accomplishments include: Hurricanes: A Discussion of Forces and of Activity Along the Treasure Coast, 1982; Hurricane Evacuation Behavioral Study for the Treasure Coast, 1982; the Treasure Coast Hurricane Evacuation Study: Technical Data Report, 1983; the Treasure Coast Hurricane Evacuation Study Update, 1988; Florida District X Local Emergency Planning

Council has developed and administered emergency preparedness training programs for public sector employees throughout the Region. Examples include Hazardous Materials Emergency First Responder awareness level training 1993; Computer Aided Management of Emergency Operations (CAMEO™) database training, 1994; and Emergency Responder Incident Command System command level training, 1995. In addition to classroom training, Council staff have assisted local governments and private sector facilities in the development and implementation of many and diverse hazardous materials emergency exercises, comprehensive natural disaster and hazardous materials management plans, small quantity hazardous waste generator programs, and have appeared as guest speakers at several federal, State, local, and private sector seminars and workshops.

**Florida District X Local Emergency Planning Committee (LEPC)**

Under an agreement with the Department of Community Affairs, the Council serves as staff to the Florida District X Local Emergency Planning Committee (LEPC). The District X LEPC is comprised of Indian River, Martin, Palm Beach, and St. Lucie Counties and was chartered by the Governor in 1987. The LEPC is responsible for developing and administering certain provision of Title III of the Superfund Amendments and Reauthorization Act, commonly known as the federal Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986. Major provisions of EPCRA require that certain facilities report their chemical inventories, that detailed hazards analyses be performed at such facilities, and that this information be made available to the public upon request. In addition, the hazards analyses data is used to update the LEPC’s Emergency Plan for Hazardous Materials and as scenario material for hazardous materials emergency exercises. Council offices serve as the Region’s Community Contact Center and staff administers electronic and hard copy records of all EPCRA notifications and regional hazardous materials release notifications. Currently, Council comprehensive data base contains over 1,450 facilities subject to the requirements of EPCRA.

8) **Regional Information/State Data Center Affiliate** - Council gathers and distributes a wide variety of data and information. At present, most information is distributed upon request. However, the initiation of a regular
publication of data and statistics of relevance to a wide audience is anticipated. At present, Council serves as a State Data Center Affiliate under a program whereby Council receives a variety of printed and computer accessible data from the U.S. Census and other sources and makes the data available upon request. Council provided 1990 U.S. census data to many local governments in the region.

9) **Local Technical Assistance** - The responsibility to provide technical assistance to local governments and citizens is one of Council’s primary obligations. This technical assistance taken many forms, but primarily consists of:

- Serving as a clearinghouse and library for planning information and technical publication.
- Maintaining data and information of interest to local governments.
- Producing master plans as a result of planning charrettes upon request.
- Assistance in local government comprehensive plans.
- Workshops and meetings.
- Land acquisition/preservation programs
- Emergency Preparedness

10) **Power Plant and Transmission Line Reviews** - Council assists the State and local governments in power plant and transmission line siting reviews. In addition, Council focuses attention on impacts of regional significance. Council’s comments and recommendations shall be consistent with the Regional Comprehensive Policy Plan.

11) **Special Program Activities** - In any given year, Council may be involved in special programs designed to address regional issues and problems. As an example, during the 1994-95 year, some of these programs were:
- Coastal Zone Management

The Florida Coastal Zone Management Program was approved in 1981, under the federal Coastal Zone Management Act. The Program consists of a network of 28 Florida statutes administered by 11 state agencies and four of the five water management districts. Each agency is required to ensure that federal activities which occur within the state comply with the requirements of the Program statutes within its jurisdiction. The concept is referred to as federal consistency.

A missing component of the Florida Program, until recently, was the consistency of federal activities with local government comprehensive plans. However, in 1994, the State of Florida successfully petitioned the federal administrator (the National Oceanic and Atmospheric Administration-NOAA) to include Chapter 163 of the Florida Statutes (the Local Government Comprehensive Planning and Land Development Regulation Act) as part of the State Program.

The Regional Planning Council, under contract with the administrator of the State Program (Department of Community Affairs) now has the role of alerting local governments of federal projects/activities where consistency with the local government comprehensive plan may be an issue; and in turn, notify the Department of Community Affairs if there appear to be consistency issues. The Program is expected to be ongoing.

- Loxahatchee River Basin Wetland Planning Project

Council is participating in the Loxahatchee River Basin Wetland Planning Project, which is located in southern Martin and northern Palm Beach counties. The project is part of a planning process authorized by the Clean Water Act, which allows the U.S. Environmental Protection Agency in cooperation with the U.S. Army Corps of Engineers and state and local officials to collect information on wetlands. The purpose of the project is to identify the locations of wetlands in and near the Loxahatchee River Basin, and to provide information about the functions and values of these wetlands. Council is coordinating with local, state, and federal agencies to collect data and conduct a computerized analysis of the wetlands using the most recent satellite imagery available. These data will then be used in association with Soil Survey data and National Wetlands Inventory data to produce a series of maps using a Geographic Information System. The final product will be a planning document designed for use by the public and private sectors. The first draft of the final report is expected to be completed in 1997.

- Boat Facilities Siting Plan for Palm Beach County
Council recently completed preparation of a boat facility siting plan for Palm Beach County. This county-wide plan is an important component of the Manatee Protection Plan, which is required by the Governor and Cabinet in each of 13 counties known to have a high population of manatees. The boat facility siting plan identifies areas that are most desirable for the development of future boat facilities based on the evaluation of natural resources, manatee protection needs, and recreation and economic demands. The main goal of the plan is to minimize the number of manatees killed by boats. The Florida Department of Environmental Protection and the 24 local governments affected by the plan are considering formal adoption of the plan.

- Regional Attenuation Planning

Council serves as the host agency and is a participant on the Regional Attenuation Facility Task Force (RAFTF). The Task Force has been established for 90-days at the Direction of the Governor to, “study and make recommendations as to the most appropriate site and locations for one or more Regional Attenuation Facilities in Martin and St. Lucie County to address the much needed upland retention of freshwater based on the best scientific and engineering evidence available to meet the specifications established by the U.S. Army Corps of Engineers and the South Florida Water Management District.”

3. Preparation of the Strategic Regional Policy Plan

a. Public Participation Process Utilized in the Preparation of the SRPP

The public participation process which led to the preparation of the SRPP consisted to three processes or efforts:

(1) development of the vision for the future of the Region;

(2) interviews with elected officials, representatives of school boards, and other officials from the Region; and

(3) informal and formal public participation opportunities during the preparation of the SRPP.

A description of each of these efforts follows:

(1) How was the Vision developed?
The vision was developed over the course of four years. Council staff used several planning techniques to consult the citizens and the local governments of the Region:

(1) Planning and Design Charrettes for Local Governments.

- Staff organized the following planning and design charrettes:
  1992: Lake Worth, Jupiter Farms, Canal Point
  1993: Fellsmere, Boca Raton, Lake Worth, West Palm Beach
  1994: Boynton Beach, Lake Park, White City, South Martin County
  1995: Fort Pierce, Pahokee, Juno Beach
- Staff participated in the following charrettes or workshops organized by others:
  1994: North Palm Beach/South Martin County Forum
  1995: Port Salerno, Hobe Sound, Northwood Neighborhood, St. Lucie County Visioning

The earliest charrettes were held to provide technical assistance to local governments. When the legislature approved the preparation of SRPPs in 1993, council added a new focus to charrettes towards the development of a regional vision. Council believed that a regional vision would be developed most effectively if the citizens and the local governments were closely involved in its development, and that it would be most useful if it addressed specific problems as requested by the municipalities of the Region.

Many of the illustrations of the Future of the Region section were developed during Charrettes. They are original work prepared by council staff, sometimes with the assistance of consultants or local professionals who volunteered their work. All graphics were prepared in open door work sessions, often under the supervision of concerned citizens. They were presented to each local government and were accepted by councils and commissions. Some images represent projects that are under development or construction. Other renderings depict planning concepts designed to guide future policy decisions within the subject jurisdiction. Local governments chose what concepts they would use. Sometimes they asked staff’s opinion on issues of implementation, but the decision to adopt charrette recommendations was up to the local government. The process was informal and voluntary.

(2) Interviews

In preparation for developing the Strategic Regional Policy Plan (SRPP), Council staff conducted individual interviews during 1994 with approximately 75 local elected officials. These officials included Council members (elected and appointed), county commissioners, mayors of several municipalities, Sheriff Departments, and School Board staff.
The purpose of the interviews was to hear what local officials had to say about what should be addressed in the strategic plan and to listen to their major concerns, both local or regional in nature. The format of the interviews was informal. No structured list of questions was used. Those interviewed were encouraged to talk about other topics in addition to the five required elements: transportation, natural resources, economic development, housing, and emergency management. Comments were to remain anonymous. Each interview lasted approximately 1 1/2 hours. The meetings were not recorded except for notes taken by staff.

Concerns expressed by the elected officials ranged widely. Major areas of concern included regional economic development, water quality and stormwater pollution, how to deal with committed development and more growth, solid waste disposal needs, education (neighborhood schools, quality, perception, busing, inadequate facilities), transportation (mass transit, a regional approach), growth boundaries, agriculture’s future, how to work with FDOT, revitalization/redevelopment in older communities, and sprawl.

The concerns and interests expressed during the course of the interviews were summarized and a list of statements/comments as they relate to a specific topic area were prepared. The summary and list was provided to Council, to local governments and to a number of other persons who expressed an interest.

(3) Public Participation

Consistent with the requirements of Section 27E-5.005(1)(g) of the Florida Administrative Code, a public workshop was held within the Region during the early stages of plan formulation to describe the Regional Planning Effort and to receive input from the public regarding the plan or plan formulation and adoption processes. The public workshop was advertised in newspapers throughout the Region and was held in the Martin County Administration Building in Stuart on March 1, 1995. A second public workshop during the early states of plan formulation was scheduled and held on April 21, 1995, in conjunction with the TCRPC Regular Meeting in Stuart in Martin County. Again, the meeting was advertised in newspapers throughout the Region, and as with the March 1, 1995 meeting, a notice was sent separately to all 57 local governments in the Region.

The first draft regional plan was distributed to Council members, all persons on the Council meeting mailing list, and all persons who requested a copy in mid July, 1995. Prior to that time, Council staff held meetings with an informal committee containing representatives of Economic Development Councils and organizations from each of the four counties in order to obtain input on the Economic Development Element of the Plan. Meetings were held at the TCRPC Offices on June 26, July 6, and August 23.
In addition, a meeting was held at the TCRPC Offices for representatives of a number of environmental organizations, at their request, on August 8, 1995, after the initial distribution of the first draft SRPP. Council initiated monthly meetings of the Planning Directors from throughout the four-county region in January of 1995. At each of these meetings over the course of the development of the SRPP, an agenda item was devoted to discussion of the SRPP.

Council determined that it was appropriate to give local governments a special opportunity to provide input on the Regional Plan. Therefore, all local governments were invited to special presentation discussions held as follows:

August 9, 1995: For Palm Beach County local governments, in conjunction with a meeting of the County Intergovernmental Plan Amendment Review Committee, the meeting was in West Palm Beach.

August 10, 1995: For local governments in the northern three counties, the meeting was held in Fort Pierce.

Pursuant to Section 27E-5.005 (1)(b) public meetings were scheduled and held throughout the region to describe the content of the proposed plan submitted to the Executive Office of the Governor and to receive public comment regarding the proposed plan. The meetings were prominently advertised in newspapers of general circulation in the region. Although the Rule required only three (3) meetings, Council held six meetings as follows:

Tuesday, September 19, 1995  Room 101, County Administration Bldg
                          2300 Virginia Avenue
                          Fort Pierce

Wednesday, September 20, 1995  County Commission Chambers, 1st Fl
                               Martin County Administration Building
                               2401 S.E. Monterey Road
                               Stuart

Thursday, September 21, 1995  County Commission Chambers, 1st FL
                              Indian River County Administration Building
                              1840 25th Street
                              Vero Beach
During the course of SRPP preparation and submission to the Executive Office of the Governor, the SRPP was discussed at regular TCRPC meetings. The public had an opportunity to provide comments at the meetings.

b. **Cross Acceptance Process**

Section 186.505(22), Florida Statutes allows each regional planning council to establish a cross acceptance negotiation process with local governments which is intended to resolve inconsistencies between applicable local and regional plans. Participation by local governments is voluntary in such a process.

Although a good deal of discussion has occurred between the Florida Department of Community Affairs, the various Regional Planning Councils, and local governments regarding the appropriate format for such a process, no model process has yet been developed. The TCRPC has not determined the need for such a formal process at this point. There are no significant inconsistencies at this point between local and regional plans.

Council is involved in working with adjacent regional planning councils (South Florida, Southwest Florida, Central Florida, East Central Florida). Meetings are anticipated in the near future with each adjoining regional planning council to: 1) agree on an inventory of regional resources or issues which should be the subject for cross-acceptance review; and 2) establish a process by which the Councils can work together to best address the issues and preserve/protect the resources.

4. **Implementation of Specific Strategic Issue Areas**

a. **Future of the Region**

The Regional Plan charts general strategies that, if deemed desirable by individual counties and municipalities, will be implemented at the local level. Implementation may require changes in local development regulations and some
amendments to comprehensive plans, depending on the specific conditions and needs of each local government. Most often, such changes will be minor, as many of the ideas included in the Plan are often found in local planning documents. The most effective changes would address the emphasis and tone of the regulations, making them more proactive.

Local governments should determine particular areas of emphasis according to their own “visions” of the future but should always address planning problems in a comprehensive way. For example, if the rapid growth is a principal issue, a new approach toward the preservation of the countryside based on natural systems must be complemented by solid policies about the preferred form of development. If urban form and infrastructure were given less emphasis in the development process, few, if any, advantages would result from the application of desirable countryside policies. When plans shift from a regulatory mode to a proactive approach their successful implementation depends on a complete application of the “vision”

The Treasure Coast Regional Planning Council will assist local government in their efforts to implement the plan. Council will play two roles:

1. Provide technical assistance.
2. Review development proposals and comprehensive plans.

1. IMPLEMENTATION THROUGH TECHNICAL ASSISTANCE

The Treasure Coast Regional Planning Council receives a large number of requests for technical assistance from a variety of sectors, both private and public. Over 6,000 requests for information and assistance were recorded this year. Requests cover all areas which the Council is involved (e.g., census, planning, urban design, and process assistance, disaster preparedness, hazardous materials and waste management and reporting, etc.). Staff responses to these requests cover a range of effort on staffs part, from telephone responses to public presentations, workshops, and design charrettes. Of these requests, design charrettes have been the most effective method to assist local governments in the implementation of long-term planning ideas and should continue to be in the future a practical way to bring the planning concepts stated in the SRPP to fruition.

Sometimes, desirable planning ideas are not carried out at the local level because of the lack of effective implementation tools. In some cases, adopted tools prove ineffective. Other times, especially when staff and other resources are in short supply, the necessary tools are not developed. In both cases, outside planning expertise can be of assistance to a local government. In the past, Council staff has provided such assistance to local governments upon request. This type of technical assistance has been enthusiastically received and has had lasting effects on the quality of life of the Region’s residents.
CHARRETTE

The Treasure Coast Regional Planning Council has been working in the areas of downtown redevelopment, town planning, and urban design for several years and has been offering assistance to local governments in the Region upon request. The charrettes were organized and staffed to help solve local planning problems and to implement the general planning ideas that were used in preparation of the “Future of the Region” section of the SRPP. All the charrettes were held before or during the elaboration of the first draft of the SRPP. The lessons learned from working with hundreds of private citizens and public officials were an invaluable input in the development and articulation of the general planning principles.

The ideas included in the SRPP, therefore, were developed during a long and intense process which allowed countless opportunities to check conclusions and proposed projects against the realities of the market place, the complexities of the local regulatory environment and the opinions of the citizenry.

STRATEGIC POLICIES

The combined effect of the charrettes will contribute to the implementation of the strategic policies. Many regional policies can be implemented step by step by the municipalities and counties of the Region because each redevelopment plan becomes part of a greater regional scheme. Together, many local plans that share a common conceptual origin will complement each other and will have a cumulative impact on the quality of life of the citizens and the economy of the Region.

The charrette process that led to the development of some of the SRPP’s ideas should be continued. It has proven to be one of the most constructive ways to assist local governments in the implementation of regional policies. Having an adopted Strategic Plan will make Council’s technical assistance efforts more effective, as the goals and policies are clearly stated and the experience of three years of charrettes has allowed considerable fine tuning. Of course, no local government should be compelled to have a charrette. This type of technical assistance should remain voluntary and should be initiated at the local level.
2. IMPLEMENTATION THROUGH THE REVIEW OF DEVELOPMENT PROPOSALS AND COMPREHENSIVE PLANS

REVIEW OF COMPREHENSIVE PLANS

The review of local government comprehensive plan amendments should continue to be one of the Council’s primary responsibilities. With the adoption of the recommendations of the Environmental Land Management Study Committee (ELMS III) by the 1993 Legislature, Council’s review function has been redefined. The Council’s review of plan amendments now takes place within the guidelines established by the following criteria:

- Review of amendments for consistency with Council’s Strategic Regional Policy Plan for the Treasure Coast Region.
- Review of amendments for extra-jurisdictional impacts inconsistent with the comprehensive plan of affected local government; and
- Review and recommend, pursuant to Section 163.3184(6)(a), Florida Statutes, the necessity of review by the Department of Community Affairs.

DEVELOPMENT OF REGIONAL IMPACT REVIEW

The Development of Regional Impact (DRI) review process was created by the state legislature in 1973 to provide State, regional and local agencies the opportunity to evaluate the impacts of large-scale development projects. Council’s involvement has included a determination of the facilities and services, such as major roads, sewer and drainage systems, which will be needed to accommodate these projects. The potential impacts of each project on adjacent governmental jurisdictions and on regionally-significant natural resources are also reviewed by the Council. After coordination with affected governmental agencies to ensure that those agencies’ concerns are identified, recommendations are provided by Council to the local jurisdiction for the project.

The public sector’s greatest influence in proposed projects occurs at the site planning level. Most of the time, site plan review is done by the local government. In the largest projects, the DRI, some review occurs at the regional level. In the past, regional plans have not emphasized the physical plan in the review of DRI’s. The strongest regulatory policies tended to address the environment and traffic, both important areas but insufficient to guarantee planning of the highest quality.

The SRPP policies shift the focus from regulation towards strategy. Such change in emphasis will have a positive effect. Future DRI review should be more effective and valuable for all the parties involved. The greater flexibility of the Plan will
encourage more creative solutions from the development and more constructive reviews from Council.

b. Affordable Housing

The Regional Comprehensive Policy Plan which guided the activities of the TCRPC from 1986 until the present, indicated that a high quality of life was dependent on affordable, safe and clean housing close to employment opportunities and necessary services. Prior government involvement in the provision of housing had been limited to the indigent and low-income, but the cost of housing and interest rates had combined to create difficulty even for moderate-income families. There was a severe shortage of rental housing. Those most affected by the shortage of affordable housing were the elderly on fixed-incomes, agricultural and migrant workers, those with insufficient education or technical skills, and Caribbean migrants.

Better identification and definition of the affordable housing problem was complicated by the lack of a decent data base. The root causes, however, appear to be the elimination of existing affordable housing (much has been demolished and the land redeveloped), the immigration of very poor people, and insufficient income and income growth. Federal policy permitting indigent refugees from the Caribbean is not supported by Federal financial assistance. From a growth management perspective, residents have been forced to devote too much income to the cost of transportation and local governments have not recognized and assessed the full costs of growth.

Goals were established to assure that: 1) adequate and affordable housing be available, and 2) that home purchase opportunities for first time buyers be increased. Policies to implement these goals were general in nature (provisions to meet needs will be made, substandard housing was to be restored and rehabilitated where feasible, special efforts should be to assist refugees and others with insufficient income, and public/private demonstration projects were encouraged). Two good policies dealing with housing in proximity to employment opportunities and necessary services, and the integration of alternative housing facilities (care facilities, group homes, etc.) into residential areas have been utilized frequently by the Council in reviewing developments of regional impact, local government comprehensive plan amendments, and applications for federal funding.

Two excellent on-going planning activities were recommended:

1) develop a regional housing data base; and

2) establish and maintain a regional affordable housing task force.
Due to financial and policy constraints, these on-going planning activities have not been carried out.

Many of the issues identified in the 1987 Plan remain of concern in 1995. Many of the same problems exist. Impacts on affordable housing or lack thereof are still reviewed through the DRI and local comprehensive plan amendment process. Council should also carry out the following:

- Work with local governments to create a regulatory framework for land development regulations which is conducive to the production of affordable housing.
- Encourage the location of affordable housing in proximity to employment in the review of DRIs, local government plan amendments, and in other activities.
- Work with local governments on strategies to stabilize and revitalize existing neighborhoods and to design new neighborhoods which contain urban design components which make neighborhoods prosper and last.
- Work with local governments and no-profit organizations when appropriate, to help them address the special housing needs of agricultural workers.
- Carry out master plan technical assistance to local governments upon request. Such master plans should thoroughly address housing issues.

c. Economic Development

Council’s implementation of Regional Goals, Strategies and Policies will include the following:

- Council staff will continue to work closely with the Glades redevelopment coordinator to assist in enhancing the Glades communities by helping to conduct a Glades regional planning charrette in early 1996.
- Council staff will continue to participate in the Greater Lake Okeechobee Tourism Alliance and is coordinating a regional planning workshop that will focus on establishing the greater Lake Okeechobee region as an important nature-based tourism designation.
- In partnership with the private and public agricultural representatives and local governments, Council staff will assist in coordinating an agricultural visioning workshop that will focus on identifying agricultural opportunities
and provide recommendations that would create a more diversified and sustainable agricultural industry in the Region.

- Through planning charrettes and working with the private sector, Council staff will continue to encourage compact development and redevelopment, and identify infill sites that provide redevelopment opportunities.

- In partnership with the private sector and community organizations, and local government representatives, Council staff will coordinate a Special Regional Policy Study group that would investigate 1) The development of a tiered system of impact fees; 2) Concurrence relief for certain redevelopment projects; 3) Impact fee reductions for infill and preferred forms of development; 4) Tax abatement options that would grant tax exemption to qualified restoration programs; 5) Examine a more land value-based tax assessment system that would encourage homeowners to maintain and improve their properties without concern for higher taxes; 6) Recommend available state, local incentive programs that would best meet the needs of the Region.

- In partnership with the private sector, educators, local and state transportation representatives, Council staff will assist in creating a Linkages Study Committee that would investigate ways to improve multi-modal transportation opportunities, provide better transportation linkages between workplace and educational facilities in the Region, and create education/training support programs and business-educational programs that would assist the working population interested in seeking further education and benefit existing businesses and encourage new businesses to the locate in the Region.

- In partnership with the private economic sector, education and local governments, Council will coordinate and help facilitate a County/Regional Economic Visioning Workshop that will focus on developing a regional consensus on how the Region wants to grow economically, and develop strategies on how implement Workshop recommendations.

- Council staff will continue to meet with the U.S. Commerce Department Representative in preparation of developing a regional economic development district.

d. **Education**

Traditionally, Council has not been closely involved in matters pertaining to the location of public schools in the Region, other than through the DRI process. The School Districts prepare and adopt facility plans, but Council does not have a role of reviewing and commenting on those plans.
During the preparation of the SRPP, Council learned that there is a good deal of interest at the School Board staff level in sharing information and experience in the school siting process. If considered appropriate by the School Districts, the Regional Planning Council should organize a four county forum for the purpose of exchange of information and ideas on the issues of school siting and its relationship to community planning.

e. Emergency Preparedness

Council staff are currently involved with projects designed to further the emergency preparedness goals and policies of the SRPP. Council staff serves as a member of the Treasure Coast Regional Disaster Recovery Task Force which meets to develop strategies that will facilitate regional recovery in the event of a major catastrophe. A member county has requested that Council become involved in the development and direction of a regional disaster recovery center and has called for a series of meetings with other member counties and municipalities to that effect. Member counties have requested that staff provide technical assistance in the development of their Comprehensive Emergency Management Plans.

In order to maintain consistency with the goals and policies as outlined under the SRPP, Council might consider the following projects to further develop regional emergency preparedness:

Appoint a Regional Emergency Preparedness Committee (formalize the Treasure Coast Regional Disaster Recovery Task Force, or establish a similar organization);

Develop a program to assist regional health care facilities in planning for and establishing adequate capabilities to provide mass care for victims of natural disasters or hazardous materials incidents;

Institute a regional planning policy task force comprised of community and emergency planners to develop strategies designed to specifically address mitigation of development impacts on emergency preparedness. Such strategies
would be incorporated into local government comprehensive plans and be rigidly adhered to;

Conduct an assessment of regional coastal high hazard areas, both developed and undeveloped, to determine a priority acquisition property listing as a key component to post-disaster redevelopment mitigation; and

Develop a program to aid local governments in locating pre-disaster mitigation assistance grant and developing qualifying programs.

f. **Natural Resources of Regional Significance**

The goals, strategies, and policies related to Natural Resources of Regional Significance are implemented through formal and informal review of proposed projects, and through the provision of technical assistance to public and private sectors. Impacts to natural resources are analyzed on a regular basis during review of the following types of projects and plans:

- Intergovernmental Coordination and Review Projects
- Local Government Comprehensive Plan Amendments
- Development of Regional Impact Applications
- Ten-Year Development Site Plans
- Transmission Line Siting Applications
- Power Plant Siting Certification Applications

The following are examples of technical assistance activities that contribute to implementation of the Natural Resources of Regional Significance section of the plan:

- Serve on steering committee for State Aquatic Preserve Support Organization.
- Serve on highway technical advisory committees.
- Serve on regional and local water supply planning committees.
- Serve on local government land acquisition committees to purchase environmentally sensitive land.
- Serve on the Florida Communities Trust advisory committee.
- Serve on the Loxahatchee River Management Coordinating Council.
- Participate in the Loxahatchee River Basin Wetland Planning Project.
- Serve on the Loxahatchee Greenways Task Force.
- Serve on the Palm Beach County Natural Areas Management Advisory Committee.
- Serve on the Regional Attenuation Facility Task Force.
- Prepare boat facility siting plans for local governments.

g. **Regional Transportation**
Historically, Council has been active in the area of transportation. Transportation impacts are regularly assessed through the DRI and local comprehensive plan/amendment review process. Council will also have continuing opportunities to positively shape regional transportation planning, programs and projects through its participation in the Intergovernmental Coordination and Review (ICR) process and through its dispute resolution processes. Council staff has also been active in participating in the review/development of transportation rules at the State level, serving on and interacting with MPO technical advisory committees and participating on other transportation committees and task forces regarding corridor planning and aviation system planning.

An important emphasis of the SRPP is on improving the integration of transportation planning and land use. As a way of reducing automobile dependency and achieving several other regional benefits related to air quality, affordable housing, infrastructure costs, public safety, infill and redevelopment, etc. Several goals, strategies and policies are contained in the Plan to encourage this effort with special emphasis on improving opportunities for developing public transportation corridors and systems in the Region.

State legislation in 1993 specifically provided the Council the authority to coordinate land development and transportation policies in a manner that fosters regionwide transportation system (Sec. 186.505, F.S.). In response to this and other related statutory changes Council has also recommended, within the SRPP, minimum density guidelines for development along designated public transportation corridors and identified investment strategies for providing transportation infrastructure where growth is desired.

Currently, both Chapters 163 and 380, F.S. include provisions aimed at facilitating the development or redevelopment of compact areas with mixed and higher density uses. Both the Future of the Region and Regional Transportation elements of the SRPP provide clear instructions and incentives for encouraging mixed and compact forms of development at appropriate locations.

A specific option for implementing transportation/land use concepts expressed in the SRPP is continuing Council’s technical assistance role in sponsoring public planning charrettes. The SRPP also contains strategies which echo Council’s initiatives to improve Tri-Rail services and add commuter and passenger services on the FEC rail lines to the east.

There is currently an effort underway to establish a multi-agency task force to help implement in the South Florida and Treasure Coast Region the concept of integration of multi-modalism, intermodalism and land use focusing on selected regional multi-modal transportation corridors, which link urban core areas and coastal town, cities and other regional attractions.
Council may explore and promote, through a multi-agency task force, desirable patterns of development and redevelopment along selected regional multi-modal corridors, including significantly higher public transit services and attractive urban living environment to contribute to a more sustainable and efficient regional development patterns.

4. Intergovernmental Coordination

Through its various roles and activities, the Regional Planning Council plays a key role in intergovernmental coordination. Examples of this role are found throughout the previous discussion. Council also carries out the following special activities:

a. Review of local government comprehensive plan amendments - Council plays a critical role by alerting local governments of plan amendments in adjoining or nearby jurisdictions which may have multi-jurisdictional interest or impacts. Council also contacts municipalities, counties and regional planning councils outside the region when the location or scope of the amendment is such that those jurisdictions may have concerns. In addition, Council requests comments from school districts, solid waste authorities, Metropolitan Planning Organizations, etc. Comments are included in Council’s report to the State, and often form the basis for an objection or comment.

b. Provision of information - Council provides information, normally by memorandum to all local governments in the Region, regarding key legislative or rule changes which are likely to be relevant.

c. Coastal Zone Management - Under a new (1994-95) program, Council alerts local governments of federal or federally funded projects or programs on which there may be consistency issues with local government comprehensive plans.

d. Transportation Planning - A Council staff member is assigned to attend and participate if appropriate at meetings of each of the four Metropolitan Planning Organizations (MPO’s) in the Region. A staff member is a voting member of the Martin County Technical Advisory Committee.

e. Citrus Highway - Staff is a member of the Citrus Highway Technical Advisory Committee which has investigated the feasibility of a farm to market road through the three northern counties of the Region.

f. Preservation of Natural Lands - Staff is assigned to attend the meetings of committees in each of the four counties which work to identify and preserve or protect environmentally sensitive lands. Staff is a committee member, by request of the County, in two of the four counties.
g. Dispute Resolution - As required by the Florida Legislative, Council adopted a dispute resolution rule during 1994. Council stands ready to assist local governments in the Region in resolving disputes.

h. Coordination regarding resource protection, management, and preservation - Council coordinates with a number of federal and state agencies and water management districts to support the implementation of resource protection and management plans.

South Florida Water Management District
and/or
St. Johns River Water Management District
   Upper East Coast Water Supply Plan
   Lower East Coast Regional Water Supply Plan
   SWIM Plan for the Indian River Lagoon

Florida Department of Environmental Protection
and
South Florida Water Management District
   Loxahatchee River National Wild and Scenic River Management Plan

U.S. Environmental Protection Agency
   Indian River Lagoon Comprehensive Conservation and Management Plan

Florida Department of Environmental Protection
   Indian River Lagoon Aquatic Preserve Management Plans
   North Fork - St. Lucie River Aquatic Preserve Management Plan
   Jonathan Dickinson and Sebastian Inlet State Park Management Plans
   St. Lucie Inlet State Preserve Management Plan
   Savanna State Reserve Management Plan

Department of Community Affairs
   Hutchinson Island Resource Planning and Management Plan
EFFECTS AND COSTS OF SPRAWL
Appendix B

EFFECTS AND COSTS OF SPRAWL

The problems with sprawl can be summarized under two categories:

A. Sprawl is expensive.
B. Sprawl decreases the region’s quality of life.

A. SPRAWL IS EXPENSIVE

Sprawl is more expensive than alternative patterns of development. The following costs are the direct result of sprawl and would be avoided by using an alternative development form.

COSTS TO THE TAXPAYERS

Building and maintaining highways.
Highways built to support inefficient development patterns place an avoidable burden on public finances. Every dollar wasted on poorly planned roads that service sprawling subdivisions could have been spent on schools, parks, libraries, shade trees along sidewalks, public art, public transit or it could have simply been returned to the taxpayers in the form of lower taxes.

Building poorly located schools and transporting children to class.
The poor layout of sprawl subdivisions increases transportation costs, as longer and less direct routes are necessary. In addition, children who could walk to school in a well-planned neighborhoods are unable to reach schools located within sprawl projects. Many times, there are no sidewalks or bike lanes. Often, traffic conditions (also a result of the poor design of sprawl projects) are unsafe. Therefore, more children must be bused longer distances, an expense that if prevented could be allocated to other educational activities.

Costs of social problems resulting from neglected or abandoned neighborhoods.
Sprawl may not cause social problems, but it does aggravate them.

Environmental costs.
Sprawl causes the unnecessary destruction of the natural environment. The destruction of wetlands and uplands that serve as habitat to endangered species has an effect on the quality of life of the region. The destruction of land that recharges the aquifers affects the region’s ability to sustain a high quality, affordable water supply.
**Costs to Businesses**

*Sprawl makes the Region less desirable.*
The business climate is affected by the physical development of an area. When an area is poorly planned, it is less attractive to investors. In addition to taking into account direct costs, businesses relocate to areas that provide a good quality of life to employees. Sprawl may compete by providing less expensive land, but that is insufficient to attract quality businesses to an area.

*Increase of direct business costs.*
The mismatch of land uses and long distances increase transportation costs.

*High labor costs*
Jobs and workers are not close to each other. This is a particularly difficult problem for low skill service jobs in suburbia. The people who want those jobs live somewhere else and often cannot afford the transportation costs to get to the jobs.

*Waste of investment in older areas*
Public investments in utilities and water and sewer are underused. Private investments in older areas are abandoned.

**Cost to Suburban Residents**

*Cost of car use and ownership.*
Multiple car ownership is an avoidable expense. The absolute need of an automobile for every trip (job, school, grocery store, movies, visit of friends, etc.) is a direct result of sprawl. Two and three car families are the norm. Such an extraordinary expense affects the affordability of housing.

*Costs of new infrastructure*
Sprawl requires new roads, water, sewer, power lines, etc. As concluded in several analyses, (RECC 1974, Roberts 1979, Frank 1989, Duncan et. al, 1989 and Burchell, 1992), and confirmed by more recent experience in a number of communities, there are substantial differences in infrastructure costs between “compact” and “sprawl” development patterns, with more compact higher-density development resulting in an overall cost reduction of as much as 44 to 50 percent. Most of those costs are passed on to the house buyer, decreasing the affordability of housing by keeping taxes high. Still, most residential projects do not pay their own costs. Impact fees are kept artificially low, and taxes from non-residential projects are used to help offset some of the infrastructure costs.
COSTS TO RESIDENTS OF OLDER NEIGHBORHOODS

Loss of jobs
Downtown employers move out, as it becomes increasingly difficult to compete with sprawl locations. Jobs relocate far away from housing, increasing costs for every one.

Loss of economic stability
When sprawl competes unfairly with older neighborhoods, long time businesses close and unemployed workers relocate. These effects accelerate the decline of established cities.

Waste of existing infrastructure
When existing infrastructure is underused, it becomes more expensive to maintain. Sometimes, maintenance is deferred, which compounds the decay over time. As downtowns sit empty, new infrastructure continues to be built to service sprawl projects.

COSTS TO AGRICULTURE

Loss of land
Sprawl consumes enormous quantities of land. This is inevitable because the primary amenities a sprawl project delivers are land and low densities. Neighborhoods, on the other hand, deliver complete communities and do not need as much land. If sprawl is unchecked, excessive amounts of land are developed for suburban uses and less land remains for agriculture.

Loss in productivity
As sprawl appears next to agricultural fields, normal farming practices are affected. For example, sprawl residents often object to the spraying of groves adjacent to their property.

Loss of water
Sprawl projects consume water in locations where it could be used for agriculture or for natural systems.

Long-term uncertainty
The random conversion of agricultural land to sprawl projects affects agriculture.

COSTS TO THE ENVIRONMENT

Loss of land
As development impacts compound, new sprawl projects require increasing amounts of land to preserve a suburban life style. For example, in development that follows a sprawling pattern, lower housing densities translate into lesser traffic impacts. Therefore, in order to meet concurrency requirements, more and more land is needed to accommodate people at increasingly lower densities.
Pollution of air
Sprawl maximizes automobile dependence. Currently, more than half of the air pollution of the Region comes from cars. The inefficient layout of sprawl projects make residents drive longer distances more often.

Waste of water
Unless special open space and landscaping procedures are utilized, sprawling development consumes a great deal of water. If large lawn areas are utilized in yards, rights-of-way, median areas, etc., a great deal of water is necessary for irrigation.

Waste of energy
Sprawl maximizes auto dependency, increases trip length, severely limits public transit options, and increases vehicle miles traveled in the Region. Compact urban forms of development are 30 percent more energy efficient over the long term than sprawling patterns of development. The United States consumes more petroleum for transportation alone than it produces in total. This increases the Region’s vulnerability to fuel price increases and supply interruptions. It also assures that the security of United States oil imports will continue to require political and military expenditures.

B. SPRAWL DEGRADES THE REGION’S QUALITY OF LIFE

Effects on Children

Children must be driven everywhere.
A child’s life is severely limited in a sprawl area. Most of the time, he cannot go to school, library, park, visit friends, etc. by himself. This creates an uncomfortable dependency that is disliked by the child and by the driver, who is often a working parent.

Busing
Because sprawl does not create complete communities, children must be bused to distant schools. Busing severs friendships (children who live in close proximity to each other are often bussed to different schools) impedes after school activities (children cannot miss the bus) and disconnects parents from the educational process (schools are large bureaucratic establishments located far away from a neighborhood).

In addition, busing wastes the children’s time. During the average school year (180 days) a child who spends one hour in a bus to go to school and one hour to return (not unusual times, taking into account that the bus must make several stops along the way) will spend 360 hours or 45 eight hour days on the bus. Assuming the child is bussed for 12 years, the total amount of time wasted in a bus will be 4,320 hours or about 1.5 years of eight-hour days. Those wasted 4,000 hours occur at prime times: early in the morning, when parents are home and could interact with the child, and early in the afternoon, when the child could expand his school day with extracurricular activities.
The social problems busing attempts to correct are directly traceable to sprawl. Generally, children who live in stable urban areas are not bused as much because their neighborhoods tend to be more balanced racially.

**EFFECTS ON THE ELDERLY**

*Older people must drive.*
Life in sprawl is unthinkable without a car. When people retire, many are sufficiently young and healthy to function in sprawl. As their strength and eye sight weaken, they must hold to their driving license as long as they can. Once they are unable to drive, their quality of life plummets. As there is no public transportation, moving around becomes a major ordeal. This is a serious problem in the Region: about 30 percent of the population in the region is at least 60 years old and 28,800 people were over 85 in 1993.

*Older people must move to other types of communities.*
When older people cannot drive, they must move. This can have a devastating effect on their quality of life.

**EFFECTS ON GENERAL POPULATION**

*Waste of valuable time during commute and errands.*
The time before and after business hours is very valuable for a family. That is when children are at home (only the very young, school-age children are on the bus). That is when parents are in their cars, commuting to work or running errands. The loss of several hours a week of interaction with children is a direct consequence of poor planning.

**EFFECTS ON EXISTING CITIES, TOWNS AND VILLAGES**

*Sprawl kills older urban cores.*
Sprawl has contributed to the decline of urban America. Towns have always been complex entities which included a variety of land uses: houses, stores, offices, schools, civic buildings, churches, apartments above the store, small inns, restaurants, parks and squares, etc. Sprawl breaks apart the town’s components and optimizes those that are most profitable. Public and civic uses become superfluous, and design options only follow business criteria. Sprawl competes on unequal terms, destroys the town and delivers a vastly inferior product.

**EFFECTS ON SUBURBIA**

*Sprawl destroys the suburban ideal.*
Suburbia enjoyed a long history before it was overtaken by sprawl. Originally, suburbs were designed as complete neighborhoods (Forest Hills, NY, Camden Hill, NJ, Coral Gables, FL, etc.). Those early suburban projects are desirable places to live that function efficiently. Sprawl is very different.
Sprawl creates slums.
Although urban decay is generally associated with the older cities, suburbia is beginning to show similar effects. Abandoned shopping centers and unkempt vacant single family houses are typical conditions within older sprawl projects.

Sprawl makes siting “locally unpopular land use” (e.g., landfills, major electrical utility transmission lines, recycling facilities, etc.) unpopular and more difficult.

Sprawl consumes excessively large amounts of land, spread out over vast areas, and creates no clear division or break between “town” and “country”. Locally unpopular land uses (LULUS) are often best relegated to sites that are away from people. Because sprawling patterns of development scatter people across the countryside and often unnecessarily leap into unpopulated rural areas, LULUS sites are becoming increasingly difficult and expensive to find. As a result, LULUS often have to be sited at less than ideal locations which either impact the quality of life of existing residents or increase the cost to provide services.
GLOSSARY

Accessory Apartment - A separate living unit, within a principal structure, that may have separate bathroom and cooking facilities, but which is clearly accessory to the principal use.

Advance Acquisition - The acquisition of real property rights for use on a designated transportation corridor in advance of the fiscal year in which right of way acquisition would normally occur. This is done to take advantage of favorable prices and/or the availability of land and to preclude further development that would make the property more costly to the public.

Affordable - Means that monthly rents or mortgage payments, including taxes, insurance, and utilities, do not exceed 30 percent of the amount which represents the percentage of median adjusted gross annual income for households classified as very low, low and moderate income.

Algal Bed - A marine and estuarine natural community dominated by various species of algae attached to the bottom.

American Farmland Trust - A non profit membership organization that is dedicated to stopping the loss of productive farming and promoting farming practices that lead to a healthy environment.

Annual Unemployment Rate - The average unemployment rate for a given year.

Aquifer - An underground geologic formation holding ground water.

Aquifer Storage and Recovery - A water storage technique whereby surface water is pumped underground and stored in an aquifer until retrieved at a later time.

Atlantic Coastal Ridge - An area of higher elevation and well-drained sandy soils, which closely parallels the edge of the mainland through the Region.

Backlog - As used in transportation planning, it is an accumulation of traffic demand on a transportation facility that has yet to be satisfied through facility expansion, construction or other means.

Barrier Island - A relatively narrow strip of land extending along the shoreline, which separates the ocean from the coastal lagoon system.

Barrier Island - Coastal lands which are physically separated from the mainland by salt or brackish water and typically composed of sand shaped by strong currents, wind and wave action.
**Basin Marsh** - A shallow herbaceous or shrubby wetland situated in a relatively large and irregular shaped basin.

**Beach** - A marine and estuarine natural community consisting of unconsolidated sandy substrate occurring along the shoreline.

**Beach Dune** - A coastal upland community composed of a sandy foreshore and upper beach that are sparsely to densely vegetated.

**Benthic Community** - An association of plant and animal populations occurring at or near the bottom substrate of a waterbody.

**Bicycle or Pedestrian Facility** - Any lane, path, or walkway which is designated for bicycle travel or foot travel. Roadways which meet criteria engineering standards such as wide outside travel lanes are also considered to be bicycle facilities.

**Biscayne Aquifer** - Name of the surficial aquifer occurring in southeastern Palm Beach County and other counties to the south.

**Blackwater Stream** - A natural river system originating in sandy lowlands where extensive wetlands and organic soils function as reservoirs, collecting rainfall and discharging it slowly to the stream.

**Blighted Area** - An area characterized by some or all of the following: deteriorating and/or abandoned buildings, inadequate or missing public or community services, vacant land with debris, litter, lack of sanitation facilities, trash and junk accumulation, and environmental nuisances such as noise, heavy traffic and odors.

**Building Type** - General classification of buildings based on similarity of urban design and architecture (i.e. courtyard type, side yard type, etc.) and regardless of use or function.

**Capital Improvement Element (CIE)** - The portion of the local comprehensive plan that sets a time frame for capital improvements to be completed in order to meet concurrency requirements.

**Capital Improvement Programs** - A timetable or schedule of future capital improvements to be carried out during a specific period and listed in order of priority, together with cost estimates and the anticipated means for financing each project.

**Carpool, Carpooling** - A single vehicle, share-the expense method of transportation for two or more individuals who regularly travel together to a common destination.

**Central Business District** - The core within a city usually containing: retail uses; governmental offices; service uses; professional; cultural; recreation; and entertainment
establishments and uses; residences; hotels and motels; appropriate industrial activities; and transportation facilities.

City - Planned and managed aggregation of neighborhoods and districts. A city is composed of several districts (i.e. a downtown, industrial, university, etc.) and of many neighborhoods.

Clearance Time - The time required to clear all roadways of all vehicles evacuating in response to a hurricane event. Clearance time begins when the first vehicle enters the road network (as defined by a hurricane evacuation behavioral response curve) and ends when the last evacuating vehicles reach an assumed point of safety.

Coastal High Hazard Area - Any area which historically has experienced destruction or severe damage, or is scientifically predicted to experience such damage from storm surge waves, erosion, or other manifestations of rapidly moving or driven water. Defined under Rule 9J-5.003(14), Florida Administrative Code, for local government comprehensive plan purposes as the evacuation zone for a Category 1 hurricane as established in the regional hurricane evacuation study.

Coastal Strand - An upland natural community characterized by stabilized, wind-deposited coastal dunes that are vegetated with a dense thicket of salt-tolerant shrubs.

Commercial/Service Airport - Airports which provide scheduled passenger services by an air carrier certified by the Federal Aviation Administration.

Community Design - Physical characteristics of one or several neighborhoods or districts.

Comprehensive Emergency Management - The practice by any government to capably plan for, manage, and recover from all types of emergencies and disasters by coordinating the actions of many organizations and agencies.

Concurrency - As used in growth management, the requirement that public facilities and services needed to support development shall be available at the same time the impacts of such development will occur.

Consolidated Substrate - A marine and estuarine natural community consisting of solidified rock or shell conglomerates situated in expansive open areas of subtidal, intertidal, and supratidal zones which lack dense populations of sessile plant and animal species.

Coral Reef - A marine and estuarine natural community characterized as an expansive conglomerate of hard, sessile, limestone-building coral occurring in warm subtidal waters.
**Cottage Home** - A small, detached dwelling unit, normally less than 600 square feet in size, located on the same lot as a principle residential unit.

**Council** - The Treasure Coast Regional Planning Council, created pursuant to Section 186.504, Florida Statutes.

**Countryside** - General term that describes the combined function, form and design of non-urban areas (i.e. natural preserves, agricultural fields, reservoirs, etc.).

**Cultural Facilities** - Establishments such as museums, art galleries, botanical and zoological gardens of an historic, educational or cultural interest.

**Deepwater** - Permanent flooded aquatic systems such as a lake, river, estuary, or ocean.

**Density Bonus** - A system whereby permitted density or intensity can be increased in return for the construction of housing units affordable to low and moderate income systems.

**Depression Marsh** - A shallow, isolated wetland, which is usually a rounded depression in sandy substrate with herbaceous vegetation often in concentric bands.

**Desalination** - The process whereby salt is removed from sea water or brackish water.

**Designated Corridor** - Major transportation routes designated in State, local, or regional plans for the movement of people and goals by one or more transportation options (see Transportation Corridor).

**Distressed Communities** - Urban and rural communities often characterized by high ratios of unemployment, disinvestment, high vacancy rates, business failures, etc. Such communities find it financially difficult to provide basic services to their citizens.

**District** - Area within a city, town or village that is specialized in terms of function (e.g. downtown or industrial areas). While districts may also include a variety of uses, they are not self-sufficient. Instead, they provide a place for activities that would not fit well within a neighborhood.

**Dome Swamp** - A shallow, isolated, forested wetland, which is usually a circular depression that has a domed profile because smaller trees such as cypress grow near the outer edge and bigger trees grow in the center.

**Dry Prairie** - An upland natural community characterized as a flat nearly treeless plain with a dense ground cover of wiregrass, saw palmetto, and other grasses, herbs, and low shrubs.

**Durable Goods** - Manufactured products designed to be durable such as appliances and automobiles.
**Eco-tourism** - A nature-based tourism activity that focuses on the marketing of the environment, education of the natural resources and the experience of an unspoiled natural environment without the environment being threatened.

**Economic Base** - The production, distribution and consumption of goods and services within a planning area.

**Economic Clusters** - Industries that benefit economically by co-locating near businesses with similar characteristics and require similar employment and products.

**Economic Development District** - A regional economic development administration district authorized by the U.S. Economic Development Administration that will assist local governments within the district on economic development initiatives.

**Ecosystem** - All of the interacting parts of the biological and physical components of the environment.

**Edge-to-area Ratio** - A measure used in the evaluation of nature preserves, which compares the distance around the perimeter of the nature preserve to the area contained within the nature preserve.

**Emergency Operations Center (EOC)** - Any building or structure specifically constructed to be impervious to storm or flood damage that serves as a government’s strategic resource coordination, planning and communications center during a natural or technological hazard event.

**Endangered Species** - Animal or plant species that are recognized by federal or state agencies or organizations as being in imminent danger of extinction or expiration.

**Estuarine Resources** - The natural biological or physical components of an estuary.

**Estuary** - A semienclosed coastal body of water having a connection with the ocean and within which sea water is diluted with freshwater inflow from the land.

**Exotic Species** - Animal or plant species that are not native to the Region.
Extremely Hazardous Substance (EHS) - Any of over 300 chemicals the U.S. Environmental Protection Agency has determined to be extremely hazardous to health or the environment. The presence of one or more EHS at a facility in excess of a specified quantity requires that certain reporting and local emergency planning activities be conducted.

Flatwoods/Prairie/ Marsh Lake - A wetland natural community similar to a depression marsh, but with an open water zone at the center.

Flood Plain - For the purposes of this document, those areas inundated during a 100-year flood event or identified by the National Flood Insurance Program as Zones A or Z on Flood Insurance Rate Maps or Hazard Boundary Maps.

Flood Plain Swamp - A wetland natural community occurring on flooded soils along stream channels and in low spots and oxbows within flood plains.

Florida’s Intrastate Highway System - A system of existing and future limited access and controlled access facilities which have the capacity to provide high-speed and high-volume traffic movements in an efficient and safe manner.

Floridan Aquifer - A deep aquifer that occurs beneath the entire Region and contains highly mineralized water.

Freshwater Tidal Swamp - A forested wetland near the mouth of a river or estuary just inland from mangroves or saltmarshes.

Goal - The long term end toward which programs and activities are ultimately directed.

Greenbelt - A stretch of land separating urban areas which is characterized by a land cover dominated by plants.

Greenway - A narrow or wide corridor of open space managed for natural resource conservation and/or recreation.

Groundwater - Water occurring in an aquifer below the surface of the land.

Growth Management - Planning theory popular during the 1980’s which emphasized provision of services (i.e. roads, sewers, water police, etc.) and de-emphasized urban form and design.

Habitat Conservation Plan - A plan developed as part of a program authorized by the federal Endangered Species Act, which allows some impacts to an endangered or potentially endangered species in exchange for other measures to protect the species.

Hard Bottom - A marine and estuarine natural community consisting of solidified rock or shell conglomerates which lack dense populations of sessile plant and animal species.
Hardwood Hammock - A densely wooded upland or wetland community with high plant species diversity, which is dominated by oaks, cabbage palms, or other species of hardwood trees.

Hawthorn Formation - A geologic layer separating the surficial aquifer from the Floridan Aquifer.

Hazardous Material - One of several hundred thousand chemicals for which the U.S. Occupational Health and Safety Administration requires a Material Safety Data Sheet (MSDS). A MSDS is a legal document which details a chemical’s synonyms; physical properties; shipping, handling and storage procedures; and health hazard, first aid, reactivity, fire and explosion, and spill and leakage data.

Homebound - Someone who is physically or mentally impaired and cannot leave their home without some type of aid and assistance.

Household - One or more persons, related or unrelated, living together in a single housing unit.

Hurricane - A tropical cyclone with sustained winds of at least 74 miles per hour which is generally accompanied by heavy rainfall, thunder, lightning, and tornadoes.

Hydric Hammock - A densely wooded wetland community characterized as a well developed hardwood and cabbage palm forest with an understory often dominated by palms and ferns.

Hydroperiod - The length of time over which a wetland remains flooded or saturated each season.

Hydrophyte - Any plant growing in water or on a substrate that is periodically deficient in oxygen as a result of excessive water content.

Inclusionary Housing - A program to increase housing choice by providing the opportunity to construct more affordable, diverse and economical housing to meet the needs of low and moderate income citizens. Normally enacted through zoning.

Infill - Development on scattered vacant sites within a built-up area of a neighborhood or district.
**Infrastructure** - Buildings, roadways, bridges, airports, electrical generation and transmission systems, drainage and stormwater facilities, water and wastewater systems, solid waste collection, transfer, recycling and disposal facilities, schools, parks, prisons and any other facility that is basic in daily life.

**Intermodal** - The connection between two or more modes of transportation.

**Intracoastal Waterway** - A navigation channel which extends through the Region, running north-to-south parallel to the coastline.

**Labor Force** - All civilians in the non-institutional population 16 years and over classified as “employed” or “unemployed” and members of the Armed Forces stationed in the United States.

**Labor Force Participation Rate** - The number of persons in the Labor Force divided by the total number of persons aged 16-65.

**Landfill Leachate** - Water soluble material that is carried into the groundwater as a result of percolating through a landfill.

**Level of Service (LOS)** - An indicator of the extent or degree of service provided by, or proposed to be provided by a facility based on the operational characteristics of the facility. A qualitative rating of the effectiveness of a highway in serving traffic, measured in terms of operating conditions. Note: The Highway Capacity Manual identifies operating conditions ranging from “A” for best operations (low volume, high speed) to “E” for poor operations at possible capacity load.

**Low Income Household** - A household where total annual adjusted gross income is between 50 and 80 percent of the median annual adjusted gross income for households within the County in which the household occurs.

**Low-Income Persons** - One or more natural persons or a family, the total annual adjusted gross household income of which does not exceed 80 percent of the median annual adjusted gross income for households within the state, or 80 percent of the median annual adjusted gross income for households within the metropolitan statistical area (MSA) or, if not within an MSA, within the county in which the person or family resides, whichever is greater.

**Major Industrial Sectors** - Major components of the industrial classification system for classifying establishments by type of economic activity. Major industries are assigned two-digit Standard Industrial Classification codes.

**Marine Resources** - The natural biological and physical components of the ocean.

**Maritime Hammock** - An upland natural community characterized as a narrow band of hardwood forest lying just inland of the coastal strand community.
**Mass Transit** - Passenger services provided by public, private or non-profit entities such as the following surface transit modes: commuter rail, rapid rail transit, light rail transit, light guideway transit, express bus, and local fixed-route bus.

**Median Age** - A measurement that divides the age distribution into two equal parts: One-half of the cases falling below the median value and one-half above the value.

**Medicaid** - A jointly-funded state and federal health care program for low-income persons. States establish their own eligibility criteria and may set benefits above the minimum established by Federal law.

**Medicare** - Federal health insurance program for people aged 65 and over. Also, covers (since 1973) eligible disabled persons of any age and persons with chronic kidney disease.

**Medium Income Household** - A household where total annual adjusted gross income is between 80 and 120 percent of the median annual adjusted gross income for households within the County in which the household occurs.

**Mesic Flatwoods** - An upland natural community characterized as an open canopy forest of widely spaced pine trees with little or no understory, but a dense ground cover of herbs and shrubs.

**Metropolitan Planning Organization (MPO)** - The organization designated by the Governor as responsible together with the State for transpiration planning in an urbanized area according to 23 U.S.C. Section 134. This organization shall be the forum for cooperative decision-making by principal elected officials of general local government.

**Metropolitan Statistical Areas (MSAs)** - A relatively freestanding metropolitan area not closely associated with other areas. An MSA has a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that nucleus.

**Mitigation Bank** - An area where natural systems are protected and restored using contributions from individuals who impact similar systems at other locations.

**Modal** - Referring to the type of transportation used (bus, train, plane, automobile, bicycle, pedestrian).

**Mode** - A method or means of travel from place to place (highways, transit, railroads, bicycle, walking, water, air, etc.) or means of transportation.

**Moderate-Income Persons** - One or more natural persons or a family, the total annual adjusted gross household income of which is less than 120 percent of the median annual adjusted gross income for households within the state, or 120 percent of the median
annual adjusted gross income for households within the metropolitan statistical area (MSA) or, if not within an MSA, within the county in which the person or family resides, whichever is greater.

**Mollusk Reef** - A marine and estuarine natural community characterized as an expansive concentration of sessile mollusks occurring in intertidal and subtidal zones to a depth of 40 feet.

**Natural Community** - An assemblage of animal and plant populations characteristic of uplands, wetlands, or waterbodies in their predevelopment condition.

**Natural Resource of Regional Significance** - A natural resource or system of interrelated natural resources, that due to its function, size, rarity or endangerment retains or provides benefit of regional significance to the natural or human environment, regardless of ownership (Chapter 27E-5.002(4), Florida Administrative Code).

**Natural Resources** - The natural biological and physical components of the land, air, and sea.

**Natural System** - A natural community or ecosystem or group of adjacent or contiguous natural communities or ecosystems.

**Natural Preserve** - An area protected and managed to maintain native ecosystems.

**Neighborhood** - Area within a city, town or village which includes several types of housing and some commercial and workplace uses. Although diverse, neighborhoods tend to be predominately residential. Generally, they range in size from 40 to 200 acres.

**Neighborhood School** - A public school located to serve an exiting or proposed neighborhood.

**North American Free Trade Agreement (NAFTA)** - An international trade program that is part of the new multilateral trading partnerships and regional common markets around the world. An initiative that subscribes to the principles of free and fair trade.

**Pine Flatwoods** - An upland natural community characterized as an open canopy forest dominated by slash pine trees with little or no understory, but a dense ground cover of herbs and shrubs, especially saw palmetto.

**Policy** - The ways in which programs and activities are conducted to achieve identified goals.

**Post-Disaster Recovery and Redevelopment** - Segments of comprehensive emergency management planning which provide for the short- and long-term replacement of structures, infrastructure, facilities, and services damaged or destroyed by a natural or technological disaster.
Potable Water - Water designated for drinking.

Potentially Endangered Species - Animal or plant species that have been listed by federal or state agencies or organizations as being threatened, rare, or of special concern.

Poverty Level - Threshold as defined by the Bureau of Census. Poverty thresholds are revised annually to allow for changes in the cost of living as reflected in the Consumer Price Index and are computed on a national basis only. Persons below the poverty level are in extreme want of necessities.

Prairie Hammock - An upland natural community characterized as a clump of tall cabbage palm and live oak trees in the midst of prairie or marsh communities.

Pre-Disaster Mitigation - That segment of comprehensive emergency management planning which provides for any action taken to reduce the long-term risk to human life and property from a natural or technological disaster.

Preferred Form of Development - Implementation tool to plan and manage growth in the form of cities, towns and villages composed of districts and neighborhoods.

Prescribed Burn - A management technique whereby natural communities are set on fire under controlled conditions in order to simulate a natural wildfire, but without impacting surrounding areas.

Primary Dune - The first in a series of sandy wind-deposited ridges as one moves landward from the beach.

Public Transit - The transporting of people by a system, operated locally or regionally, consisting of one or more types of vehicles and/or services and available for public passenger travel and mobility.

Public Transportation Corridors - Major routes used for moving people and goods by one or more transportation options, including mass transit.

Purchase of Agricultural Conservation Easement (PACE) - A deed restriction to a property that would limit its use to agricultural activity with some type of compensation to the property owner.

Quality of Life - A standard associated with components that include the natural environment, recreation, culture, safety, education, housing and health services when described.

Recharge - The process whereby rain water or surface water seeps into the ground and enters an aquifer.
Reclaimed Wastewater - Water that has been discharged from a wastewater treatment facility and is of sufficient quality for use in irrigation.

Redevelopment - The process by which cities renew themselves through private and public investments, i.e., renovation of a blighted area.

Regional Roadway Network - See Regional Transportation Element, Section C. Significant Regional Resources and Facilities for list and definition.

Reverse Osmosis - A technique used to purify water which uses a membrane to limit the movement of certain molecules in the water.

Rotational Impoundment Management - A technique used to manage mangrove impoundments whereby hydrological connections to the estuary are opened and closed according to a schedule which limits reproduction by mosquitos, but allows the mangrove swamp to function ecologically with the estuary.

Saltwater Intrusion - The phenomenon occurring when salt water replaces freshwater in an aquifer.

Sand Bottom - A marine and estuarine natural community characterized as an expansive, relatively open benthic community which lacks dense populations of sessile plant and animal species.

Sandhill - An upland natural community characterized as a forest of widely spaced pine trees with a sparse understory of turkey oaks and a dense ground cover of grasses and herbs on rolling hills of sand.

Sandhill Upland Lake - A wetland natural community characterized as a permanently flooded shallow rounded depression occurring in a sandy upland community.

Scrub - An upland natural community which occurs on well-drained sandy soils and is usually dominated by sand pines and/or scrub oaks.

Scrubby Flatwoods - A scrub community with a canopy of slash pine instead of sand pine.

Seagrass Bed - A marine and estuarine natural community which is dominated by an expansive stand of vascular plants.

Shallow Aquifer - Another term for the surfical aquifer.

Shellfish Bed - A marine and estuarine natural community which is characterized by an expansive concentration of oysters or other mollusks.
Shell Mound - An upland community characterized as an elevated mound of mollusk shells and aboriginal garbage on which a hardwood, closed-canopy forest develops. Shell Mound is unusual among the biological communities in that it is largely the result of the activities of aboriginal natives, instead of natural physical factors.

Significant Regional Resources or Facility - Resources or facilities identified by the Council as being of regional importance and meeting one or more of the following criteria: a) a resource or facility that due to its uniqueness, function, benefit, service delivery area, or importance is identified as being of regional concern; b) a resource or facility that requires the participation or involvement of two or more governmental entities to ensure proper and efficient management; c) a resource or facility that meets either criteria (a) or (b) above and is defined to be of state or regional concern or importance in state or federal laws or rules of state or regional agencies adopted pursuant to Chapter 120, Florida Statutes (Chapter 27E-5.002(7) Florida Administrative Code).

Slough - A wetland which is characterized as a broad shallow channel, inundated with flowing water except during extreme droughts, that are the deepest drainageways within strand swamps and swale system.

Spatial Clustering - Businesses that select to geographically locate near existing businesses because of the relative benefits that would be derived by co-locating near such businesses.

Special Needs Population - Those residents who are afflicted with physical or mental impairments or who require full-time specialized medical or technological assistance which prevent them from safely evacuating prior to an emergency.

Spoil - The material removed when the bottom of a waterbody is dredged.

Sprawl - Any type or form of development that does not contribute to the creation of cities, towns and villages composed of neighborhoods and districts (i.e. isolated housing subdivision, schools disconnected from the urban areas they serve, isolated office and industrial parks).
**Storm Surge** - The rise in sea water level accompanying the approach of a hurricane. The extent of storm surge varies with the strength of the hurricane, coastal topography, and tides. Storm surge effect is compounded by wind-driven wave action on top of the surge water level.

**Stormwater Attenuation Facility** - A reservoir designed to retain stormwater for purposes of enhancing the water supply and limiting excessive flows to the estuary.

**Stormwater Runoff** - Water that originates from the drainage of land surfaces after a rain.

**Strand Swamp** - A shallow, forested wetland, which is usually an elongated depression or channel dominated by cypress.

**Strategic Regional Policy Plan** - Plan for one of the 11 uniform regions in Florida, as defined in Section 186.503(10), Florida Statutes.

**Strategy** - An overall means of achieving a goal which is proactive, future and results oriented with a focus on long term priorities, needs and problems.

**Surfical Aquifer** - A shallow aquifer that occurs near the surface of the ground.

**Sustainability** - meeting the needs of the present without compromising the ability of future generations to meet their own needs

**Swale** - A natural wetland characterized as a marsh situated in a broad shallow channel with flowing water and having emergent grasses, sedges, or herbs. Man-made swales, which are not recognized as natural resources of regional significance, are shallow channels designed to collect and transport stormwater runoff.

**Telecommuting** - The concept of using telecommunications as the vehicle for exchange and presence between home and the workplace rather than physically traveling between these two destinations.

**Tidal Marsh** - A marine and estuarine natural community, which is characterized as an expanse of grasses, rushes or sedges along the coastline.

**Tidal Swamp** - A marine and estuarine natural community, which is characterized as a dense, low mangrove forest occurring along a relatively flat shoreline.

**Town** - Planned and managed aggregation of neighborhoods and districts. A town is composed of no less than one district (i.e. a Main Street, a civic square, etc.) and of many neighborhoods.
**Town Center (and Village or City Center)** - Functional and civic nucleus of a Town. It should include a green or square, no less than one public building (i.e. Town Hall, Post Office, etc.), and commercial and mixed-use buildings.

**Transit Oriented Development (TOD)** - Design philosophy that encourages development from the ground up with transit in mind; emphasizing securing a high density level, combining a mix of uses, utilizing a hierarchy of streets and designing at a human scale to maximize the potential for transit use within a community.

**Transportation Corridor** - Major routes used for moving people and goods by one or more transportation options.

**Transportation Demand Management (TDM)** - Strategies designed to reduce the number of trips made by single occupant vehicles and enhance the regional mobility of all citizens. These strategies include but are not limited to encouragement and enhancement of traditional ridesharing (carpooling and vanpooling), public transportation, alternative work hours (flextime, compressed work week, etc.), non-motorized transportation (bicycle and pedestrian modes), priority or preferential parking for ridesharers, and development and implementation of shuttle services. Also included is the fostering of telecommuting programs.

**Transportation Disadvantaged** - Those persons who, because of disability, income status, or age, are unable to transport themselves or to purchase transportation.

**Transportation Management Organization (TMO)** - Organizations which are formed by private organizations such as local businesses, corporate employers and developers and sometimes partnered with local, regional or state agencies to address community transportation problems.

**Tropical Hammock** - A narrow band of hardwood forest lying just inland of the coastal strand community having a number of cold-sensitive species of tropical origin.

**Unconsolidated Substrate** - A marine and estuarine natural community consisting of unsolidified material such as sand, shell, or mud, situated in expansive open areas of subtidal, intertidal, and supratidal zones, which lack dense populations of sessile plant and animal species.

**Undifferentiated Aquifer** - A surficial aquifer that has not been given a distinct name and may not be separated hydrologically.

**Undisturbed Natural Community** - A natural community that has not been altered significantly by selective clearing, retains its predevelopment character, and is not dominated by exotic species.

**Upland** - Areas that are not usually flooded, do not have hydric soils, and are not dominated by hydric vegetation.
**Upland Buffer** - An undeveloped area usually dominated by an upland natural community or landscape material that surrounds a wetland or lake.

**Urban Form** - General physical characteristics of urban development.

**Urban Sprawl** - Urban development or uses which are located in predominantly rural areas, or rural areas interspersed with generally low-intensity or low-density urban uses, and which are characterized by one or more of the following conditions: (a) The premature or poorly planned conversion of rural land to other uses; (b) the creation of areas of urban development or uses which are not functionally related to land uses which predominate the adjacent area; or (c) the creation of areas of urban development or uses which fail to maximize the use of existing public facilities or the use of areas within which public services are currently provided. Urban sprawl is typically manifested in one or more of the following land use or development patterns: Leapfrog or scattered development; ribbon or strip commercial or other development; or large expanses of predominantly low-intensity, low-density, or single-use development.

**Value-Added Agriculture** - The processing of raw vegetables and other products into canned, jarred or frozen materials and provided to food purveyors throughout the country.

**Vehicle Miles of Travel (VMT)** - On highways, a measurement of the total miles traveled in a given area for a specified time period. It is calculated by multiplying the number of vehicles by the miles traveled in a given area or on a given highway during the time period. In transit, it is calculated by multiplying the number of vehicles by the miles traveled on a given area or on a given route, line or given route, line or network during the time period.

**Very Low Income Household** - A household where total annual adjusted gross income does not exceed 50 percent of the median annual adjusted gross income for households within the County in which the household occurs.

**Very Low-Income Persons** - One or more natural persons or a family, not including students, the total annual adjusted gross household income of which does not exceed 50 percent of the median annual adjusted gross income for households within the state, or 50 percent of the median annual adjusted gross income for households within the metropolitan statistical area (MSA) or, if not within an MSA, within the county in which the person or family resides, whichever is greater.

**Village** - Planned neighborhood or small aggregation of neighborhoods which normally occurs beyond the metropolitan area. Often located in agricultural areas.

**Vision** - A description of the intended future physical appearance and qualities of the Region.
**Wastewater Effluent** - The liquid discharged from a wastewater treatment facility after completion of the treatment process.

**Water Table** - The upper surface of the surficial aquifer.

**Waterbody** - Permanently flooded aquatic system, such as a pond, river, lake, reservoir, estuary, or ocean.

**Watershed** - An area from which surface water runoff is drained by a stream, canal, or conveyance system.

**Wet Flatwoods** - A natural wetland characterized as relatively open-canopy forest of scattered pine trees with a shrubby understory or dense ground cover dominated by hydrophitic plants.

**Wet Prairie** - A natural wetland characterized as a treeless plain with ground cover of grasses and herbs.

**Wetland** - An area which has hydric soils, hydrophitic vegetation, and the ground is saturated for a portion of the year.

**Wetland System** - A series of wetlands that are linked hydrologically, at least during periods of high water.

**Wilderness Island** - A natural system that is completely surrounded by agriculture or urban development, and is geographically isolated from other natural systems.

**Wildlife Corridor** - A non-urbanized stretch of land between nature preserves that allows the movement of wildlife between the preserve areas.

**Worm Reef** - A marine and estuarine natural community which is characterized by a large colonial conglomerate of rigid Sabellarid worm tubes.

**Xeric Hammock** - An upland natural community characterized as either a scrubby, dense, low canopy forest with little understory other than palmetto, or a multi-storied forest of tall trees with an open or closed canopy.

**Xeriscape** - Landscape using drought tolerant species to conserve water.
BIBLIOGRAPHY

1. Future of the Region


2. **Affordable Housing**

Advisory Commission on Regulatory Barriers to Affordable Housing. “*Not in My Backyard*”. Washington, D.C.: Report to President Bush and Secretary Kemp, July 1991.


Dade County. “*Documentary Surtax Homeownership Loan Program*”. Miami, Florida.


Egbert, Carolyn, Chairman of Indian River County Affordable Housing Task Force. Personal Correspondence, March 27, 1995.


Murphy, Dennis. Personal Correspondence. St. Lucie County Community Development Department, May 12, 1995.


Roberts, Coleen and Van Vonno, Nikki. Personal Correspondence. Martin County Growth Management Department, May 9, 1995.

Rohani, Susan. Personal Correspondence. Indian River County, Planning and Zoning Department, June 12, 1995.


Taylor, Chauncey, II. Personal Correspondence. Palm Beach County Department of Housing and Community Development, May 11, 1995.


3. Economic Development


December 15, 1995 Adopted SRPP E-8 Bibliography


Palm Beach County Board of County Commissioners. *1980-1990, Demographic and Soci-Economic Profile of Palm Beach County.* West Palm Beach, Florida, March 1993.

Palm Beach County Board of County Commissioners. *Overall Economic Development Program of Palm Beach County,* West Palm Beach, Florida, June 1993.


4. Education

Biddix, Lois D. *The Role of School Size*. Palm Beach County School District.


5. **Emergency Preparedness**


Personal interviews with Indian River, Martin, Palm Beach, and St. Lucie County emergency management officials and staffs.


6. Natural Resources of Regional Significance


Dames and Moore in conjunction with Palm Beach County Department of Environmental Resources Management. *Lake Worth Lagoon Natural Resources Inventory and Resource Enhancement Study.* West Palm Beach: Palm Beach County, 1990.


Florida Department of Natural Resources. *Indian River Lagoon Aquatic Preserve Management Plan (Vero Beach to Fort Pierce and Jensen Beach to Jupiter Inlet).* Tallahassee: Florida Department of Natural Resources, 1989.

Florida Department of Natural Resources. *Indian River Lagoon Spoil Island Management Plan.* Tallahassee: Florida Department of Natural Resources, 1990.
Florida Natural Areas Inventory and Florida Department of Natural Resources. *Guide to the Natural Communities of Florida.* Tallahassee: Florida Natural Areas Inventory, 1990.


Palm Beach County Department of Environmental Resources Management. *Palm Beach County, Florida Estuarine Natural Resources Inventory and Resources Enhancement Study.* West Palm Beach: Palm Beach County, 1992.


7. Regional Transportation


Indian River County Board of County Commissioners, *Indian River County Comprehensive Plan*. Vero Beach, Florida, 1990.


Palm Beach County Board of County Commissioners. *Palm Beach County Comprehensive Plan*. West Palm Beach, Florida, 1989.


Exotic Species
APPENDIX F

Exotic Species

This list is taken from the 1995 Florida Exotic Pest Plant Council’s *List of Florida’s Most Invasive Species*. The Exotic Pest Plant Council (EPPC) is a national nonprofit organization founded in Florida in 1984 to take action against the invasion of exotic pest plants. Category I species include those that are invading and disrupting native plant communities in Florida. This definition does not rely on the economic severity of the problem and the geographic area covered, but the proven damage caused. Category II species are those that have shown a potential to invade and disrupt native plant communities. These species have a real potential to become category I ranked, but have not yet invaded natural Florida communities.

**Category I**

-Abrus precatorius (rosary pea)
-Acacia auriculiformis (earleaf acacia)
-Ardisia crenulata (=A. crenata) (coral ardisia)
-Ardisia elliptica (=A. humilis) (shoebutton ardisia)
-Asparagus densiflorus (asparagus fern)
-Bischofia javanica (bischofia)
-Brachiara mutica (Pará grass)
-Calophyllum calaba (=C. inophyllum of authors) (mast wood, Alexandrian laurel)
-Cassia coluteoides (=Senna pendula) climbing cassia, Christmas cassis, Christmas senna)
-Casuarina equisetifolia (=C. litorea) (Australian pine)
-Casuarina glauca (suckering Australian pine)
-Cestrum diurnum (day jasmine)
-Cinnamomum camphora (camphor tree)
-Coiocasia esculenta (taro)
-Colubrina asiatica (lather leaf)
-Cupaniopsis anacardioides (carrotwood)
-Dioscorea bulbifera (air-potato)
-Eichhornia crassipes (water hyacinth)
-Eugenia uniflora (Surinam cherry)
-Ficus microcarpa (=F. nitida; = F. retusa var. nitida) (laurel fig)
-Hydrilla verticillata (hydrilla)
-Hygrophila polysperma (green hygro)
-Hymenachne amplexicaulis (West Indian marsh grass)
-Imperata brasiliensis (cogon grass) (=Imperata cylindrica)
-Ipomoea aquatica (water spinach)
-Jasminum dichotomum (Gold Coast jasmine)
-Jasminum fluminense (jasmine)
-Lantana camara (lantana)
-Ligustrum sinense (hedge privet)
-Lonicera japonica (Japanese honeysuckle)
-Lygodium japonicum (Japanese climbing fern)
-Lygodium microphyllum (Old World climbing fern)
-Macfadyena unguis-cati (cat’s claw)
-Melaleuca quinquenervia (melaleuca, broad-leaf paper bark)
-Melia azedarach (Chinaberry)
-Mimosa pigra (catclaw mimosa)
-Nandina domestica (nandina, heavenly bamboo)
-Nephrolepis cordifolia (sword fern)
Neyraudia reynaudiana (Burma reed; cane grass)
Oeceoclades maculata (ground orchid)
Paederia foetida (skunk vine)
Panicum repens (torpedo grass)
Paspalum notatum (Bahia grass)
Pennisetum purpureum (Napier grass)
Pistia stratiotes (water lettuce)
Psidium guajava (guava)
Psidium littorale (=P. cattleanum) (strawberry guava)
Pueraria montana (=P. lobata) (kudzu)
Rhodomyrtus tomentosus (downy myrtle)
Rhoeo spathacea (=R. discolor) (oyster plant)
Sapium sebiferum (popcorn tree, Chinese tallow tree)
Scaevola taccada var. sericea (=S. frutescens; =S. sericea) (half-flower, beach naupaka)
Schinus terebinthifolius (Brazilian pepper)
Solanum torvum (turkey berry)
Solanum viarum (tropical soda apple)
Syzygium cumini (jam bolan, Java plum)
Tectaria incisa (incised halberd fern)
Thespesia populnea (seaside mahoe)
Tradescantia fluminensis (white-flowered wandering jew)

Category II

Adenanthera pavonina (red sandlewood)
Agave sisalana (sisal hemp)
Albizia julibrissin (mimosa)
Albizia lebbeck (woman’s tongue)
Aleurites fordii (tung oil tree)
Alstonia macrophylla (devil-tree)
Alternanthera philoxeroides (alligator weed)
Antigonon leptopus (coral vine)
Aristolochia littoralis (calico flower)
Asystasia gangetica (Ganges primrose)
Bauhinia variegata (orchid tree)
Broussonetia papyrifera (paper mulberry)
Callisia fragrans (inch plant, spironema)
Casuarina cunninghamiana (Australian pine)
Cereus undatus (night-blooming cereus)
Cryptostegia grandiflora (Palay rubber vine)
Dalbergia sissoo (Indian dalbergia, sissoo)
Dioscorea alata (yam)
Enterolobium contortisiliquum (ear-pod tree)
Epipremnum pinnatum cv. Aureum (pothos)
Eucalyptus camaldulensis (Murray red gum)
Ficus altissima (false banyan)
Ficus benghalensis (Bengal fig)
Ficus benjamina (weeping fig)
Ficus religiosa (bo tree)
Flacourtia indica (governor’s plum)
Flueggea virosa (flueggea)
Hibiscus tiliaceus (mahoe)
Hyptage benghalensis (hyptage)
Jasminum sambac (Arabian jasmine)
Koelreuteria elegans (golden shower tree)
Leucaena leucocephala (lead tree)
Ligustrum japonicum (Japanese privet)
Ligustrum lucidum (Chinese privet)
Melinis minutiflora (molasses grass)
Merremia tuberosa (wood-rose)
Murraya paniculata (orange-jasmine)
Myriophyllum spicatum (Eurasian water-milfoil)
Nepthrolepis multiflora (Asian sword fern)
Ochrosia parviflora (=O. elliptica) (kopsia)
Paederia craddasiana (skunk vine, onion vine)
Passiflora foetida (stinking passion-flower)
Pittosporum pentandrum (pittosporum)
Pittosporum tobira (Japanese pittosporum, pittosporum)
Rhynchelytrum repens (Natal grass)
Sansevieria hyacinthoides (=S. trifasciata) (bowstring hemp)
Solanum diphylhum (twinleaf nightshade)
Syngonium podophyllum (arrowhead vine)
Syzygium jambos (rose-apple)
Terminalia catappa (tropical almond)
Tribulus cistoides (puncture vine)
Triphasia trifoliata (lime berry)
Urena lobate (Caesar’s weed)
Wedelia trilobata (wedelia)
Wisteria sinensis (Chinese wisteria)
ENDANGERED AND
POTENTIALLY ENDANGERED
SPECIES
APPENDIX G

Endangered and Potentially Endangered Species

This list includes all endangered and potentially endangered species known to have been identified in the Region. The list is a subset of the *Official lists of Endangered and Potentially Endangered Fauna and Flora in Florida* prepared by the Florida Game and Fresh Water Fish Commission (Wood 1994). Species classified by the Florida Council on Rare and Endangered Plants and Animals are also included in this list. Note that this list is based on the most recent information available. However, it is possible that some listed species occur within the Region but have not yet been detected or included in this list. The agency lists are revised and updated periodically. Consult with each agency to determine the latest information regarding the status of a particular species.

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>FCREPA</th>
<th>FGFWFC</th>
<th>FDACS</th>
<th>USFWS</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Agonostomus monticola</em></td>
<td>Mountain mullet</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Awaous tajasica</em></td>
<td>River goby</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Bairdiella sanctaecluciae</em></td>
<td>Striped croaker</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Centropomus undecimalis</em></td>
<td>Common snook</td>
<td></td>
<td>SSC</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Gobionellus stigmatrus</em></td>
<td>Spottail goby</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Oostethus lineatus</em></td>
<td>Opossum pipefish</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Rivulus marmoratus</em></td>
<td>Rivulus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AMPHIBIANS**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Designated Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Rana capito aesopus</em></td>
<td>Gopher frog</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SSC</td>
</tr>
</tbody>
</table>

**REPTILES**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Designated Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Alligator mississippiensis</em></td>
<td>American alligator</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Caretta caretta caretta</em></td>
<td>Atlantic loggerhead turtle</td>
<td>T</td>
</tr>
<tr>
<td><em>Chelonia mydas mydas</em></td>
<td>Atlantic green turtle</td>
<td>E</td>
</tr>
<tr>
<td><em>Dermochelys coriacea</em></td>
<td>Leatherback turtle</td>
<td>E</td>
</tr>
<tr>
<td><em>Drymarchon corais couperi</em></td>
<td>Eastern Indigo Snake</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Eretmochelys imbricata</em></td>
<td>Atlantic hawksbill turtle</td>
<td>E</td>
</tr>
<tr>
<td>imbricata</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Gopherus polyphemus</em></td>
<td>Gopher tortoise</td>
<td>T</td>
</tr>
<tr>
<td><em>Lepidochelys kempi</em></td>
<td>Atlantic ridley turtle</td>
<td>E</td>
</tr>
<tr>
<td><em>Nerodia fasciata tainiata</em></td>
<td>Atlantic salt marsh</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>water snake</td>
<td></td>
</tr>
<tr>
<td><em>Pituophis melanoleucus</em></td>
<td>Florida pine snake</td>
<td>SSC</td>
</tr>
<tr>
<td><em>mugitus</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Sceloporus woodi</em></td>
<td>Florida scrub lizard</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Designated Status¹</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>1. <strong>BIRDS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Accipiter cooperii</em></td>
<td>Cooper's Hawk</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Aimophila aestivalis</em></td>
<td>Bachman's Sparrow</td>
<td></td>
</tr>
<tr>
<td><em>Ajaia ajaja</em></td>
<td>Roseate Spoonbill</td>
<td>R</td>
</tr>
<tr>
<td><em>Anmodramus savannarum floridanus</em></td>
<td>Florida Grasshopper Sparrow</td>
<td>E, SSC</td>
</tr>
<tr>
<td><em>Aphelocoma coerulescens coerulescens</em></td>
<td>Florida Scrub Jay</td>
<td>T, T</td>
</tr>
<tr>
<td><em>Aramus guarauna</em></td>
<td>Limpkin</td>
<td>SSC, SSC</td>
</tr>
<tr>
<td><em>Ardea herodias occidentalis</em></td>
<td>Great White Heron</td>
<td></td>
</tr>
<tr>
<td><em>Athena cunicularia</em></td>
<td>Burrowing Owl</td>
<td></td>
</tr>
<tr>
<td><em>Buteo brachyurus</em></td>
<td>Short-tailed Hawk</td>
<td>R</td>
</tr>
<tr>
<td><em>Casmerodius albus</em></td>
<td>Great Egret</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Charadrius melodus</em></td>
<td>Piping Plover</td>
<td>T</td>
</tr>
<tr>
<td><em>Coccothraustes minor</em></td>
<td>Mangrove Cuckoo</td>
<td>R</td>
</tr>
<tr>
<td><em>Dendroica discolor paludicola</em></td>
<td>Florida Prairie Warbler</td>
<td></td>
</tr>
<tr>
<td><em>Dendroica kirtlandii</em></td>
<td>Kirtland's Warbler</td>
<td>E, E</td>
</tr>
<tr>
<td><em>Egretta caerulea</em></td>
<td>Little Blue Heron</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Egretta rufescens</em></td>
<td>Reddish Egret</td>
<td>R, SSC</td>
</tr>
<tr>
<td><em>Egretta thula</em></td>
<td>Snowy Egret</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Egretta tricolor</em></td>
<td>Tricolored Heron</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Eulas caeruleus majusculus</em></td>
<td>Black-shouldered Kite</td>
<td>R</td>
</tr>
<tr>
<td><em>Eudocimus albus</em></td>
<td>White Ibis</td>
<td>SSC, SSC</td>
</tr>
<tr>
<td><em>Falco columbarius</em></td>
<td>Merlin</td>
<td>SU</td>
</tr>
<tr>
<td><em>Falco peregrinus tundrius</em></td>
<td>Arctic Peregrine Falcon</td>
<td></td>
</tr>
<tr>
<td><em>Falco sparverius paucus</em></td>
<td>Southeastern American Kestrel</td>
<td></td>
</tr>
<tr>
<td><em>Fregata magnificens rothschildi</em></td>
<td>Magnificent Frigatebird</td>
<td>T</td>
</tr>
<tr>
<td><em>Grus canadensis pratensis</em></td>
<td>Florida Sandhill Crane</td>
<td>T, T</td>
</tr>
<tr>
<td><em>Haematopus palliatus</em></td>
<td>American Oystercatcher</td>
<td>T, SSC</td>
</tr>
<tr>
<td><em>Halieetus leucocephalus</em></td>
<td>Bald Eagle</td>
<td>T, E</td>
</tr>
<tr>
<td><em>Isobrychus exilis exilis</em></td>
<td>Least Bittern</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Lanius ludovicianus</em></td>
<td>Loggerhead Shrike</td>
<td></td>
</tr>
<tr>
<td><em>Laterallus jamaicensis</em></td>
<td>Black Rail</td>
<td>SU, SU, C2</td>
</tr>
<tr>
<td><em>Mycteria americana</em></td>
<td>Wood Stork</td>
<td>E, E</td>
</tr>
<tr>
<td><em>Nycticorax nycticorax</em></td>
<td>Black-crowned Night Heron</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Nyctanassa violacea</em></td>
<td>Yellow-crowned Night Osprey</td>
<td>T, SSC</td>
</tr>
<tr>
<td><em>Pandion haliaetus</em></td>
<td>Osprey</td>
<td></td>
</tr>
<tr>
<td><em>Pelecanus occidentalis</em></td>
<td>Brown Pelican</td>
<td></td>
</tr>
</tbody>
</table>

¹ Designated Status:
- C2: Critically Imperiled
- E: Endangered
- SSC: Sensitive Species of Concern
- T: Threatened

December 15, 1995 Adopted SRPP

Endangered and Potentially Endangered Species
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Designated Status $^1$</th>
<th>FCREPA $^2$</th>
<th>FGFWFC $^3$</th>
<th>FDACS $^4$</th>
<th>USFWS $^5$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picoides borealis</td>
<td>Red-cockaded Woodpecker</td>
<td></td>
<td>E</td>
<td>T</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>Picoides villosus</td>
<td>Hairy Woodpecker</td>
<td></td>
<td></td>
<td>SSC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audubonii</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plegadis falcinellus</td>
<td>Glossy Ibis</td>
<td></td>
<td></td>
<td>SSC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>falcinellus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyborus plancus</td>
<td>Audubon's Crested Caracara</td>
<td></td>
<td>T</td>
<td>T</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>audubonii</td>
<td>Florida Clapper Rail scottii</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rallus longirostris</td>
<td>Snail Kite</td>
<td></td>
<td>E</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scotiis</td>
<td>Black Skimmer</td>
<td></td>
<td></td>
<td>SSC</td>
<td>SSC</td>
<td>E</td>
</tr>
<tr>
<td>Rynchops niger</td>
<td>Least Tern</td>
<td></td>
<td>T</td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sterna antillarum</td>
<td>Roseate Tern</td>
<td></td>
<td>T</td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sterna dougallii</td>
<td>Royal Tern</td>
<td></td>
<td></td>
<td>SSC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sterna maxima</td>
<td>Sandwich Tern</td>
<td></td>
<td></td>
<td>SSC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vireo altiloquus</td>
<td>Black-whiskered Vireo</td>
<td></td>
<td></td>
<td>R</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MAMMALS**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Designated Status $^1$</th>
<th>FCREPA $^2$</th>
<th>FGFWFC $^3$</th>
<th>FDACS $^4$</th>
<th>USFWS $^5$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balæna glacialis</td>
<td>Right whale</td>
<td></td>
<td>E</td>
<td>E</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>Balaenoptera borealis</td>
<td>Sei whale</td>
<td></td>
<td>E</td>
<td>E</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>Balaenoptera physalus</td>
<td>Finback whale</td>
<td></td>
<td>E</td>
<td>E</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>Eptesicus fuscus</td>
<td>Big brown bat</td>
<td></td>
<td>R</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Felis concolor coryi</td>
<td>Florida panther</td>
<td></td>
<td>E</td>
<td>E</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>Megaptera novaeangliae</td>
<td>Humpback whale</td>
<td></td>
<td>E</td>
<td>E</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>Mustela frenata peninsulæ</td>
<td>Florida long-tailed</td>
<td></td>
<td>R</td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mustela vison evergladensis</td>
<td>Everglades mink</td>
<td></td>
<td>T</td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mustela vison lutensis</td>
<td>Florida mink</td>
<td></td>
<td>R</td>
<td>E</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>Neofiber alleni</td>
<td>Round-tailed muskrat</td>
<td></td>
<td>SSC</td>
<td></td>
<td></td>
<td>C2</td>
</tr>
<tr>
<td>Peromyscus floridanus</td>
<td>Florida mouse</td>
<td></td>
<td>T</td>
<td>SSC</td>
<td></td>
<td>C2</td>
</tr>
<tr>
<td>Peromyscus polionotus nivalentris</td>
<td>Southeastern beach mouse</td>
<td></td>
<td>T</td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physeter catodon</td>
<td>Sperm whale</td>
<td></td>
<td>E</td>
<td>E</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>Plecotus rafinesquii</td>
<td>Southeastern big-eared bat</td>
<td></td>
<td>R</td>
<td></td>
<td>C2</td>
<td></td>
</tr>
<tr>
<td>Sciurus niger avicennia</td>
<td>Big Cypress (= mangrove)</td>
<td></td>
<td>T</td>
<td>T</td>
<td></td>
<td>C2</td>
</tr>
<tr>
<td></td>
<td>fox squirrel</td>
<td></td>
<td></td>
<td>SSC</td>
<td></td>
<td>C2</td>
</tr>
<tr>
<td>Sciurus niger shermani</td>
<td>Sherman's fox squirrel</td>
<td></td>
<td>T</td>
<td>SSC</td>
<td></td>
<td>C2</td>
</tr>
<tr>
<td>Trichechus manatus latirostris</td>
<td>West Indian manatee</td>
<td></td>
<td>T</td>
<td>E</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Designated Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------------</td>
<td>-------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INVERTEBRATES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crustaceans</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aratus pisonii</td>
<td>Mangrove crab</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goniopsis cruentata</td>
<td>Mangrove crab</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Arachnids</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latrodectus bishopi</td>
<td>Red widow spider</td>
<td>SSC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Insects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aphodius troglodytes</td>
<td>Scarab beetle</td>
<td>T</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ataenius saramari</td>
<td>Scarab beetle</td>
<td>R/SU</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bolbocerosoma hamatomi</td>
<td>Scarab beetle</td>
<td>R/SU</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copris gopheri</td>
<td>Scarab beetle</td>
<td>T</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cremastocheilus squamulosus</td>
<td>Scarab beetle</td>
<td>R/SU</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eumaeus atala florida</td>
<td>Florida atala butterfly</td>
<td>SU</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libellula jesseana</td>
<td>Purple chaser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onthophagus polyphemi</td>
<td>Scarab beetle</td>
<td>T</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peliotrupes profundus</td>
<td>Scarab beetle</td>
<td>R/SU</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serica tantula</td>
<td>Scarab beetle</td>
<td>R/SU</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trigonopellastes floridana</td>
<td>Scarab beetle</td>
<td>R/SU</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Molluscs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liguus pasciatus</td>
<td>Florida tree snail</td>
<td>SSC</td>
<td>SSC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PLANTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acrostichum danaefolium</td>
<td>Giant leather fern</td>
<td>R</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adiantum capillus-veneris</td>
<td>Venus-hair fern</td>
<td>T</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anemia adiantifolia</td>
<td>Pine fern</td>
<td>R</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias curtissii</td>
<td>Curtiss milkweed</td>
<td>E</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asimina tetramera</td>
<td>Four-petal pawpaw</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avicennia germinans</td>
<td>Black mangrove</td>
<td>SSC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bletia purpurea</td>
<td>Pine pink</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calopogon barbatus</td>
<td>Bearded grass pink</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calopogon multiflorus</td>
<td>Many-flowered grass pink</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calopogon pallidus</td>
<td>Pale grass pink</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calopogon tuberosus</td>
<td>Grass pink (unnamed)</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campyloneurum phyllitidus</td>
<td>Strap fern (unnamed)</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Designated Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>------------------------------</td>
<td>-------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceratopteris pteridoides</td>
<td>Water-horn fern</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cereus eriophorus var. fragrans</td>
<td>Fragrant wool-bearing cephalus</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chrysophyllum olivaeformae</td>
<td>Satin leaf</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cladonia perforata</td>
<td>Florida perforate cladaonia</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coccothrinax argentata</td>
<td>Silver palm</td>
<td>CE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coelorchis tuberculosa</td>
<td>Florida jointtail</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commelina gigas</td>
<td>Climbing dayflower</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conradina grandiflora</td>
<td>Large-flowered rosemary</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cucurbita okeechobeensis</td>
<td>Okeechobee gourd</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dennstaedtia bipinnata</td>
<td>Cuplet fern</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dicerandra immaculata</td>
<td>Lakela's mint</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drosera intermedia</td>
<td>Water sundew</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encyclia tampensis</td>
<td>Butterfly orchid</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ernodiella littoralis</td>
<td>Beach creeper</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eryngium cuneifolium</td>
<td>Wedge-leaved button snakeroat</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erythrodes quercetica</td>
<td>Low erythrodes</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Euodia alta</td>
<td>Wild coco</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Euphorbia cumulicola</td>
<td>Sand dune spurge</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gossypium hirsutum</td>
<td>Wild cotton</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habenaria odontopetala</td>
<td>Rein orchid (unnamed)</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habenaria quinquesta</td>
<td>Michaux's orchid</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habenaria repens</td>
<td>Water spider orchid</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hexalactris spicata</td>
<td>Crested coralroot</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helianthus ambigua</td>
<td>Carolina holly</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isoetes flaccida</td>
<td>Florida quillwort</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jacquemontia reclinata</td>
<td>Beach clustervine</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lechea cermua</td>
<td>Nodding pinweed</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lechea divaricata</td>
<td>Pine pinweed</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lilium catesbaei</td>
<td>Catesby lily</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lygodium pictum</td>
<td>Southern club moss</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lygodium currum</td>
<td>Nodding club moss</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mallotonia gnaphalodes</td>
<td>Sea lavender</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monotropa brittonii</td>
<td>Scrub Indian pipes</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myricianthes fragrans var. simpsonii</td>
<td>Simpson's stopper</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nephrolepis biserrata</td>
<td>Boston fern (unnamed)</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Okenia hypogaea</td>
<td>Burrowing four-o'clock</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oncidium variegatum</td>
<td>Dancing-lady orchid</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ophioglossum palmatum</td>
<td>Hand adder's tongue fern</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ophioglossum petiolatum</td>
<td>Adder's tongue fern</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

G-5

Endangered and Potentially Endangered Species
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Designated Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osmunda cinnamomea</td>
<td>Cinnamon Fern</td>
<td>CE</td>
</tr>
<tr>
<td>Osmunda regalis</td>
<td>Royal fern</td>
<td>CE</td>
</tr>
<tr>
<td>Panicum abscessum</td>
<td>Cutthroat grass</td>
<td>T</td>
</tr>
<tr>
<td>Paronychia chartacea</td>
<td>Paper-like nailwort</td>
<td>E</td>
</tr>
<tr>
<td>Peperomia humilis</td>
<td>Pepper (unnamed)</td>
<td>T</td>
</tr>
<tr>
<td>Phlebodium aureum</td>
<td>Golden polypody</td>
<td>T</td>
</tr>
<tr>
<td>Platanthera nivea</td>
<td>Snowy orchid</td>
<td>T</td>
</tr>
<tr>
<td>Pogonia ophioglossoides</td>
<td>Rose pogonia</td>
<td>T</td>
</tr>
<tr>
<td>Polygala rugelii</td>
<td>Big yellow milkwort</td>
<td>T</td>
</tr>
<tr>
<td>Polystachya flavescens</td>
<td>Pale-flowered polystachya</td>
<td>T</td>
</tr>
<tr>
<td>Ponthieva racemosa</td>
<td>Shadow witch</td>
<td>T</td>
</tr>
<tr>
<td>Psilotum nudum</td>
<td>Whisk fern</td>
<td>T</td>
</tr>
<tr>
<td>Pteroglossaspis ecristata</td>
<td>Wild coco</td>
<td>E</td>
</tr>
<tr>
<td>Remirea maritima</td>
<td>Beach star</td>
<td>E</td>
</tr>
<tr>
<td>Rhizophora mangle</td>
<td>Red mangrove</td>
<td>SSC</td>
</tr>
<tr>
<td>Sabal etonia</td>
<td>Scrub palmetto</td>
<td>T</td>
</tr>
<tr>
<td>Sabal minor</td>
<td>Dwarf palmetto</td>
<td>T</td>
</tr>
<tr>
<td>Schizaea germanii</td>
<td>Tropical curly-grass fern</td>
<td>R</td>
</tr>
<tr>
<td>Selaginella arenicola</td>
<td>Sand spikemoss</td>
<td>T</td>
</tr>
<tr>
<td>Spiranthes brevilabris</td>
<td>Florida Ladies' tresses</td>
<td>T</td>
</tr>
<tr>
<td>var. floridana</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spiranthes cernua var. odorata</td>
<td>Fragrant ladies' tresses</td>
<td>T</td>
</tr>
<tr>
<td>Spiranthes cranichoides</td>
<td>Ladies' tresses (unnamed)</td>
<td>T</td>
</tr>
<tr>
<td>Spiranthes elata</td>
<td>Tall neottia</td>
<td>T</td>
</tr>
<tr>
<td>Spiranthes lacinata</td>
<td>Lace-lip ladies' tresses</td>
<td>T</td>
</tr>
<tr>
<td>Spiranthes lanceolata</td>
<td>Leafless beaked orchid</td>
<td>T</td>
</tr>
<tr>
<td>var. lanceolata</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spiranthes longilabris</td>
<td>Long-lip ladies' tresses</td>
<td>T</td>
</tr>
<tr>
<td>Spiranthes polyantha</td>
<td>Florida Keys ladies' tresses</td>
<td>E</td>
</tr>
<tr>
<td>Spiranthes praecox</td>
<td>Giant ladies' tresses</td>
<td>T</td>
</tr>
<tr>
<td>Spiranthes torta</td>
<td>Ladies' tresses</td>
<td>T</td>
</tr>
<tr>
<td>Spiranthes vernalis</td>
<td>Ladies' tresses</td>
<td>T</td>
</tr>
<tr>
<td>Stenorrhynchos lanceolatus</td>
<td>Scarlet ladies' tresses</td>
<td>T</td>
</tr>
<tr>
<td>Suriana maritima</td>
<td>Bay cedar</td>
<td>E</td>
</tr>
<tr>
<td>Tephrosia angustissima</td>
<td>Narrow-leaved hoary pea</td>
<td>E</td>
</tr>
<tr>
<td>Tetramicra canaliculata</td>
<td>Orchid</td>
<td>T</td>
</tr>
<tr>
<td>Thelypteris interrupta</td>
<td>Aspidium fern (unnamed)</td>
<td>T</td>
</tr>
<tr>
<td>Thelypteris kunthii</td>
<td>Aspidium fern (unnamed)</td>
<td>T</td>
</tr>
<tr>
<td>Thelypteris palustris</td>
<td>Marsh fern</td>
<td>T</td>
</tr>
<tr>
<td>Thelypteris serrata</td>
<td>Aspidium fern (unnamed)</td>
<td>T</td>
</tr>
<tr>
<td>Tillandsia balbisiana</td>
<td>Wild pine (unnamed)</td>
<td>T</td>
</tr>
</tbody>
</table>

1. Designated Status
   - CE: Critically Endangered
   - C2: Threatened (Provincial)
   - E: Endangered
   - T: Threatened
   - SSC: Sensitive Species Complex

2. FCREPA
3. FGFWFC
4. FDACS
5. USFWS

December 15, 1995 Adopted SRPP

Endangered and Potentially Endangered Species
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Designated Status</th>
<th>FCREPA²</th>
<th>FGFWFC³</th>
<th>FDACS⁴</th>
<th>USFWS⁵</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tillandsia fasciculata</td>
<td>Common wild pine</td>
<td></td>
<td></td>
<td></td>
<td>CE</td>
<td></td>
</tr>
<tr>
<td>Tillandsia flexuosa</td>
<td>Twisted air plant</td>
<td>T</td>
<td></td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tillandsia paucifolia</td>
<td>Wild pine (unnamed)</td>
<td>T</td>
<td></td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tillandsia setacea</td>
<td>Wild pine (unnamed)</td>
<td>T</td>
<td></td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tillandsia utriculata</td>
<td>Giant wild pine</td>
<td></td>
<td></td>
<td></td>
<td>CE</td>
<td></td>
</tr>
<tr>
<td>Tillandsia valenzuelana</td>
<td>Wild pine</td>
<td></td>
<td></td>
<td></td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>Triphora gentianoides</td>
<td>Nodding-caps (unnamed)</td>
<td></td>
<td></td>
<td></td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>Vanilla mexicana</td>
<td>Vanilla (unnamed)</td>
<td>T</td>
<td></td>
<td></td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>Vittaria lineata</td>
<td>Shoestring fern</td>
<td></td>
<td></td>
<td></td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>Warea carteri</td>
<td>Carter's mustard</td>
<td></td>
<td></td>
<td></td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Woodwardia areolata</td>
<td>Netted chain fern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyris drummondii</td>
<td>Drummond's yellow-eyed grass</td>
<td></td>
<td></td>
<td></td>
<td>C2</td>
<td></td>
</tr>
<tr>
<td>Zamia floridana</td>
<td>Florida coontie</td>
<td>T</td>
<td></td>
<td></td>
<td>CE</td>
<td></td>
</tr>
</tbody>
</table>

¹E = Endangered; R = Rare; T = Threatened; T(S/A) = Threatened/Similarity of Appearance; SSC = Species of Special Concern; SU = Status Undetermined; C1 = A candidate for federal listing for which there is enough substantial information on biological vulnerability and threats to justify listing; C2 = A candidate for federal listing with some evidence of vulnerability, but for which not enough information exists to justify listing; CE = Commercially Exploited; SU = Status Undetermined

²Florida Committee on Rare and Endangered Plants and Animals

³Florida Game and Fresh Water Fish Commission

⁴Florida Department of Agriculture and Consumer Services

⁵United States Fish and Wildlife Service

*December 15, 1995 Adopted SRPP*
CLEARANCE TIMES
APPENDIX H

CLEARANCE TIMES (in hours)
Treasure Coast Hurricane Evacuation Study
Transportation Analysis

INDIAN RIVER COUNTY - In County Evacuation Movements

<table>
<thead>
<tr>
<th>Storm Scenario</th>
<th>Summer Season</th>
<th>Late Fall Season</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1-2 Hurricane</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid Response</td>
<td>5-1/2 hours</td>
<td>6 hours</td>
</tr>
<tr>
<td>Medium Response</td>
<td>6-1/2 hours</td>
<td>7 hours</td>
</tr>
<tr>
<td>Long Response</td>
<td>9-1/2 hours</td>
<td>9-1/2 hours</td>
</tr>
<tr>
<td><strong>Category 3-5 Hurricane</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid Response</td>
<td>8-1/4 hours</td>
<td>8-3/4 hours</td>
</tr>
<tr>
<td>Medium Response</td>
<td>9 hours</td>
<td>9-1/2 hours</td>
</tr>
<tr>
<td>Long Response</td>
<td>10 hours</td>
<td>10-1/2 hours</td>
</tr>
</tbody>
</table>

___________________________________

**Category 3-5 Hurricane/Post Andrew**

<table>
<thead>
<tr>
<th>Mega Participation Rates</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid Response</td>
<td>9-1/4 hours</td>
<td>9-3/4 hours</td>
</tr>
<tr>
<td>Medium Response</td>
<td>10 hours</td>
<td>10-1/2 hours</td>
</tr>
<tr>
<td>Long Response</td>
<td>11 hours</td>
<td>11-3/4 hours</td>
</tr>
</tbody>
</table>

Note: Please see times related to out of county movements on out of region clearance time sheet.
ST. LUCIE COUNTY - In County Evacuation Movements

<table>
<thead>
<tr>
<th>Storm Scenario</th>
<th>Summer Season</th>
<th>Late Fall Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1-2 Hurricane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid Response</td>
<td>6-1/4 hours</td>
<td>7-1/4 hours</td>
</tr>
<tr>
<td>Medium Response</td>
<td>7 hours</td>
<td>8 hours</td>
</tr>
<tr>
<td>Long Response</td>
<td>9-1/2 hours</td>
<td>9-1/2 hours</td>
</tr>
</tbody>
</table>

| Category 3-5 Hurricane           |               |                  |
| Rapid Response                  | 6-1/2 hours   | 7-1/2 hours      |
| Medium Response                 | 7-1/4 hours   | 8-1/2 hours      |
| Long Response                   | 9-1/2 hours   | 10 hours         |

| Category 3-5 Hurricane/Post Andrew |            |                  |
| Mega Participation Rates         |            |                  |
| Rapid Response                   | 6-1/2 hours | 7-1/2 hours      |
| Medium Response                  | 7-1/4 hours | 8-1/2 hours      |
| Long Response                    | 9-1/2 hours | 10 hours         |

Note: Please see times related to out of county movements on out of region clearance time sheet.
CLEARANCE TIMES (in hours)
Treasure Coast Hurricane Evacuation Study
Transportation Analysis

MARTIN COUNTY - In County Evacuation Movements

<table>
<thead>
<tr>
<th>Storm Scenario</th>
<th>Summer Season</th>
<th>Late Fall Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1-2 Hurricane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid Response</td>
<td>7-1/4 hours</td>
<td>8 hours</td>
</tr>
<tr>
<td>Medium Response</td>
<td>7-3/4 hours</td>
<td>8-3/4 hours</td>
</tr>
<tr>
<td>Long Response</td>
<td>9-1/4 hours</td>
<td>9-3/4 hours</td>
</tr>
</tbody>
</table>

| Category 3 Hurricane     |               |                 |
| Rapid Response           | 12-3/4 hours  | 13-1/2 hours    |
| Medium Response          | 13-1/4 hours  | 14-1/4 hours    |
| Long Response            | 14-1/4 hours  | 15-1/4 hours    |

| Category 4-5 Hurricane   |               |                 |
| Rapid Response           | 16-1/4 hours  | 17 hours        |
| Medium Response          | 16-3/4 hours  | 17-3/4 hours    |
| Long Response            | 17-1/2 hours  | 18-3/4 hours    |

| Category 4-5 Hurricane/Post Andrew |               |                 |
| Mega Participation Rates        |               |                 |
| Rapid Response                  | 16-1/2 hours  | 17-1/2 hours    |
| Medium Response                 | 17-1/4 hours  | 18 hours        |
| Long Response                   | 18 hours      | 19 hours        |

Note: Please see times related to out of county movements on out of region clearance time sheet. Category 4-5 times can be reduced to the Category 3 level times by shifting out of county evacuees living north of the St. Lucie River to Pt. St. Lucie Blvd. in St. Lucie County.
CLEARANCE TIMES (in hours)
Treasure Coast Hurricane Evacuation Study
Transportation Analysis

PALM BEACH COUNTY - In County Evacuation Movements

<table>
<thead>
<tr>
<th>Storm Scenario</th>
<th>Summer Season</th>
<th>Late Fall Season</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light Traffic</td>
<td>Heavy Traffic</td>
</tr>
<tr>
<td>Category 1-2 Hurricane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid Response</td>
<td>7-1/4 hrs.</td>
<td>8 hrs.</td>
</tr>
<tr>
<td>Medium Response</td>
<td>8 hrs.</td>
<td>9 hrs.</td>
</tr>
</tbody>
</table>

| Category 3 Hurricane       |               |                  |               |               |
| Rapid Response            | 8-1/2 hrs.    | 9-1/2 hrs.       | 9-1/2 hrs.    | 10-1/2 hrs.   |
| Medium Response           | 9-1/4 hrs.    | 10-1/4 hrs.      | 10 hrs.       | 11-1/2 hrs.   |
| Long Response             | 10-1/4 hrs.   | 11-1/2 hrs.      | 11 hrs.       | 13-1/4 hrs.   |

| Category 4-5 Hurricane     |               |                  |               |               |
| Rapid Response            | 11 hrs.       | 12 hrs.          | 12 hrs.       | 13 hrs.       |
| Long Response             | 12-1/2 hrs.   | 14-1/4 hrs.      | 13-1/2 hrs.   | 16 hrs.       |

| Category 4-5 Hurricane/   |               |                  |               |               |
| Post/Andrew               |               |                  |               |               |
| Mega Participation Rates  |               |                  |               |               |
| Rapid Response            | 11-1/4 hrs.   | 12 hrs.          | 12 hrs.       | 13 hrs.       |
| Medium Response           | 11-1/2 hrs.   | 13 hrs.          | 12-1/2 hrs.   | 14-1/4 hrs.   |
| Long Response             | 12-1/2 hrs.   | 14-1/4 hrs.      | 13-1/2 hrs.   | 16 hrs.       |

Note: Please see times related to out of county movements on out of region clearance time sheet.
### OUT OF REGION - Florida Turnpike/I-95 Evacuation Movements

<table>
<thead>
<tr>
<th>Storm Scenario</th>
<th>Summer Season</th>
<th>Late Fall Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1-2 Hurricane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid Response</td>
<td>16-1/2 hours</td>
<td>21 hours</td>
</tr>
<tr>
<td>Medium Response</td>
<td>16-3/4 hours</td>
<td>21-1/4 hours</td>
</tr>
<tr>
<td>Long Response</td>
<td>17-1/4 hours</td>
<td>21-1/2 hours</td>
</tr>
<tr>
<td>Extra Long Response</td>
<td>18-1/4 hours</td>
<td>21-3/4 hours</td>
</tr>
<tr>
<td>Category 3-5 Hurricane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid Response</td>
<td>34-1/4 hours</td>
<td>39-3/4 hours</td>
</tr>
<tr>
<td>Medium Response</td>
<td>34-1/2 hours</td>
<td>40 hours</td>
</tr>
<tr>
<td>Long Response</td>
<td>34-3/4 hours</td>
<td>40-1/4 hours</td>
</tr>
<tr>
<td>Extra Long Response</td>
<td>35 hours</td>
<td>40-1/2 hours</td>
</tr>
<tr>
<td><strong>Category 3-5 Hurricane/Post Andrew</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mega Participation Rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid Response</td>
<td>47-1/4 hours</td>
<td>54-1/4 hours</td>
</tr>
<tr>
<td>Medium Response</td>
<td>47-1/2 hours</td>
<td>54-1/4 hours</td>
</tr>
<tr>
<td>Long Response</td>
<td>47-3/4 hours</td>
<td>54-3/4 hours</td>
</tr>
<tr>
<td>Extra Long Response</td>
<td>48 hours</td>
<td>55 hours</td>
</tr>
</tbody>
</table>

Note: These times reflect the accumulation of Lower southeast Florida evacuation vehicles along with the out of county vehicles produced by Treasure Coast Counties on both the Florida Turnpike and I-95. Preliminary analyses from the Florida Peninsula Hurricane Evacuation Study show that clearance times could be much higher than these if a major hurricane forces the evacuation of southwest Florida and the bottleneck moves up to the interchange of I-75 and the Florida Turnpike at Wildwood.
III. COMMENTS

State Report of Findings and Recommendations for the Treasure Coast Regional Planning Councils Strategic Regional Policy Plan, October 23, 1995
INTRODUCTION

The State Report of Findings and Recommendations for the Treasure Coast Regional Planning Council's Strategic Regional Policy Plan has been prepared in accordance with sections 186.507 and 508, Florida Statutes, and Rule 27E-5, Florida Administrative Code.

This report identifies the significant findings and recommendations compiled from the review comments received from state and regional agencies and other entities. It sets forth findings that identify concerns with the Treasure Coast Regional Planning Council's (TCRPC's) proposed strategic regional policy plan (SRPP). Additionally, it includes specific recommendations for each finding necessary to make the plan consistent with the State Comprehensive Plan (SCP), Chapter 186, Florida Statutes, Rule 27E-5, Florida Administrative Code, and other pertinent state regulations. The report and the reviewing agencies' comments are provided to assist the TCRPC in its continuing development and improvement of the region's plan.

A copy of the State Report of Findings and Recommendations for the Treasure Coast Regional Planning Council's Strategic Regional Policy Plan shall be included in the adopted plan in a comment section, pursuant to section 186.508, Florida Statutes. By attachment, the TCRPC may indicate where recommended revisions have been incorporated into the region's plan.

FINDINGS AND RECOMMENDATIONS

1. Finding:

Other state and regional reviewers have provided the Governor's Office of Planning and Budgeting (OPB) with critical and important review comments regarding the proposed SRPP.

Copies of all comments submitted to the Governor's Office regarding the TCRPC's proposed SRPP are incorporated herein for the Council's consideration and use.
Recommendation:

Comments provided by OPB and other state and regional reviewers, particularly critical and other important comments provided by the Departments of Transportation, Community Affairs, Environmental Protection, State, Health and Rehabilitative Services, Florida Game and Fresh Water Fish Commission, South Florida Water Management District, St. Johns River Water Management District, other regional organizations, and other reviewers and particularly local governments are to be used to finalize the SRPP for rulemaking and to help develop the TCRPC's future work plan for continuing to amend the region's plan. As the TCRPC continues to develop its region's SRPP, it should ensure the plan is compatible with and furthers the SCP.

TCRPC Response: Council has paid particular attention to review comments relative to consistency with the State Comprehensive Plan. Revisions to the proposed plan have been made, when appropriate, to address those comments. Council recognizes that several comments are particularly meaningful for a future work plan, such as the FDOT comment regarding a determination of the future needs for transit in the Region.

2. Finding:

The state's review and analysis was enhanced by the meeting with the TCRPC’s acting executive director, staff and representatives of state and regional agencies on October 10, 1995, to discuss comments, questions and concerns regarding the proposed plan. It was reassuring to learn that the TCRPC is committed to amending and improving the SRPP for the Treasure Coast region.

Recommendation:

As discussed in the October 10, 1995 meeting, the RPC may wish to pursue implementing a SRPP amendment process similar to the local government comprehensive plan amendment process, i.e., twice annually. Such a process would facilitate incorporation of meaningful regional guidance from new legislation and the findings and recommendations of other planning activities and programs currently in progress, such as revisions to the SCP, the metropolitan planning organization (MPO) long-range plans, Sustainable South Florida and Florida Greenways. Pertinent regional guidance from such programs should be incorporated into the Treasure Coast region's SRPP.

TCRPC Response: Council has been guided in the preparation of the SRPP by the plans and program of the Metropolitan Planning Organizations, Sustainable South Florida, Florida Greenways, etc. The Forward section of the SRPP presents Council's strategy for future amendments to the SRPP, based on new information or issues which may become more critical or more current. At this time, however, it is not recommended that Council establish a formal schedule under which SRPP will be amended.
3. Finding:

As presented to OPB, the proposed maps of natural resources of regional significance (NRRS) are not consistent with section 186.507(11), Florida Statutes, and Rule 27E-5.004(3)(a), Florida Administrative Code, because:

- they do not identify natural resources (e.g., Hutchinson Island and COBRA areas) by specific geographic location;
- the maps and the list of the NRRS do not identify the same resources;
- the maps are incorrectly titled as required by rule and statute; and
- the maps do not identify, and the plan does not address endangered, threatened or species of special concern on the list and maps of NRRS.

Recommendation:

The NRRS maps must be amended to specifically identify natural resources of regional significance by geographic location. The Natural Resources of Regional Significance section contains a list of Significant Regional Resources. The NRRSs contained on this list must be reconciled with the NRRS map. Also, the title of the NRRS maps must include the phrase: Natural Resources of Regional Significance, pursuant to Rule 27E-5.004(3)(a), Florida Administrative Code.

TCRPC Response: Council will identify all natural resources of regional significance on the map series, as required in the Florida Statutes and Florida Administrative Code. Due to logistical complications, the map series was incomplete at the time of submission of the proposed SRPP. Natural resources will be identified by specific geographic location. The title of all maps in the series will be changed to “Natural Resources of Regional Significance”. The natural resources on the list of Natural Resources of Regional Significance will be reconciled with the map series.

4. Finding:

The SRPP does not include regional goal indicators as required by Rule 27E-5.004(6), Florida Administrative Code. Indicators are to include baseline data and information against which progress can be measured in the region’s five year evaluation and appraisal report.

Recommendation:

The proposed SRPP must be revised to include goal indicators for each regional goal.

TCRPC Response: Consistent with Rule 27E-5.004(6), the final SRPP will contain one or more regional indicators for each goal.
5. Finding:

The list of Resources and Facilities of Regional Significance contained in the Education section identifies all public schools as being “regionally significant.” However, it is unclear as to how every public school is significant to the “region” and how the designation of a public school as a regional facility will be interpreted with regard to the proposed Intergovernmental Coordination Element Rule.

Recommendation:

The trends and conditions that set up the Resources and Facilities of Regional Significance list contained in the Education section must be revised to explain how public schools are a resource and facility of regional significance and how the designation of a public school as a regional facility will be interpreted with regard to the proposed Intergovernmental Coordination Element Rule.

TCRPC Response: The text containing trends and conditions will be revised to explain why all schools are considered to be facilities of regional significance. The list of resources and facilities will be changed to indicate that educational systems as a whole are the true resources of regional significance. While individual components of the system may not be regionally significant by themselves, each is an important component of the system. It would be purely speculative at this point to suggest how interpretations might be made regarding a proposed Intergovernmental Coordination Element Rule. No draft rule has been distributed. Council suggests that a local government would be unlikely to approve development which had potentially negative impacts on educational facilities.

6. Finding:

The significant regional resources and facilities listed within the Emergency Preparedness section are too broad and are not consistent with the criteria provide in Rule 27E-5.002(7), Florida Administrative Code. For example, the Significant Regional Resources and Facilities list includes all educational facilitates (public and private) located within the region. Not every public school is an adequate evacuation shelter (e.g., public schools that may be located within coastal high hazard areas).

Recommendation:

The proposed list of Significant Regional Resources and Facilities list within the Emergency Preparedness section must be revised to be consistent with the criteria set forth in Rule 27E-5.002(7), Florida Administrative Code.

TCRPC Response: The list of Significant Regional Resources and Facilities has been revised, as suggested. A number of items have been removed from the list and a number have been added. Educational facilities have been removed from...
the list; public and private emergency shelters designated by the American Red Cross have been added.

7. **Finding:**

As written, the *Emergency Preparedness* section,” does not discuss the region’s evacuation times or evacuation routes.

**Recommendation:**

The *Emergency Preparedness* section must be expanded to incorporate data and information, by county, on evacuation times and designated routes and to provide guidance for the region to maintain or improve these times and routes.

**TCRPC Response:** A new section has been added to the text entitled “Road Network, Evacuation and Clearance Times”. In addition, a complete listing of evacuation clearance times in the Treasure Coast Region, by county and storm severity, have been included in an Appendix.

8. **Finding:**

Some policies and/or the associated TCSs do not identify the ways in which programs and activities are to be conducted to achieve the region's goals. The use of such terms as "should," "encourage," "promote," and "address" do not provide clear guidance or direction to the region’s citizens and local governments, particularly for other governmental entities to ensure consistency with the SRPP and the SCP. The following are example policies/strategies which do not adequately identify how the region intends to achieve its goals: Strategy 1.1.2, Policies 1.1.2.1 and 1.1.2.2 (page II-41); Policies 5.1.1.2, 5.1.1.3, 5.1.1.4, 5.1.1.5 (page II-79); Strategy 6.1.1 (page II-80); Policy 2.2.3.1 (page 2-29); Strategy 5.1.2, 5.1.2.1, 5.1.2.2 (page 5-31); and Strategy 5.4.1, (page 5-36).

**Recommendation:**

To ensure consistency with the SCP and Rule 27E-5, Florida Administrative Code, the proposed SRPP must be amended to delete the use of such terms in order to provide clear guidance to governmental entities and the citizens of the Treasure Coast region. An example of how Policy 5.1.1.2 (page II-79) could be rewritten to provide clear, specific guidance is:

*Redevelop obsolete retail/commercial centers located within well-developed urban areas as an effort to discourage urban sprawl and co-locate services for surrounding urban area. Proposals for redevelopment may include the following site design features:*

A. *Design a network of streets that connect and enhance the establishment of adjacent neighborhoods.*
B. Include a mix of land uses that complements the existing activities of the city, town or village.

TCRPC Response: All policies and strategies have been reviewed to determine if appropriate language is used which will identify ways in which programs and activities are to be conducted. Appropriate revisions have been made.

9. Finding:

The “vision” identified in the proposed SRPP appears to focus on a significant policy change for the region in that the vision focuses on preferred development/site specific criteria. Although the “vision” is not inconsistent with the SCP, the plan does not justify or describe the reason for the RPC’s vision. Specifically, the proposed plan does not answer the following questions:

- How was the vision developed?
- What is the “regional” basis or buy-in for the “vision’s” preferred development/site specific criteria?
- What role did the region’s local governments and citizens play in the development of SRPP and specifically the vision.

It is a concern to the state that the SRPP may be prescribing changes which may not have included the participation of local governments. Therefore, local governments cannot or may be unwilling to adopt the preferred development/site specific criteria into their local government comprehensive plans.

Recommendations:

The proposed SRPP must be amended to describe how local government representatives and the region’s citizens were involved/participated in the development of the SRPP. Additionally, the plan must be amended to describe the process used to develop the “vision” set forth in the plan. In this description, the RPC must include a description of the public participation process that was used to develop the vision.

TCRPC Response: The Coordination Outline provides a description of the process used to develop the “vision”. The Coordination Outline has also been revised to include a description of the public participation process that was used to develop the vision, as well as a new section which includes a description of the public participation process utilized in the development of the SRPP as a whole. The so called “buy-in” was achieved through conducting and participating in, since 1992, 19 charrettes held throughout the Region (approximately 100 public meetings and 500 individual interviews) and the SRPP public participation process (75 individual interviews with local elected officials throughout the Region, 8 public meetings, many additional informal meetings). These are detailed in the Coordination Outline.

10. Finding:
Policy 8.1.2.2 (page II-97), includes a reference to “preferred development form principles.” However, the plan does not include a discussion of how these principles were developed/adopted, who has the authority to enforce these principles, and does not describe how local governments and the Treasure Coast RPC may determine consistency with these principles.

**Recommendation:**

The “preferred development form principles” policies must be revised to describe how they were developed and how they are to be implemented and reviewed by local governments and the Treasure Coast RPC for consistency with the principles.

**TCRPC Response:** The Forward, Purpose, Implementation of the Strategic Regional Policy Plan and Executive Summary are newly added sections of the Plan which were developed, in part, to address and clarify these concerns. The Coordination Outline has also been revised to address similar concerns.

The preferred development form is NOT site specific, and the term site specific is not used or implied in the document. No illustration or policy locates new preferred development area. The illustrations that address redevelopment examples may be depicted in existing sites, but are only shown as examples of possible applications of the concepts. The illustrations are not regulatory (unless a local government decides independently to adopt them in some fashion). New language has been included in the Forward, Implementation of the SRPP, and Executive Summary sections that further clarifies this point. A new policy has been added to encourage local governments to develop their own visions and to identify strategic planning areas which offer the best opportunity for implementation of preferred forms of development.

**Finding:**

Several of the policies contained in the proposed SRPP require that planning documents be prepared and task forces be established to address a variety of planning issues. As written, it is unclear as to what entity will be responsible for conducting or staffing these efforts. For example, Policy 3.1.1.1 (page II-59) states: “Prepare redevelopment and revitalization master plans for areas with an identified need.” The plan does not identify who will prepare these plans -- the TCRPC or the local government. Another example is Policy 4.4.1.2 (page 4-29), which calls for the creation of an interdepartmental task force to review existing local comprehensive plans for emergency management issues. It is unclear what entity will initiate the creation of this task force, and where the task force will be housed. Other policies that need clarification include: Policy 16.1.1.1 (page II-108), Policy 1.1.1.6 (page 1-19), Policy 2.6.1.5 (page 2-33), Policy 2.6.1.1 (page 2-33), Policy 2.6.1.7 (page 2-33), Policy 2.8.1.1 (page 2-35).

**Recommendation:**
Goals, policies, and strategies included in the proposed SRPP that require a specific task force, data base, or activity to be established or completed must be revised to identify the specific entity responsible for conducting the identified activity. For example, Policy 2.6.1.7 (page 2-33), could be rewritten as follows:

The Treasure Coast Regional Planning Council, with assistance from local governments located within the region, establish and staff a task force of public and private members to recommend ways for regulatory (permitting) processes to be made more user friendly and to work with local governments on implementation.

TCRPC Response: The following policies have been revised to identify the entity responsible for conducting the activity:

<table>
<thead>
<tr>
<th>Policy</th>
<th>Plan Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1.1</td>
<td>Future of the Region</td>
</tr>
<tr>
<td>16.1.1.1</td>
<td>Future of the Region</td>
</tr>
<tr>
<td>1.1.1.6</td>
<td>Affordable Housing</td>
</tr>
<tr>
<td>2.6.1.1</td>
<td>Economic Development</td>
</tr>
<tr>
<td>2.6.1.5</td>
<td>Economic Development</td>
</tr>
<tr>
<td>2.6.1.7</td>
<td>Economic Development</td>
</tr>
<tr>
<td>2.8.1.1</td>
<td>Economic Development</td>
</tr>
</tbody>
</table>

12. Finding:

The trends and conditions within the Future Growth section of the proposed plan do not adequately describe current conditions or set up the associated policies and strategies as set forth in this new vision.

Recommendation:

The Future Growth section should be revised to include the associated trends and conditions which describe/set up the current conditions within the Treasure Coast region.

TCRPC Response: A new section of the text has been prepared which describes and is entitled “Current Conditions”. 
13. Finding:

Policy 5.1.1.2 (page 5-31), states that “natural systems” will be managed, restored, and reestablished. The identification of “natural system” in the Glossary (page D-9), is vague and may limit the region’s application of the policy. In addition, the definitions of “sustainable” (page D-13), and “urban sprawl” (page D-12), are unclear.

Recommendation:

The plan must be amended to provide more meaningful definitions of the terms “natural systems,” “sustainable,” and “urban sprawl.” The definitions for “natural systems” and “urban sprawl” should incorporate the language provided in Rule 62-40.210(16), Florida Administrative Code, and Rule 9J-5.003(140), Florida Administrative Code, respectively.

TCRPC Response: The term “sustainable” has been revised to coincide with the definition used in the Governors Commission for a Sustainable South Florida Report. The definition of the term “urban sprawl” as contained in Rule 9J-5 of the Florida Administrative Code has been incorporated into the SRPP. The term “sprawl” is defined in the Regional Plan, as any development that is not part of the scheme for a City Town or Village. This definition is not seen as being in conflict with the definition of urban sprawl as contained in the Rule. Instead, sprawl is any development (including the Rule definition examples of urban sprawl) which is not part of a City, Town, or Village.

The definition of “Natural Systems” in the Glossary has been clarified by revising it to read: “A natural community or ecosystem or group of adjacent or contiguous natural communities or ecosystems.” This definition is often used to describe an area that has both upland and wetland natural communities. The term implies an ecological interaction between adjacent ecosystems.

The definition of “Natural Systems” provided in Rule 62-40.210(16) is not appropriate for use in the SRPP, because it only refers to aquatic systems. This is because Chapter 62-40 deals exclusively with Water Policy. The fact that the term may be used in a much broader context is suggested in Rule 62-40.210(16), which begins this definition by stating “for purpose of this rule.” The broader definition provided above is more appropriate in the SRPP because the plan deals with more than just water related issues.

14. Finding:

The Affordable Housing section includes policies that address only housing opportunities for moderate and low income persons in the region. The proposed SRPP does not provide trends and conditions statements, goals, policies, and strategies to address the housing needs of very-low income residents in the Treasure Coast region.

Recommendation:
The SRPP must be amended to include trends and conditions describing the housing needs of the very-low income persons, as defined pursuant to section 420.602(12), Florida Statutes. Further, goals, policies, and strategies must be developed to address these needs.

**TCRPC Response:** The terms “very low”, “low” and “moderate income” are utilized to better characterize those persons/households whose income is below the median income for the area. The requirement that all three terms need to be utilized together is unnecessary, and in effect, would make the reading of any discussion of affordable housing more difficult. Reference to those persons characterized as “very low” income is found regularly and continuously in the text of the Trends and Conditions section. Reference to the “very low” income has been added to several sections of the text, and to the goals and policies, however, text which was not appropriate to be revised has been retained.

15. **Finding:**

The affordable housing goals, policies and strategies in the proposed plan do not enhance or further the Housing goal of the SCP, as set forth in section 187.201(5), Florida Statutes, particularly since the proposed plan does not include goals, policies or strategies addressing the affordable housing needs in rural areas of the region.

**Recommendation:**

The proposed SRPP must be amended to incorporate trends and conditions, goals and policies that address the affordable housing needs for the rural areas located within the region.

**TCRPC Response:** The State Comprehensive Plan (SCP) makes one reference to housing for citizens in rural areas. This reference is in the Housing Goal, and reads “The public and private sectors shall increase the affordability of housing for low-income and moderate-income persons, including citizens in rural areas,....” Arguably, the SCP does not expect that citizens in rural areas are to be treated differently in the assessment of the affordability and availability of housing, they are simply not to be excluded. The Treasure Coast Region contains a minuscule rural population, which consists of those families living on their family farms, or those agricultural workers who choose to live within the agricultural production areas. While this Region contains residents in non-coastal locations (i.e. Fellsmere, Indiantown, Belle Glade, Pahokee, South Bay), these are residents of cities, towns and villages and should not be deemed to be rural residents. The analysis of the affordability and availability of housing in the region applies to coastal and non-coastal cities, towns and villages. The Region’s Housing Goal 1.1 applies to all residents of the Region and the need to meet identified affordable housing needs whether in a rural or urban location. The Region does have a special need to address housing for agricultural workers,
which is dealt with in some detail in the text of the Affordable Housing subject area and in Goal area 1.4 and others.

16. Finding:

The trends and conditions statements for the Affordable Housing section of the SRPP states that affordable housing for renters is an issue in the region and that the local governments have solely focused on affordable housing for owners. The regional goals and associated policies and strategies do not appear to address the need for affordable housing for renters as identified in the TCS. Additionally, neither the TCS nor Goal 11.1 and its associated strategy address the affordable housing issue for the elderly.

Recommendation:

The SRPP should be amended to provide policy guidance for affordable housing for renters and affordable housing for the elderly in the Treasure Coast region.

TCRPC Response: New Strategies 1.2.1 and 1.4.2, and new Policies 1.2.2.1, 1.4.2.1, 1.4.2.2 and 1.4.2.3 have been incorporated into the SRPP which provide the recommended support for those regional issues. The trends and conditions statement has also been expanded relative to the affordable housing needs of renters.

17. Finding:

Several of the policies contained in the proposed SRPP call for streamlining of the project review process, development pre-approval processes and/or concurrency relief for certain types of development. Many of the approval processes and concurrency requirements are subject to statutorily established procedures and standards. For example, Policy 2.4.2.4 (page 2-31), states that “concurrency relief for redevelopment, infill, and new economic development projects that meet preferred development for criteria” should be provided. This policy is inconsistent with current law. Section 163.3180(5), Florida Statutes, states that roads, sanitary sewer, solid waste, drainage, potable water, parks and recreation, and mass transit are subject to the concurrency requirement on a statewide basis and that local governments may extend the concurrency requirement on other public facilities within its local jurisdiction. Additionally, the statute provides concurrency relief only to transportation systems for projects located within urban infill, urban redevelopment, existing urban service, or downtown revitalization areas under certain circumstances. Other policies that call for streamlined review processes or exemptions include: Policy 15.1.3.1 and 15.1.3.5, (page II-106), and Policy 3.3.8 (page 3-9)
**Recommendation:**

The RPC must revise Policy 2.4.2.4 (page 2-31), to address the statutory exemption for concurrency and provide additional justification for any regional concurrency substitution program that is consistent with section 163.3180(5), Florida Statutes. Other policies contained within the proposed SRPP that provide for shortened project review and pre-approval processes must be re-evaluated and rewritten to conform with current statutory provisions.

**TCRPC Response:** Policy 2.4.2.4 has been revised to indicate that local governments should provide assistance in meeting concurrency requirements for projects which meet the preferred development from criteria. No revisions have been made to Policies 15.1.3.1 and 15.1.3.5. However, the following statement has been added to the Forward section of the Plan which address the EOG concern..."It is implicit that all regional goals, strategies, and policies suggesting shortened review processes, preapproval, concurrency relief, or other incentives suggested to encourage preferred forms and patterns of development, will be carried out within the limits of State law."

Policies which indicate that development regulations need to be simplified are not in violation of any statutes to our knowledge. In fact, the SRPP suggests that the simplification of development regulations is a most desirable step which local governments might take to improve the development review process, in general. Many recent studies and articles have made reference to the onerous development review process as a prime culprit in the difficulty of developing affordable housing, for instance.

**18. Finding:**

Strategy 3.3.2 (page 3-8), requires schools to adopt a level of service to comply with concurrency as set forth in Part II, Chapter 163, Florida Statutes. However, as written this strategy is not consistent with Chapter 95-341, Laws of Florida, “Act Relating to Educational Facilities,” which requires local school boards, in coordination and in agreement with the local governments, to adopt a level of service standard for public schools. The adopted levels of service shall be adopted as part of the capital improvements element in the local government comprehensive plan, which shall contain a financially feasible public school capital facilities program established in conjunction with the school board that will provide educational facilities at an adequate level of service necessary to implement the adopted local government comprehensive plan.

**Recommendation:**

The RPC must revise strategy 3.3.2, (page 3-8), to be consistent with Chapter 95-341, Laws of Florida, “Act Relating to Educational Facilities.”

**TCRPC Response:** Strategy 3.3.2 has been revised to be consistent with Chapter 95-341, an “Act Relating to Educational Facilities”.

---

*December 15, 1995 Adopted SRPP 12 Findings and Recommendations Report*
19. Finding:

As written, strategy 3.3.7 (page 3-9), requires an educational facilities element to be part of the local government comprehensive plans. Pursuant to section 163.3177, Florida Statutes, an educational facilities element is not required to be included in the local government comprehensive plans.

Recommendation:

The RPC must revise strategy 3.3.7 to be consistent with the statute and should include suggestive language for local governments to consider this as an optional element as permitted pursuant to section 163.3177(7)(k), Florida Statutes.

TCRPC Response: Strategy 3.3.7 has been revised to indicate that local governments consider an optional Education Facilities Element as part of their comprehensive plan.

20. Finding:

Policy 8.1.1.3 (page II-97), states “Encourage patterns of development which minimize the public cost for providing services and maximize the use of the existing service systems and facilities.” However, this policy does not address environmental constraints. Although this policy is meaningful, it does not take into consideration environmental/physical limitations with regard to siting service systems and facilities.

Recommendation:

The proposed policy should be revised to be more directive and provide for exceptions to take into consideration the environmental constraints.

TCRPC Response: Policy 8.1.1.3 has been revised to indicate that environmental/physical limitations should be taken into consideration in the siting of service systems and facilities.

21. Finding:

Policy 4.5.2.2 (page 4-30), is inconsistent with other guidance/direction provided in the SRPP. The policy could be interpreted to allow development in high hazard areas. The intent of this policy may be to provide for streamlined post-disaster redevelopment efforts. As written, this policy does not provide clear guidance about what the region intends to achieve regarding high hazard areas.

Recommendation:
Policy 4.5.2.2 must be revised to disallow inappropriate development or redevelopment in high hazard areas and direct development or redevelopment in areas that are not located in a flood plain and to abate or minimize negative impacts on the environmental resources of the region.

**TCRPC Response:** Policy 4.5.2.2 has been deleted.

22. **Finding:**

As written, Policy 5.2.3.7 (page 5-34), raises several questions. First, several of the region’s municipalities rely upon multi-jurisdictional water utilities for their water supply. Would this policy preclude those local governments from using those existing multi-jurisdictional utilities and require the construction of single jurisdictional facilities?

Second, who would develop the “water availability, use, allocation and management plans? How would these plans be prepared, adopted, and implemented? How would these plans be integrated into the overall growth management planning framework?

Third, how would this policy affect new growth and development that have already been approved by the local governments?

**Recommendation:**

The TCS included in the proposed SRPP related to water supply must be amended to explain/set up the reasons for and the implications of Policy 5.2.3.7.

**TCRPC Response:** Policy 5.2.3.7 regarding water supply sources has been deleted.

23. **Finding:**

As written, Policy 5.6.1.5 (page 5-40), is unclear in that it does not indicate how it may be measured or how it may be used in the review of local government comprehensive plans and plan amendments. Improvement and restoration efforts are significant multi-jurisdictional efforts that may or may not apply to certain local governments located within the region or may affect some local governments more so than others.

**Recommendation:**

Policy 5.6.1.5 (page 5-40), must be amended to require improved intergovernmental coordination among the affected jurisdictions for the improvement and restoration of the identified resources and systems.

**TCRPC Response:** Policy 5.6.1.5 has been revised to require improved intergovernmental coordination among the affected jurisdictions for the improvement and restoration of the identified resources and systems.
24. Finding:

The SRPP does not adequately identify and address historical and archeological resources and facilities.

Recommendation:

The TCS included in the proposed SRPP must be amended to address the protection of historical and archeological resources. The list of Significant Regional Resources and Facilities included in the Economic Development section must be revised to reference the sites in the Treasure Coast region which are identified on the State’s Historical Register list.

TCRPC Response: The Economic Development subject area has been amended to address historical and archeological resources. The Significant Regional Resources and Facilities list has been revised to reference sites in the Treasure Coast Region registered on State and federal historical lists.

25. Finding:

Policy 5.1.1.1 (page 5-31), calls for the development of incentives and programs for the preservation of environmentally sensitive lands. The policy states that such incentives should include: tax abatement or incentives, conservation easements, transfer of development rights, and purchase of development rights.” As written, the policy could be interpreted as excluding other types of incentive programs. Additionally, policy 5.3.1.7, may limit the use of alternative incentive programs to only land acquisition programs used by the local governments located within the region.

Recommendation:

The policies related to alternative conservation, preservation, and restoration of environmentally sensitive lands should be amended to include specific alternative incentive-based efforts. However, the plan should not seek to limit local governments to just those identified through the SRPP. For example, Policy 5.1.1.1, (page 5-31), could be rewritten as follows:

Develop a framework of incentives and programs for the preservation of environmentally significant natural systems. Include, but do not be limited to the following incentives: tax abatement or incentives, conservation easements, transfer of development rights, or purchase of development rights.

TCRPC Response: Policy 5.1.1.1 has been revised to indicate that the listed incentives are only examples of the incentives and programs which might be used. Acquisition is included as a program. Policy 5.3.1.7 has been revised to indicate that land acquisition and other programs should be utilized to acquire, restore and manage environmentally sensitive natural communities.

26. Finding:
Strategy 2.1.1 (page II-41), includes a directive to “Assign appropriate future land use map designations to natural systems and to agricultural and other rural users.” The qualifying term “appropriate” requires a subjective assessment by the local government in determining consistency with this strategy.

**Recommendation:**

This strategy should be revised to provide clear and specific guidance to the region. For example, the word “compatible” may provide better direction to local governments while still providing for flexibility in applying the policy.

**TCRPC Response:** Strategy 2.1.1 has been revised to indicate that “compatible” future land use map designations should be assigned.
TREASURE COAST REGIONAL PLANNING COUNCIL

Chairman
Commissioner Karen T. Marcus
Palm Beach County Commission

Vice Chairman
Commissioner Denny Green
St. Lucie County Commission

Secretary/Treasurer
Councilmember Peter Spyke
Indian River County

INDIAN RIVER COUNTY

Commissioner Frank B. Adams
Commissioner John W. Tippin
Councilwoman Ann Zugelder

MARTIN COUNTY

Commissioner Dennis Armstrong
Commissioner Charlene Hoag
Mayor Kevin Henderson

ST. LUCIE COUNTY

Commissioner Cliff Barnes
Commissioner Denny Green
Mayor William R. Dannahower

PALM BEACH COUNTY

Commissioner Karen T. Marcus
Commissioner Carol Roberts
Commissioner Maude Ford Lee
Commissioner Jeff Koons
Mayor Tony Masilotti
Mayor Karen Golonka

GUBERNATORIAL APPOINTEES

Thomas J. Baird          Nelio Coyle          John Flanigan
Peter Hartman            Joseph B. Love      Peter D. Spyke
                                      Lacene Orvis

STRATEGIC REGIONAL POLICY PLAN COMMITTEE

Councilmember Peter Spyke, Chairman
Commissioner Cliff Barnes
Commissioner Dennis Armstrong
Commissioner Karen T. Marcus
Commissioner Jeff Koons
Councilwoman Ann Zugelder
Councilmember Nelio Coyle
TREASURE COAST REGIONAL PLANNING COUNCIL
STAFF

Michael J. Busha   Executive Director
Terry L. Hess     Planning Director
Ramon Trias      Urban Planning Coordinator
Sally E. Black    Review Coordinator
Peter G. Merritt  Regional Ecologist
Bruce D. Pisani   Emergency Programs Coordinator
Bonnie B. Dearborn Intergovernmental Coordinator
Liberta E. Scotto Regional Planner
Patricia Tobin    Regional Planner
Janet Robertson  Fiscal Person
Elizabeth Gulick  Administrative Secretary
Saundra Knowles  Secretary
Barbara St. Hill  Receptionist
STRATEGIC REGIONAL POLICY PLAN
FOR THE TREASURE COAST REGION

DECEMBER 15, 1995

RULE 29K-5.002, FLORIDA ADMINISTRATIVE CODE

TREASURE COAST REGIONAL PLANNING COUNCIL
3228 SOUTHWEST MARTIN DOWNS BOULEVARD
SUITE 205
PALM CITY, FLORIDA 34990
(407) 221-4060, (407) 221-4067 (Fax)