

# **City of Neptune Beach, Florida**



## **2010 Comprehensive Land Use Plan**

## **Introduction**

The following document constitutes the adoption document that the Neptune Beach City Council will adopt pursuant to the requirements of the Local Government Comprehensive Planning and Land Development Regulation Act (Chapter 163 F.S.) and the Minimum Criteria for Review of Local Government Comprehensive Plans and Determination of Compliance (9J-5 F.A.C.) It includes the following items:

1. goals, objectives, and policies;
2. requirements for capital improvements;
3. procedures for monitoring and evaluation of the local plan;
4. maps showing future conditions; and
5. the adoption ordinance (at such time as the plan is adopted).

The goals, objectives, and policies and the Future Land Use map contained in this document were developed and based on the data and analysis that is included in the support document.

The Comprehensive Plan consists of eight individual elements. For organizational purposes, each element has been designated a letter as follows:

- A Future Land Use Element
- B Traffic Circulation Element
- C Housing Element
- D Sanitary Sewer, Potable Water, Drainage, Solid Waste, and Natural Groundwater Aquifer Recharge Element
- E Coastal/Conservation Element
- F Recreation and Open Space Element
- G Intergovernmental Coordination Element
- H Capital Improvements Element

In this plan the Coastal and Conservation Elements have been combined into one element, since Neptune Beach is entirely within the coastal area.

### **Goals, Objectives, and Policies**

The end product of the Comprehensive Plan, with its individual elements is the preparation and adoption of goals, objectives, and policies. For the purpose of this plan, a goal shall mean "a long-term end toward which programs or activities are ultimately directed" (Rule 9J-5.003 (32), F.A.C.). At a minimum, each element has a least one goal, while some have more than one goal.

In contrast to a goal, an objective means "a specific, measurable, intermediate end that is achievable and marks progress toward a goal" (Rule 9J-5.003 (57), F.A.C.). Therefore, it is common to have a number of objectives that are intended to achieve a single goal.

A policy is "the way in which programs and activities are conducted to achieve an identified goal" (Rule 9J-5.003 (64), F.A.C). Just like there can be more than one objective for each goal, there is quite often a number of policies that are intended to achieve a single objective.

Using this type of hierarchy, the goals, objectives, and policies will be identified using the following alpha-numeric scheme:

|           |                   |                 |                      |                   |
|-----------|-------------------|-----------------|----------------------|-------------------|
| Goal      | element<br>letter | goal<br>.number |                      |                   |
| Objective | element<br>letter | goal<br>.number | objective<br>.number |                   |
| Policy    | element<br>letter | goal<br>.number | objective<br>.number | policy<br>.number |

For example, a policy with the designation "A.02.03.07" denotes the seventh policy that is designed to achieve the third objective under the second goal in the Future Land Use Element.

The following section presents the goals, objectives, and policies for each of the elements.

### **Future Land Use Element**

#### **Goal A.01**

Preserve the pleasant residential character of the City and ensure that the scarce developable land remaining will be developed sensitive to and compatible with the existing development and that future redevelopment will improve and enhance the quality of living by offering a variety of housing types which will minimize the threat to health, safety and welfare posed by high density, traffic congestion, commercial, and industrial intrusion and environmental degradation.

#### **Objective A.01.01**

Future development shall preserve the character of the City through the implementation of land development regulations developed by April, 1990.

#### **Policies**

**A.01.01.01** Land development regulations adopted to implement

this Comprehensive Plan shall be consistent with the following standards for residential densities as indicated below:

- a. Low Density Residential - 0 to 5 units per gross acre.
- b. Medium Density Residential - 5.1 to 10 units per gross acre.
- c. High Density Residential - 10.1 to 17 units per acre.

**A.01.01.02** The zoning map adopted to implement the Comprehensive Plan shall be consistent with the Future Land Use Plan and prevent the intrusion of higher density residential development into lower density residential development.

**A.01.01.03** Land development regulations adopted to implement the Comprehensive Plan shall address the location and extent of non-residential land use consistent with the Future Land Use Plan.

**A.01.01.04** Land development regulations shall contain provisions for the protection of the visual environment of the City, such as:

- 1. Sign Ordinance;
- 2. Landscape Ordinance; and
- 3. Buffering requirements between residential and non-residential.

**A.01.01.05** Land development regulations shall contain provisions for:

- 1. protection of environmentally sensitive lands;
- 2. safe and convenient on-site traffic flow and parking;
- 3. provision of adequate on-site parking;
- 4. protection of wellheads;
- 5. regulation of subdivisions;
- 6. regulations for areas subject to seasonal and periodic flooding;
- 7. drainage and stormwater management; and
- 8. provision of open space.

**Objective A.01.02**

The City shall ensure that existing and future developments will

be served by adequate sanitary sewer and potable water facilities.

**Policies**

- A.01.02.01** By 1992, the City shall determine those areas of the City which have demonstrated overall septic tank failure. Based on that determination, the City shall establish a schedule that shall be incorporated into the Five-Year Schedule of Capital Improvements, for providing safe sanitary sewer service to the area or areas.
  
- A.01.02.02** By 1992, the City shall determine those areas of the City where water lines need replacement. Based on that determination, the City shall establish a schedule that shall be incorporated into the Five-Year Schedule of Capital Improvements, for providing safe potable water to the area or areas.
  
- A.01.02.03** The City shall only issue development orders under the conditions and provisions as outlined in the Capital Improvements Element.

**Objective A.01.03**

Redevelopment shall not have adverse impacts on the City by increasing density and traffic congestion.

**Policies**

- A.01.03.01** Land development regulations shall include provisions for:
  - 1. Planned Unit Developments; and
  - 2. Cluster Developments.

**Objective A.01.04**

Future commercial development shall be controlled by land development regulations to be developed by April, 1991, which will limit the locations to those shown on the future land use map and provide buffering, screening, and limited ingress and egress to prohibit adverse impact on the residential character of the City.

**Policies**

- A.01.04.01** In filling of existing commercial districts along Atlantic Boulevard and Third Street shall be allowed.
  
- A.01.04.02** Expansion of strip commercial along Third Street shall be prohibited.
  
- A.01.04.03** Buffers shall be provided between commercial activities and residential development.

- A.01.04.04** Land Development Regulations adopted to implement this Comprehensive Plan shall be consistent with the following standards for commercial activities as follows:
- a. Commercial Low - Office and Professional Services;
  - b. Commercial Medium - Neighborhood Retail Sales and Services; and
  - c. Commercial High - Community Retail Sales and Services.

**Objective A.01.05  
Historic & Archaeological Resources**

The City shall protect historic and archaeological resources.

**Policies**

- A.01.05.01** Provisions shall be included in the Land Development Regulations that provide for the protection and conservation of historic resources.
- A.01.05.02** The City shall work with the City of Jacksonville's Historic Landmarks Commission to nominate historic resources for inclusion on the National Register of Historic Places.

**Objective A.01.06  
Coastal Area Populations**

The City shall coordinate future land uses and coastal area population densities with appropriate regional hurricane plans.

**Policies**

- A.01.06.01** The evacuation time will be coordinated with the major hurricane evacuation corridors.
- A.01.06.02** Evacuation routes will be given special consideration for improvement over other transportation facilities.
- A.01.06.03** The City shall update its hurricane evacuation plan every five years and shall review the effectiveness of the plan immediately after a major disaster event and incorporate necessary changes into the plan.

**Traffic Circulation Element**

**Goal B.01**

To provide a safe, convenient and efficient motorized and non-

motorized transportation system for all residents and visitors to the city.

**Objective B.01.01**

Traffic circulation planning shall be coordinated with the Future Land Use Map, the Florida Department of Transportation 5-Year Transportation Plan, the plans of adjacent municipalities, and the Jacksonville Metropolitan Planning Organization.

**Policies**

- B.01.01.01** Neptune Beach shall propose the establishment of a beaches sub-committee of the Jacksonville MPO to recommend improvements to the beach communities.
- B.01.01.02** Neptune Beach shall adopt the same level of service Standards as the Jacksonville Metropolitan Planning Organization, which are:
  - 1. Level of Service C for 24-hour traffic
  - 2. Level of Service D for peak-hour traffic.
- B.01.01.03** Neptune Beach shall review subsequent versions of the Florida Department of Transportation Plan in order to update or modify this element, if necessary.
- B.01.01.04** Neptune Beach shall review for compatibility with this element the traffic circulation plans and programs of the City of Jacksonville and other local communities as they are amended in the future.

**Objective B.01.02**

Neptune Beach shall continue ongoing maintenance of local roads in the city.

**Policies**

- B.01.02.01** A pavement schedule shall be developed and maintained to insure that all paved roads are maintained in a safe condition.
- B.01.02.02** Proposed roadway improvement projects shall be evaluated, and ranked according to the following guidelines:
  - 1. The project is needed to protect public health and safety, or to preserve or achieve full use of existing facilities.
  - 2. The project is needed to increase the efficient use of existing facilities, or to prevent or reduce future improvement costs.

**B.01.02.03** Neptune Beach shall address existing deficiencies prior to construction of new roadways.

**Objective B.01.03**

Adopted Level of Service Standards shall be maintained for existing and proposed developments.

**Policies**

**B.01.03.01** The City shall review all proposed developments for impacts upon the Level of Service Standards.

**Objective B.01.04**

Neptune Beach shall require that future developments provide motorized and non-motorized vehicle parking and shall provide for bicycle and pedestrian ways throughout the City.

**Policies**

**B.01.04.01** By 1994, the City shall prepare an integrated plan for the provision of pedestrian and bicycle routes in the City.

**B.01.04.02** The Land Development Regulations shall include provisions for bicycle storage areas in multi-family developments, commercial developments, and recreational areas.

**B.01.04.03** Neptune Beach shall review all proposed development for its accommodation of bicycle and pedestrian traffic needs.

**Objective B.01.05**

The City shall provide for a safe, efficient, and aesthetic transportation system.

**Policies**

**B.01.05.01** The City shall eliminate or minimize roadway designs which lead to hazardous conditions by:

1. requiring the provision of adequate storage and weaving areas;
2. prohibiting direct access from driveways and local roads onto high speed traffic lanes;
3. preventing conflicts between roadway and pedestrian traffic; and

4. providing adequate capacity for emergency evacuation.

**B.01.05.02** The City shall review ways to improve safety and circulation at the intersection of Forest Avenue, Penman Road, and Florida Boulevard.

**Objective B.01.07  
Rights-of-Way**

The City shall protect future and existing rights-of-ways from development and other forms of encroachment.

**Policies**

**B.01.07.01** Provisions shall be made in the Land Development Regulations for dedication, preservation, or other appropriate measures for the protection of future and existing rights-of-ways.

**Housing Element**

**Goal C.01**

Provide decent, safe, and sanitary housing in suitable neighborhoods at affordable costs to meet the needs of the present and future residents of the City. (9J-5.010(3)(a)(1))

**Objective C.01.01  
Adequate and Affordable Housing**

The City shall continue to assist the private sector to provide dwelling units of various types, sizes, and costs to meet the housing needs of all existing and anticipated populations of the city, including housing for residents with special housing needs. (9J-5.010(3)(b)(1))

**Policies**

**C.01.01.01** The City shall work with the private and non-profit sectors by providing information, technical assistance, and incentives, where needed, to maintain a housing production capacity sufficient to meet the required production. (9J-5.010(3)(c)(1))

**C.01.01.02** The City shall review ordinances, codes, regulations, and the permitting process for the purpose of eliminating excessive requirements, and amending or adding other requirements in order to increase private sector participation in meeting the housing needs, while continuing to insure the health, welfare, and safety of the residents. (9J-5.010(3)(c)(2))

**C.01.01.03** The City shall provide fast-track processing and other incentives for proposed housing developments

intended for persons with special housing needs, including the elderly, the handicapped, low income residents, and large families. (9J-5.010(3)(c)(2))

- C.01.01.04 The City of Neptune Beach shall support the efforts of the City of Jacksonville's Department of Housing and Urban Development (HUD), and assist HUD in its efforts to determine and develop sites and programs for housing low and moderate income persons.

#### **Objective C.01.02**

##### **Elimination of Substandard Housing**

Neptune Beach shall conserve the quality of housing in Neptune Beach and work to eliminate substandard housing conditions. (9J-5.010(3)(b)(2))

##### **Policies**

- C.01.02.01 By 2005, the City of Neptune Beach shall design and implement a program that is designed to reduce substandard housing in the City.
- C.01.02.02 The City shall specifically target those areas within the City that have a large percentage of substandard housing for rehabilitation and demolition if appropriate.
- C.01.02.03 The City shall continue to investigate potential violations of the Zoning and Building Code and shall enforce compliance.

#### **Objective C.01.03**

##### **Group Homes and Foster Care Facilities**

Neptune Beach shall ensure that there is an adequate number of sites for group homes and foster care facilities. (9J-5.010(3)(b)(4))

##### **Policies**

- C.01.03.01 The City of Neptune Beach shall review the zoning ordinances to ensure that adequate provisions are made to allow group homes and foster care facilities in residential areas. (9J-5.010(3)(b)(6))
- C.01.03.02 To encourage the development of community residential alternatives to institutionalization, the City of Neptune Beach shall establish principles and criteria in the Land Development Regulations that guide the location of group homes and foster care facilities. (9J-5.010(3)(c)(6))

**Objective C.01.04**

**Conservation, Rehabilitation, and Demolition**

The City of Neptune Beach shall devise methods to address the conservation, rehabilitation, and demolition of housing units. (9J-5.0101(3)(b)(5))

**Policies**

- C.01.04.01** By 1992, the City of Neptune Beach shall establish principles and strategies for the conservation, rehabilitation, and demolition of housing units. (9J-5.010(3)(c)(4))
- C.01.04.02** The City shall seek federal and state funding for the demolition or rehabilitation of substandard housing. (9J-5.010(3)(c)(7))

**Objective C.01.05**

**Displacement**

The City shall ensure that persons displaced by state and local government actions shall be treated in a fair and equitable manner.

**Policies**

- C.01.05.01** The City shall assure that reasonably located standard housing at affordable costs is available to persons displaced by state and local government programs.

**Objective C.01.06**

**Historically Significant Housing**

Historically significant housing shall be preserved and protected for residential use.

**Policies**

- C.01.06.01** Neptune Beach shall cooperate with the Jacksonville Historic Landmarks Commission in assisting property owners of historically significant housing in applying for and utilizing state and federal assistance programs. (9J-5.010(3)(c)(3))

**Objective C.01.07**

**Low and Moderate Income Housing**

The City shall work to provide affordable housing for low- and moderate-income residents.

**Policies**

- C.01.07.01** By 1994, the City shall review approaches to

providing affordable housing and shall incorporate those measures deemed most effective.

**C.01.07.02** The City shall pursue federal sources of funding earmarked for low- and moderate-income housing.

**C.01.07.03** The City shall work with the non-profit organizations which operate in Neptune Beach in their efforts to meet the basic housing needs of the homeless, low-income, and moderate income residents.

**Objective C.01.08  
Neighborhood Stabilization**

The City shall continue to preserve, protect, and stabilize the character and viability of residential neighborhoods.

**Policies**

**C.01.08.01** Commercial uses that are adjacent to residential districts will not be allowed to expand, if the expansion will have a negative impact on the character or viability of the surrounding neighborhood or if the expansion will substantially increase non-residential traffic in the surrounding neighborhood.

**Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge Element**

**Goal D.01**

Provide needed public facilities in a manner which protects investments in existing facilities and promotes use by future development.

**Objective D.01.01**

The City shall implement procedures by April 1, 1991, to ensure that at the time a development permit is issued, adequate facility capacity is available or will be available when needed to serve the development. All system improvements for replacement, expansion, or increase in capacity of facilities shall comply with the adopted level of service standards for the facilities while maximizing the use of existing facilities.

**Policies**

**D.01.01.01** The City of Neptune Beach shall adopt the following level of service standards and shall be used as the basis for determining the availability of facility capacity and the demand generated by a development:

| <u>Facility/Service Area</u> | <u>Level of Service Standard</u>  |
|------------------------------|---|
| —                            |   |
| Sanitary Sewer Facilities    | Average Sewage Generation Rate (125 gallons per capita per day)   |
| Solid Waste Facilities       | Average Solid Waste Generation Rate (7.1 pounds per capita per day)   |
| Drainage Facilities          | Stormwater Quantity:  |
| New Developments:            | 3-year frequency, 1-hour duration for drainage collection and pipes; and 25-year frequency, 24-hour duration for retention ponds and basins;  |
|                              | Stormwater Quality: No discharge from any stormwater discharge facility shall cause or contribute to a violation of water quality standards as provided for in State Statutes. Further, the City shall develop and set regulations consistent with State regulations which will set a community accepted level of water quality standard for stormwater discharge facilities. |
| Minor developments           | 5-year frequency, 24-hour duration, Rainfall Intensity curve-zone 8, DOT Drainage Manual, 1986.   |
| Potable Water Facilities     | Average Water Consumption Rate (70 gallons per capita per day)  |

In order to ensure that these level of service standards are maintained, methodologies for determining available capacity and demand shall incorporate appropriate peak demand coefficients for each facility and for the type of development proposed.

- D.01.01.02 All improvements for replacement, expansion or increase in capacity of facilities shall be compatible with the adopted level of service standards for the facilities.
- D.01.01.03 The City Council with its consulting engineers shall develop procedures to update facility demand and capacity information as building permits are issued.
- D.01.01.04 The City and its consulting engineers shall prepare annual summaries of capacity and demand information for each facility and service area.

Justification for the adoption of the above LOS standard is provided in the RESPONSE to DCA's objection number 2. The LOS for the City's wastewater treatment plant has been revised to 106 gallons per capita per day for residential use. The level of service for future commercial establishments shall be consistent with Chapter 10D-6, Florida Administrative Code.

**Objective D.01.02**

Neptune Beach will maintain a five-year schedule of capital improvement needs for public facilities, to be updated annually in accordance with the review process for the Capital Improvement Element of this plan.

**Policies**

- D.01.02.01 Proposed capital improvement projects will be evaluated and ranked accordingly to the following priority level guidelines:

Level One            whether the project is needed to protect public health and safety, to fulfill the City's legal commitment to provide facilities and services, or to preserve or achieve full use of existing facilities.

Level Two            whether the project increases efficiency of use of existing facilities, prevents or reduces future improvement costs, provides service to developed areas lacking full service or promotes in-fill development.

Level Three           whether the project represents a logical extension of facilities and services within a designated service area.

### **Objective D.01.03**

The City shall protect natural resources and provide safe sanitary sewer service by conducting an evaluation of the areas currently served by septic tank systems by 1992. On-site wastewater treatment systems shall be limited to the two areas currently using septic tanks.

#### **Policies**

- D.01.03.01** Use of on-site wastewater treatment systems shall be limited to the following conditions: existing septic tanks may remain in service until such time as centralized service is made available, requested by the residents, or septic tank failures become known and identified.
  
- D.01.03.03** Neptune Beach will work with the City of Jacksonville Health, Welfare and Environmental Services Department to promote inspection, protect operation and maintenance of septic tanks.
  
- D.01.03.04** Issuance of building permits will be conditioned upon compliance with applicable federal, state and local permit requirements for on-site wastewater treatment systems.
  
- D.01.03.05** Neptune Beach will coordinate with appropriate local, federal and state agencies to require that issuance of permits for replacement or expansion of existing on-site wastewater treatments systems is conditioned upon compliance with current regulatory requirements and water quality standards.
  
- D.01.03.06** By 1992, the City shall determine those areas of the City which have demonstrated overall septic tank failure. Based on that determination, the City shall establish a schedule that shall be incorporated into the Five-Year Schedule of Capital Improvements, for providing safe sanitary sewer service to the area or areas.

### **Objective D.01.04**

The City of Neptune Beach will implement a program of identifying those water and sewer lines in need of rehabilitation through replacement or repair.

#### **Policies**

- D.01.04.01** By 1992, the City shall identify existing sewer line deficiencies, as well as address implementation

activities for establishing priorities for replacement or correction of existing deficiencies. Improvements shall be incorporated into the Five Year Schedule of Capital Improvements and efforts to correct these deficiencies shall be made on the basis of maximizing the use of existing facilities as well as economic feasibility.

**Goal D.02**

Neptune Beach will provide sanitary sewer, solid waste, drainage and potable water facilities and services to meet existing and projected demands identified in this plan.

**Objective D.02.01**

The City of Neptune Beach shall undertake the necessary steps to provide sanitary sewer, solid waste, drainage and potable water facilities to meet existing and projected demands.

**Policies**

- D.02.01.01** Projects shall be undertaken in accordance with the schedule provided in the Capital Improvements Element of this plan.
- D.02.01.02** Projects needed to correct existing deficiencies shall be given priority in the formulation and implementation of the annual work programs of the city department responsible for the project.
- D.02.01.03** No permits shall be issued for new development which would result in an increase in demand on deficient facilities prior to completion of improvements needed to bring the facility up to standard.
- D.02.01.04** Neptune Beach will phase improvements and replacement to deteriorating facilities to assure the adopted levels of service are maintained.
- D.02.01.05** Projects shall be undertaken in accordance with the schedule provided in the Capital Improvements Element of this plan.
- D.02.01.06** The Capital Improvements shall be the annual work programs scheduled to minimize disruption of services and duplication of labor and to maintain service levels for all facilities. Neptune Beach will develop a replacement program for water lines that do not meet current city standards.
- D.02.01.07** All required federal and state permits shall be obtained before Neptune Beach undertakes or authorizes contractors to undertake construction

and/or operation of facilities.

**D.02.01.08** The annual summaries of facility capacity and demand information prepared by the City shall be used to evaluate the need for the timing and location of projects to extend or increase the capacity of existing facilities.

**Objective D.02.02**

Upon designation by the City of Jacksonville of a new landfill site for the disposal of the City of Neptune Beach's solid waste, the City of Neptune Beach will make a determination as to the need for a solid waste transfer station.

**Policy D.02.02.01**

If a transfer station is determined to be needed, the City will begin a study which includes implementation procedures as to location, timing, and economic feasibility of siting the transfer station.

**Objective D.02.03**

To implement and expand recycling programs which will reduce the amount of solid waste entering landfills in effort to maximize the use of existing landfill space.

**Policies**

**D.02.03.01**

The City shall continue its recycling of newspapers, glass, metal and aluminum in effort to assist Duval County in the overall reduction of solid waste which enters the landfills.

**D.02.03.02**

On an annual basis, the City shall review its recycling program efforts and determine the economic feasibility of expanding its recycling program to include plastics and other items which have the potential for recycling.

**Goal D.03**

**Objective D.03.01**

By April 1, 1991, the Stormwater Drainage Regulations contained in the City's Land Development Regulations will provide for an efficient storm drainage system for Neptune Beach in order to protect life, property and the natural environment at a cost consistent with the public welfare.

**Policies**

**D.03.01.01** Land Development regulations shall be developed in accordance with the following guidelines to ensure that:

Require new developments to manage runoff from the 3-year

frequency, 1-hour duration design storm event for drainage collection and pipes and from the 25-year frequency, 24-hour duration for retention ponds and basins.

Stormwater engineering, design and construction standards for on-site systems are provided;

Erosion and sediment controls are used during development; and

Periodic inspection and maintenance of on-site systems and ensured as a condition of system permit renewal.

**D.03.01.02** The City should work with the Florida Department of Transportation to coordinate maintenance and improvement of the Department of Transportation Canal.

**D.03.01.03** By 1992, the City will initiate a maintenance program to ensure that major drainage systems are inspected and receive required maintenance on at least an annual basis.

#### **Goal D.04**

The functions of natural groundwater aquifer recharge areas within the City will be protected and maintained.

#### **Objective D.04.01**

Neptune Beach shall work with the City of Jacksonville to identify and map prime natural groundwater aquifer recharge areas in the Neptune Beach area.

#### **Policies**

**D.04.01.01** Neptune Beach will work with the City of Jacksonville in the identification of recharge areas in Neptune Beach.

#### **Goal E.01**

#### **Coastal Resources**

Although the coast of Neptune Beach has, for the most part, been developed for urban use, the city shall restrict any further new development or redevelopment that would destroy or otherwise damage coastal resources. The city shall conserve, utilize, and protect its natural resources to insure that adequate resources are available for future generations. (9J-5.013(3)(a))

#### **Objective E.01.01**

#### **Protection and Conservation of Environmental Resources**

The City shall continue to protect, conserve, and enhance areas of native vegetation, existing wildlife habitat and wetlands

within the City. (9J-5.012(3)(b)(1))

**Policies**

- E.01.01.01** The City of Neptune Beach shall protect from development undeveloped wetlands as delineated by the Florida Department of Environmental Regulation and the St. Johns River Water Management District. (9J-5.012(3)(c)(1))

**Objective E.01.02  
Estuarine Environmental Quality**

By 1992, the City shall prepare a plan outlining strategies to reduce the pollution entering the Pablo Creek estuary from sources within the City Limits. (9J-5.012(3)(b)(2))

- E.01.02.01** The City shall work with Atlantic Beach to reduce the pollution entering the Pablo Creek estuary from the Hopkins Creek stormwater discharge point.

**Objective E.01.03  
Beach and Dune Protection and Enhancement**

The City shall continue to cooperate with federal, state and regional efforts to enhance the ocean beach. (9J-5.012(3)(b)(4))

**Policies**

- E.01.03.01** The city shall support additional beach erosion control projects as successfully carried out in 1979 by the U.S. Army Corps of Engineers as such projects are needed in the future. (9J-5.012(3)(c)(2))

**Objective E.01.04  
Development in Coastal High-Hazard Areas**

Within the coastal high-hazard areas, Neptune Beach shall discourage further urban development and shall limit public expenditures that subsidize development, except for the restoration or enhancement of natural resources. (9J-5.012(3)(b)(5))

**Policies**

- E.01.04.01** The city will limit public expenditures in high-hazard areas except for restoration of natural resources.
- E.01.04.02** The city will assist in the enforcement of coastal construction setback lines as established by other regulatory agencies.
- E.01.04.03** The city shall continue to enforce the requirements

of the Federal Flood Insurance Program.

- E.01.04.04** Development orders shall not be issued in known or predicted high-hazard areas. (9J-5.012(3)(c)(7))
- E.01.04.05** The City shall designate the Coastal High-Hazard Areas as those areas which are within the Velocity (V) Zones as delineated by the Federal Emergency Management Agency as of April 17, 1989, and those areas seaward of the Coastal Construction Coastal Line as delineated by the Florida Department of Natural Resources. (9J-5.012.(3)(c)(7)).

**Objective E.01.05  
Hurricane Preparedness**

Neptune Beach will cooperate and participate with all applicable regional, state, and federal agencies to maintain or reduce hurricane evacuation times. (9J-5.012 (3)(b)(7))

**Policies**

- E.01.05.01** The city will provide law enforcement to implement the Northeast Florida Hurricane Evacuation Study and reduce the time for such evacuation.
- E.01.05.02** Existing evacuation routes shall be given priority for improvement over other streets in the system.
- E.01.05.03** The City will enforce the requirements of the Federal Flood Insurance Program and consider increasing those requirements, if appropriate.
- E.01.05.04** The City shall work with other municipalities and appropriate agencies to relieve future deficiencies in hurricane evacuation. (9J-5.012(3)(c)(4))

**Objective E.01.06  
Natural Hazards and Post-Disaster Redevelopment**

By 1992, Neptune Beach shall prepare a post-disaster redevelopment plan. (9J-5.012(3)(b)(8))

**Policies**

- E.01.06.01** After hurricane events, the City shall identify those actions needed to protect public health and safety. (9J-5.012(3)(c)(5)a)
- E.01.06.02** After hurricane events, the City shall identify those structures and infrastructure that will require removal, relocation, or structural modification. (9J-5.012(3)(c)(5)b)

- E.01.06.03** The City shall limit redevelopment in areas prone to hurricane damage and shall use the Future Land Use Plan as a guide for redevelopment in those areas not prone to repeated hurricane damage. (9J-5.012(3)(c)c)
- E.01.06.04** The City shall review recommendations made by regional agencies to mitigate hurricane damage for inclusion into future updates of the Comprehensive Plan. (9J-5.012(3)(c)(5)d)
- E.01.06.05** To reduce natural hazards, the City shall continue to regulate building construction, and land uses and shall cooperate with agencies that regulate floodplains, beach alterations, stormwater management, and the use of septic tanks. (9J-5.012(3)(c)(3))

**Objective E.01.07  
Public Beach Access**

The city will preserve and maintain its public beach access and encourage new access where redevelopment might occur. (9J-5.012(3)(b)(9))

**Policies**

- E.01.07.01** The city will not allow closure of the current beach access at street ends to benefit development.
- E.01.07.02** The city will maintain and adequately mark public access points to the beach.
- E.01.07.03** The city will make every effort to acquire land for public parking convenient to public access areas. (9J-5.012(3)(c)(9))

**Objective E.01.08  
Historic Resources**

The City shall promote the protection, preservation, and appropriate reuse of historic resources within Neptune Beach. (9J-5.012(3)(b)(10))

**Policies**

- E.01.08.01** The City shall continue to cooperate with the Jacksonville Historic Landmarks Commission in assisting property owners of historically significant housing in applying for and utilizing state and federal assistance programs. (9J-5.012(3)(c)(10))
- E.01.08.02** The City shall promote the preservation, rehabilitation, and adaptive reuse of historically significant housing through technical assistance and through the provisions in the Land Development

Regulations (9J-5.012(3)(c)(10)).

**Objective E.01.09**

The City shall give priority to compatible water-dependent uses over other land uses.

**Policies**

**E.01.09.01** The Land Development Regulations shall include criteria to prioritize water related land uses.

**Objective E.01.10**

Through the preparation of a post-disaster redevelopment plan, the City shall direct population concentrations away from defined coastal high-hazard areas.

**Policies**

**E.01.10.01** By 1994, the City, through the plan amendment process, shall adopt policies that will control redevelopment activities within storm-damaged areas.

**Goal E.02**

The City shall conserve utilize, and protect the natural resources within the City limits, including air, water, wetlands, waterwells, estuaries, water bodies, soils, minerals, vegetative communities, wildlife, wildlife habitat and other natural and environmental resources. (9J-5.013.(3)(a))

**Objective E.02.01**

**Air Quality**

The City shall cooperate with the City of Jacksonville and the State of Florida in maintaining and improving air quality so that by 2000 the ambient air quality shall meet state standards. (9J-5.013(2)(b)(1))

**Policies**

**E.02.01.01** The city will participate in air quality monitoring programs carried on by the City of Jacksonville and the State of Florida.

**E.02.01.02** The city should evaluate the need for additional air quality monitoring stations if air pollution problems persist.

**E.02.01.03** The city will document and report air quality problems to the appropriate agencies.

- E.02.01.04** Alternative travel methods such as bikeways, pedestrian ways, mass transit, etc., shall be encouraged to reduce air pollution from vehicular traffic.

**Objective E.02.02  
Protect Water Resources**

The City shall adopt appropriate measures to protect its floodplains, wetlands, and water resources. (9J-5.013(2)(b)(2))

**Policies**

- E.02.02.01** Septic tanks shall be prohibited where soils are unsuitable as directed by the State Health Department.
- E.02.02.02** The City shall prohibit septic tank systems that are within 500 feet of sewer lines and require residents to tie into the sewer system.
- E.02.02.03** The Land Development Regulation shall contain provisions that control construction within 200 feet of the current wellheads.
- E.02.02.04** The City shall continue to abide by the St. Johns River Water Management District's emergency water shortage plan.
- E.02.02.05** The City shall cooperate with other governmental entities to protect water resources within the limits of the city.
- E.02.02.06** The City shall incorporate into the Land Development Regulations provisions for stormwater management.
- E.02.02.07** By April 1991, the City shall establish policies which will protect the species listed as endangered or threatened by the U.S. Fish and Wildlife Service, the Florida Department of Natural Resources, and the Florida Game and Fresh Water Fish Commission. Policies for the protection of endangered and threatened species shall be consistent with and in accordance with the above three agencies' recommendations and best management practices.
- E.02.02.08** By April 1991, the City shall establish policies which will restrict development and redevelopment activities within the 100-year floodplain.

Floodplain Land Development Regulations shall establish minimum first floor levels above the FEMA 100-year floodplain elevation and other criteria.

- E.02.02.09** Neptune Beach designates undeveloped wetlands (as delineated by the Florida Department of Environmental Regulation and the St. Johns River Water Management District) as environmentally sensitive. These wetlands shall be protected in accordance with all applicable laws.

**Objective E.02.03  
Energy Conservation**

Neptune Beach will strive to reduce energy consumption both for public and private sectors.

**Policies**

- E.02.03.01** The city will encourage car pooling and ride sharing programs.
- E.02.03.02** Bikeways and walkways will be encouraged in both public and private developments.
- E.02.03.03** Energy conservation will be encouraged in public and private buildings.
- E.02.03.04** Building and landscape design along with solar energy sources will be encouraged, where appropriate, to reduce the amount of energy required of new construction.

**Objective E.02.04  
Hazardous Wastes**

By 1994, the City shall control the disposal of hazardous wastes that are generated within the City.

**Policies**

- E.02.04.01** By 1993, Neptune Beach shall unilaterally, or in cooperation with the City of Jacksonville, prepare a hazardous waste plan that:
1. sets regulations for the generation, storage, treatment, disposal, and transportation of hazardous wastes;
  2. establishes a system for identifying sources, types, and quantities of hazardous wastes; and
  3. establishes a system for the collection and disposal of hazardous wastes that are generated by low volume generators such as households and

small businesses.

**Recreation and Open Space Element**

**Goal F.01.**

Ensure retention and maintenance and improvement of exiting open space and recreation, provision of passive recreation, jogging trails, and bicycle paths to satisfy the health, safety, and welfare needs of citizens and visitors, including special groups such as the elderly, and provide for recreation and open space as redevelopment occurs. (9J-5.014(3)(a))

**Objective F.01.01**

**Public Access**

The City shall continue to provide access to the beach and all other recreational amenities. (9J-5.014(3)(b)(1))

**Policies**

**F.01.01.01** Existing public beach access shall not be closed to the public. (9J-5.014(3)(c)(3))

**Objective F.01.02**

**Coordination**

The City of Neptune Beach shall continue to coordinate the provision of parks and facilities. (9J-5.014(3)(b)(2))

**Policies**

**F.01.02.01** The City shall continue to cooperate with the City of Jacksonville in the provision of recreational facilities and amenities within Neptune Beach.

**F.01.02.02** The City shall cooperate with the School Board in the provision of recreational facilities within Neptune Beach.

**Objective F.01.03**

**Parks and Recreation Facilities**

The City shall continue to maintain its existing recreational facilities and shall provide for the recreational needs of the City's residents through 2010. (9J-5.014(3)(b)(3))

**Policies**

**F.01.03.01** Existing recreational land shall not be replaced with

non-recreational development, except where there is a demonstrated public need.

**F.01.03.02** The City shall continue to operate and maintain existing recreational facilities in a safe and aesthetic manner.

**F.01.03.03** The City shall use the following LOS standards for the provision of neighborhood parks:

Neighborhood Parks 2 acres/1,000 Population

**Objective F.01.04**

**Open Space**

The City shall continue to provide for public open space for the enjoyment of all residents and visitors to the City and shall require that residential developments and redevelopment projects include open space. (9J-5.014(3) (b) (4))

**Policies**

**F.01.01.01** Development shall not be allowed in wetlands or otherwise environmentally sensitive areas.

**F.01.04.02** The City shall develop appropriate definitions and standards of open space for inclusion in land development regulations. (9J-5.014(3)(c)1))

**Objective F.01.05**

**Recreational Needs for the Elderly and Handicapped**

Passive recreation shall be provided which is accessible to and meets the needs of the elderly and handicapped.

**Policies**

**F.01.05.01** The City shall provide handicapped parking and barrier-free access to all public recreation facilities.

**F.01.05.02** Public recreation facilities shall provide passive type recreation for the elderly and handicapped.

**Objective F.01.06**

**Bike and Jogging/Walking Trails**

Non-vehicular travel shall be encouraged where appropriate.

**Policies**

**F.01.06.01** By 1994, the City shall prepare an integrated plan for the provision of pedestrian and bicycle routes in the City.

**F.01.06.02** Bike paths and jogging trails shall be well lighted and removed from heavy traffic or protected by physical barriers for safety purposes.

**Objective F.01.04**

**Requirements for Redevelopment Projects**

Redevelopment projects shall include requirements for the provision of recreation and open space.

**Policies**

**F.01.04.01** In areas to be redeveloped for other than low density or single-family development, recreation facilities must be provided to fulfill the requirements of the new development.

**F.01.04.02** The Planned Unit Development concept shall be used for the redevelopment of the oceanfront property to ensure preservation of public access to the beach, adequate parking, and the provision of open space.

**Intergovernmental Coordination Element**

A policy for addressing annexation issues (9J-5.015 (3)(c)(4)) is not addressed, since Neptune Beach is bounded by existing municipalities and the Atlantic Ocean.

**Goal G.01**

Establish processes among the various governmental agencies to achieve coordination of all development activities; preservation of the quality of life; and efficient use of available resources

**Objective G.01.01**

**Intergovernmental Coordination**

By 1991, the City shall propose the establishment of a formal intergovernmental coordination process between Neptune Beach, the City of Jacksonville, and the other municipalities within the old corporate limits of Duval County (the Consolidated City of Jacksonville).

**Policies**

**G.01.01.01** The City Council of Neptune Beach should work for the establishment of a coordination committee with elected representatives from all the municipalities

within the Consolidated City of Jacksonville. This committee should meet on a regular scheduled basis and discuss intergovernmental coordination issues.

- G.01.01.02** The City Council of Neptune Beach shall promote the establishment of a staff level coordination group with representatives from all of the municipalities within the Consolidated City of Jacksonville to meet monthly to discuss intergovernmental issues.
- G.01.01.03** The Neptune Beach City Council shall invite the various governmental, public, and private entities with which it shares coordination responsibilities to its various Boards and Committee meetings. The Council shall also appoint an ad hoc representative to the city's various boards and committees.
- G.01.01.04** The City Council and Neptune Beach staff shall be available to participate in intergovernmental coordination activities with other governmental public, and private entities.
- G.01.01.05** Neptune Beach shall participate in local government review and adoption proceeding of comprehensive plans and amendments for other municipalities within the Consolidated City of Jacksonville.
- G.01.01.06** The Neptune Beach City Council shall work with the City of Jacksonville, Jacksonville Beach, and Atlantic Beach for joint funding of recreation and utility improvements and housing rehabilitation.
- G.01.01.07** Neptune Beach shall continue to use the Northeast Florida Regional Planning Council's informal mediation process in resolving conflicts with other local units of government. (9J-5.015 (3)(c)(2))
- G.01.01.08** The City of Neptune Beach shall coordinate and cooperate with the City of Jacksonville in the management of joint estuarine systems. (9J-5.015(3)(c)(6))
- G.01.01.09** By 1991, the City of Neptune Beach shall develop a proposed interlocal agreement with Jacksonville Beach for the paving and maintenance of Seagate Avenue.

**Objective G.01.02**

By 1993, the City shall establish procedures to coordinate the Comprehensive Plan with the plans of the school board, Jacksonville Beach, Atlantic Beach, and the City of Jacksonville and other units of local government providing services in Neptune Beach that do not have regulatory authority over the use of land in the City. (9 J-5.015 (3) (b) (1) and (2))

**Policies**

- G.01.02.01** Neptune Beach should work towards the establishment of a Comprehensive Plan Coordinating Committee consisting of members from affected local governments and appropriate public and private entities for the purpose of reviewing development and policy proposals which would require amendments to the Comprehensive Plans.
- G.01.02.02** Neptune Beach shall file a written request with the City of Jacksonville, Jacksonville Beach, and Atlantic Beach to receive copies of proposed comprehensive plans or plan amendments and descriptions of proposed developments that may impact Neptune Beach for review.
- G.01.02.03** Neptune Beach shall review the adopted comprehensive plan, proposed plan amendments, and proposed developments in Neptune Beach to determine the relationships and impacts on the existing comprehensive plans of Atlantic Beach, Jacksonville Beach, and the City of Jacksonville. (9J-5.015 (3) (c) (5) and (7))

**Objective G.01.03**

**Levels of Service**

By 1994, establish a means by which levels of service standards are coordinated throughout the Consolidated City of Jacksonville. (9J-5.015 (3) (b) (3))

**Policies**

- G.01.03.01** Cooperate and assist in developing level of service standards for public facilities that can be adopted for the entire Consolidated City of Jacksonville that will provide the required services necessary for proposed development. (9J-5.015 (3) (c) (3))
- G.01.03.02** Coordinate public facility extension policies to ensure that required services will be available when needed and economically feasible.

**G.01.03.03** Use the Northeast Florida Regional Planning Council for informal mediation when level of service issues cannot be resolved by the Jacksonville City Council.

**Objective G.01.04**

By 1993, the City shall develop an intergovernmental coordination process to ensure full consideration is given to the impacts of developments in Neptune Beach on other governmental agencies. (9J-5.014(3) (b) (2) ).

**Policies**

**G.01.04.01** Establish formal liaisons with state and federal agencies that have permitting responsibilities in Neptune Beach.

**G.01.04.02** The Neptune Beach City Council shall request the expansion of the Jacksonville Metropolitan Planning Organization and the Technical Coordinating Committee to include representatives from Neptune Beach.

**Capital Improvements Element**

**Goal H.01**

The City shall undertake the implementation of those measures necessary to maintain the existing levels of service for each of the elements of the comprehensive plan and shall project the requirements annually for a 5-year period of time.

**Objective H.01.01**

The City shall initiate a Capital Improvement Program and a 5-year Capital Improvements Element that is designed to meet existing deficiencies, to accommodate desired future growth, and to replace obsolete and worn-out facilities. Capital improvements in the context of the Comprehensive Plan shall include the roadway system, potable water, sewage, drainage, recreation and open space facilities. (9J-5.016(3)(b)(1))

**Policies**

**H.01.01.01** Capital improvements in the context of the Comprehensive Plan shall be defined as those improvements which are limited to a one time minimum expenditure of \$25,000 including land and do not include expenditures for equipment, operations and maintenance costs. The funding of improvements of less than the minimum stipulated amount shall be included in the Capital Improvement Program and are subject to the criteria established in formulating

that specific program.

- H.01.01.02** The city shall maintain an inventory which includes all deficiencies as well as projected capital improvements requirements to satisfy deficiencies and meet projected demands in the referenced subject areas of the Comprehensive Plan.
- H.01.01.03** The Capital Improvements Element shall address components of the comprehensive plan whereas the Capital Improvements Program shall incorporate requirements for public safety and public buildings.
- H.01.01.04** The City shall create a Capital Improvements Coordinating Committee. The membership shall include the City Manager, Finance Director, Chief of Police, and the Director of Public Services. The Committee shall evaluate and rank projects by priority for inclusion in the 5-Year Schedule of Improvements.
- H.01.01.05** Proposed plan amendments and requests for new development or redevelopment shall be evaluated according to the following guidelines as to whether the proposed action would:
- a) contribute to a condition of public hazard as described in the Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Recharge Element, and Coastal Management Element;
  - b) exacerbate any existing condition of public facility capacity deficits, as described in the Traffic Circulation Element; Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Recharge Element; and Recreation and Open Space Element;
  - c) generate public facility demands that may be accommodated by capacity increases planned in the 5-year Schedule of Improvements;
  - d) conform with future land uses as shown on the future land use map of the Future Land Use Element, and urban service areas as described in the Sanitary Sewer, Solid Waste, Drainage, and Natural Groundwater Recharge Element;
  - e) if public facilities are developer-provided, accommodate public facility demands based upon

adopted LOS standards;

- f) if public facilities are provided, in part or whole, by the local government, demonstrate financial feasibility, subject to this element; and
- g) affect state agencies' and water management districts' facilities plans.  
(9J-5.016(3)(c)(1))

**Objective H.01.02**

The city shall minimize capital investment that subsidizes development in high-hazard coastal areas. (9J-5.016(3)(b)(2))

**Policies**

- H.01.02.01** The expenditure of public funds in high-hazard coastal areas shall be limited to those improvements included in the Coastal/Conservation Element and those expenditures necessary for the health and safety of the residents of these areas.
- H.01.02.02** Recreational facilities will continue to be provided within high-hazard coastal areas.
- H.01.02.03** Funds will be expended to maintain existing facilities and services at their existing capacity.

**Objective H.01.03**

The City shall adopt Level of Service (LOS) standards against which the adequacy and deficiencies of facilities may be measured. (9J-5.016(3)(b)(3))

**Policies**

- H.01.03.01** The standards for LEVEL OF SERVICE (LOS) which the City shall ensure are provided for new development, and which the City shall strive to meet where existing deficiencies are noted shall be in accordance with the following criteria:

| <u>Facility/Service Area</u> | <u>Level of Service Standard</u>                         |
|------------------------------|--|
| Traffic                      | LOS C for 24-hour traffic<br>LOS D for peak-hour traffic |
| Sanitary Sewer Facilities    | Average Sewage Generation Rate                           |
| Residential                  | 106 gallons per capita per day                           |

Commercial Minimum service shall be consistent with Chapter 10D-6, F.A.C.

Package Plant:  
Shady Lady Show Bar

Solid Waste Facilities Average Solid Waste Generation Rate; 7.1 pounds per capita per day

Drainage Facilities:

Stormwater Quantity:  
New Developments - 3-year frequency, 1-hour duration for drainage collection systems and pipes and 25-year frequency, 24-hour duration for retention ponds and basins;

Stormwater Quality:  
No discharge from any stormwater discharge facility shall cause or contribute to a violation of water quality standards as provided for by State Statutes. Further, the City shall develop and set regulations consistent with State regulations which will set a community accepted level of water quality standard for stormwater discharge facilities.

Potable Water Facilities

Residential Average Water Consumption Rate 129 gallons per capita per day.

Commercial Minimum service shall be consistent with Chapter 10D-6, F.A.C.

Neighborhood Park 2 acres/1,000 Residents

(9J-5.016(3)(c)(4))

**H.01.03.02** The city shall continually review the established local capital improvement LOS criteria on the basis of consistency with local comprehensive planning activities, cost feasibility, and effectiveness, relative magnitude and term of need, intergovernmental commitments, the ability to take advantage of other jurisdictional capital improvements and overall budget impacts.

**Objective H.01.04**

Although the City is virtually "built out", future development will bear a proportionate cost of facility improvements necessitated by the development in order to maintain adopted LOS standards. (9J-5.016(3)(b)(4))

**Policies**

**H.01.04.01** Proportionate costs of facility improvements shall include mandatory dedications or fees in lieu of as a condition of plat approval for the provision of recreation and open space.

**Objective H.01.05**

The city shall establish a system for prioritizing the scheduling of capital improvements to mitigate existing or projected deficiencies.

**Policies**

**H.01.05.01** The scheduling of existing public facility deficiencies in the capital improvement element shall be predicated on the following criteria to ensure that the projects are being ranked in the appropriate order of their need:

Priority A - projects currently underway for which the city is fully committed; those projects so urgently needed that implementation cannot be delayed; or those projects for which revenue bonds have been issued prior to the adoption of the Comprehensive Plan.

Priority B - projects needed to maintain the department or function at the current level of service.

Priority C - projects needed as soon as funds can reasonably be made available, or projects which are desirable but needing further study.

Priority D - projects needed but can be safely deferred beyond the third year of the five year projection.

**H.01.05.02** The city shall continually review the established local capital improvement prioritizing criteria on the basis of consistency with local comprehensive

planning activities, cost feasibility, and effectiveness, relative magnitude and term of need, intergovernmental commitments, the ability to take advantage of other jurisdictional capital improvements and overall budget impacts.

**Objective H.01.06**

Fiscal resources will be managed to ensure the provision of needed capital improvements for previously issued development orders and for future development and redevelopment. (9J-5.016(3)(c)(2))

**Policies**

- H.01.06.01** Adoption of a 6-year capital improvement program and annual capital budget will continue as a part of its budgeting process.
- H.01.06.02** Efforts shall be made to secure grants or private funds whenever available to finance the provision of capital improvements.
- H.01.06.03** The City shall reserve Enterprise Fund surpluses, unless indicated otherwise, for major capital expenditures beyond the year 1995.
- H.01.06.04** The ratio of outstanding indebtedness for projects which are not financed with the proceeds of revenue bonds shall not exceed ten percent (10%) of the property tax base in any given year.
- H.01.06.05** The City shall consider a range of revenue and project cost projections based on varying assumptions with regard to the local property tax base, shared tax revenues, inflation, contingency costs and the level and sources of shared project funding commitment by other jurisdictions.
- H.01.06.06** Where feasible, the Capital Program shall recognize specific funding sources for specific projects or project categories.
- H.01.07.07** The Director of Finance shall prepare annual estimates of anticipated proceeds from state revenue sharing source.
- H.01.07.08** The city shall adopt guidelines which set apportionment criteria for transportation generated revenues relative to operations, maintenance and capital improvements after debt service has been met.

**Objective H.01.08**

Decisions regarding the issuance of development orders and permits will be based upon coordination of the development requirements included in this plan, the land development regulations, and the availability of necessary public facilities needed to support such development at the time needed. (9J-5.016(3)(b)(3))

**Policies**

**H.01.08.01** The City shall use the LOS standards included in the Capital Improvement Element in reviewing the impacts of new development and redevelopment upon public facility provision.

**Objective H.01.09**

Fiscal resources will be managed to ensure the provision of needed capital improvements for previously issued development orders and for future development and redevelopment.

**Policies**

**H.01.09.01** In providing capital improvements, the city shall limit the maximum ratio of outstanding indebtedness to no more than 10 percent of the property tax base.

**H.01.09.02** The city shall adopt a Five-year capital improvement program and annual capital budget as part of its budgeting process.

**H.01.09.03** The city shall require that the local planning agency designate two (2) of its members to participate in the annual budget workshop sessions to ensure that deficiencies and future level of service requirements are duly considered.

**Objective H.01.10**

**Concurrency Management System**

The City shall adopt a Concurrency Management System by April 1, 1990.

**Policies**

**H.01.10.01** By April 1, 1991, the City of Neptune Beach shall adopt a Concurrency Management System that shall be use to ensure that public facilities are

provided to serve development and redevelopment projects.

**H.01.010.02** The following criteria shall be used in the Concurrency Management System to determine when concurrency has been satisfied:

Category 1

1. The necessary facilities and services are in place at the time a development permit is issued; or
2. A development permit is issued subject to the conditions that the necessary facilities and services will be in place when the impacts of development occur; or
3. The necessary facilities are under construction when a permit is issued; or
4. The necessary facilities and services are guaranteed in an enforceable development agreement that includes the provisions of 1, 2, and 3 above.

Category 2

1. The necessary facilities and services are subject to a binding executed contract which provides for commencement of construction or provision of the required facilities and services within one year of the issuance of the development permit; or
2. The necessary facilities and services are guaranteed in an enforceable development agreement that requires commencement of construction of the required facilities or provision of the required facilities and services within one year of the issuance of the development permit.

**H.01.10.03** For potable water, sanitary sewer, solid waste, and drainage, concurrency shall be met if one of the Category 1 provisions, as listed in Policy H.01.10.02, have been satisfied.

**H.01.10.04** For recreation and parks, concurrency shall be met if one of the Category 1 provisions or Category 2 provisions, as listed in Policy H.01.10.02, have been satisfied.

**H.01.10.05** For roads, concurrency shall be met if one of the Category 1 provisions or Category 2 provisions, as listed in Policy H.01.10.02, have been satisfied or if the road is scheduled for improvement prior

to the beginning of the fourth year of the adopted Five-Year Schedule of Capital Improvements.

- H.01.10.06** The City shall establish a monitoring system to monitor the remaining capacity and deficiencies of the public facilities addressed in the Capital Improvements Element.
- H.01.10.07** Prior to the approval of an application for a final subdivision plan or final site plan, the City shall review the proposed development application to ensure that public facilities needed to support development are available consistent with Policies H.01.10.03 through H.01.10.05.
- H.01.10.08** The City may approve developments in phases or stages.

**Objective H.01.11**

The City shall enact all rules, regulations and ordinances necessary to implement the Comprehensive Plan by April 1, 1991.

**Policies**

- H.01.11.01** The Goals, Objectives and Policies in the Capital Improvements Element of the Comprehensive Plan shall become effective April 1, 1991.

**Schedule of Capital Improvements**

The following table indicates those capital improvements to be funded through 1995.

Table 1.  
Five-Year Schedule of Capital Improvements

| Project                   | Target Year | Cost | Consistent With Elements |
|---------------------------|-------------|------|--------------------------|
| Traffic Facilities        |             |      |                          |
| None                      |             |      | Yes                      |
| Sanitary Sewer Facilities |             |      |                          |
| None                      |             |      | Yes                      |
| Solid Waste Facilities    |             |      |                          |
| None                      |             |      | Yes                      |
| Drainage Facilities       |             |      |                          |

|                          |     |
|--------------------------|-----|
| None                     | Yes |
| Potable Water Facilities |     |
| None                     | Yes |
| Recreation               |     |
| None                     | Yes |

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**Monitoring and Evaluation Procedures**

The Evaluation and Appraisal Reports (EAR) that will be prepared on a periodic basis are developed based on monitoring and evaluation procedures.

The following procedures are seen as necessary to accomplish both monitoring and evaluation for the preparation of the EAR. These procedures as outlined, however, are not all encompassing. It is recommended that after initial implementation of these procedures, the procedures themselves be assessed as to their adequacy under current administrative regulations and practices. Those deficiencies in the process would be addressed.

Considering the staffing levels in the City, it is especially important to determine whether there is sufficient staff to implement the specific goals, objectives, and policies.

**Organizational Inventory**

In order to efficiently monitor development activities it will be necessary to initially develop an Organization and Management framework. This framework will help to identify the jurisdictional responsibility for each policy.

The statutory and functional responsibility will have to be determined for each policy in order to determine the authorized and/or responsible operating entity.

**Draft Legislation**

Once the organizational inventory is completed, goals, objectives, and policies will then be reviewed to determine what legislative action will be required and by what date they need to be enacted.

These legislative actions could include new enabling legislation for departments or boards, amendments to current legislation, and repeal of current legislation. Draft legislation can be prepared either by the City attorney or by current staff members.

**Measurable Policy Inventory**

The most expedient means for effecting the measurable policy inventory would be through the development and use of a matrix. First, measurable policies will be identified by the staff. Second, the operational or enforcement mechanism will be identified for each of the policies identified. Third, the task or tasks required to monitor or measure the success or failure of the policy would be identified. Generally, once the baseline data has been established, it would be necessary to compare current conditions to the base year to determine any changes. The responsibility for the monitoring will also have to be assigned, since some of the data will be outside of the purview of the staff. Where baseline data does not exist, such data will have to be collected.

### **Public Participation**

Currently, the City Council is acting as the Local Planning Agency. Citizens should be appointed to this function as soon as possible.

The Local Planning Agency will be responsible for the preparation of the Evaluation and Appraisal Report (EAR) and consideration of all amendments to the Comprehensive Plan.

The following procedures are intended as basic guidelines for the public participation process.

1. The LPA meetings shall be held on a regular basis in a building with convenient access for the public.
2. Notice of these meetings will be published in appropriate locations and will state the time and location of the meetings.
3. All meetings shall be tape recorded as a permanent record of all transactions.
4. The chairperson shall encourage public participation of the public during these public meetings. For those who do want to speak publicly, the chairperson shall also accept written comments or questions.
5. The LPA shall respond to verbal or written comments, at the time they are asked or at the following regularly scheduled meeting.
6. Adoption of amendments to the comprehensive plan shall be conducted pursuant to applicable state legislation and regulations.

Once members are appointed to the LPA, a briefing session should be held to help familiarize them with the functions and duties of

the LPA.

**Adoption Ordinance**

(To be provided when adopted)

beginning of Maps

## **Introduction**

The Future Land Use Element consists of data and analysis with goals, objectives, and policies and a Future Land Use Map, which has been combined with Traffic Circulation. It should be pointed out at the outset that the Future Land Use and Traffic Circulation Map is not a zoning map. Rather, it sets forth the appropriate location for future land uses and guides the formation of subsequent policies and land development regulations which must be consistent with this element.

The City Of Neptune Beach encompasses an area of about 2.5 square miles and is predominantly residential. It has more than one mile of ocean beach with reasonably good access to the ocean for its residents. About 275 acres of marshland form a natural open space between the western edge of development and the Intracoastal Waterway.

## **Natural Resources**

### **Beaches and Shores**

Neptune Beach has approximately 1.2 miles of frontage along the Atlantic Ocean. For the most part, the beach area has been developed with residential units. A bulkhead runs the length of the beach. The beach area ranges from about 180 feet wide at the southern end to about 230 feet wide at the northern end. A complete description of the beach and dune systems is included in the Coastal/Conservation Element.

### **Wetland and Estuarine Systems**

The western boundary of the city limits is the Intracoastal Waterway. The city limits contain at least 275 acres of salt marsh in the Pablo Creek Estuary. This is part of a large area known as the Florida East Coast estuary which includes all the estuarine area adjacent to the Intracoastal Waterway from south Flagler County to the St. Johns River.

Two small water bodies are found in the City. Lake Neptune is located between Fifth Street and Third Street to the north of Oak Street. The second water body is found in Jarboe Park, which is situated between Fifth Street and Third Street and between Florida Boulevard and Bay Street.

Hopkins Creek originates in both Atlantic Beach to the north of Neptune Beach and in Jacksonville Beach to the south. It flows from the north and south and joins in Neptune Beach before it empties into Pablo Creek. A complete description of the wetlands and estuarine systems is included in the Coastal/Conservation Element.

### **Minerals and Soils**

Within the corporate limits of Neptune Beach, there are no commercially valuable mineral deposits. Map A-1, which shows the location of the different soil types, is based on Soil Survey of the City of Jacksonville, Duval County, Florida prepared by the USDA Soil Conservation Service. As depicted, there are 17 different soil types in Neptune Beach. Except for the wetland areas, the soils are suitable for the type of residential development that has occurred in Neptune Beach.

Soils Map

## Population Estimates and Projections

Table A-1 shows the population estimates and projections for Neptune Beach. A complete discussion concerning the sources and methodology used to derive these figures is included in the Forward to this document.

Table A-1.  
Population Estimates and Projections, Neptune Beach

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| Year | Projected<br>Population |
|------|-------------------------|
| 1985 | 5,909                   |
| 1990 | 6,458                   |
| 2000 | 6,856                   |
| 2005 | 7,122                   |
| 2010 | 7,384                   |

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Source: City of Jacksonville

### Existing Land Uses

A base map of existing land uses was prepared based on a windshield survey that was conducted in March, 1987. In addition to gathering land use statistics, the windshield survey provided the opportunity to experience the activities of the City and better understand its character. Other sources which were used in the preparation of the Plan include, but are not limited to, the following:

1. U.S. Geological Service maps;
2. Flood Hazard Boundaries from the U.S. Department of Housing and Urban Development;
3. Population data from the University of Florida;
4. Soil characteristics from the U.S. Soil Conservation Service;
5. U.S. Bureau of the Census; and
6. and other data from various City records.

The various land uses are graphically depicted on the Existing Land Use Map (Map A-2).

Existing land use map

As shown in Table A-2, a little more than 37 percent of the land is now developed for residential uses, while 37 percent of the land is vacant. It should be noted that almost 275 acres of the 581 acres of land recorded as vacant is marshland of the Intracoastal Waterway, and considerable acreage is in the flood plain and not developable. Several vacant parcels are not developable because of parcel shape and lack of accessibility.

Table A-2.  
Existing Land Uses, Neptune Beach: 1987

| Land Use  | Acres    | Percent of Total |
|---|----------|------------------|
| Residential (0 - 5 units/acre)                                      | 485.68   | 31.27            |
| Residential (5.1 - 10 units/acre)                                   | 73.18    | 4.71             |
| Residential (10.1 - 17 units/acre)                                  | 21.87    | 1.41             |
| Commercial - Sales, Service & Motel                                 | 56.14    | 3.61             |
| Commercial - Office & Prof. Services                                | 10.75    | .69              |
| Commercial - Entertainment, Lodges and Sports Facilities            | 2.78     | .18              |
| Public Services - Water & Sewer Treatment Electrical Power & Trans. | 17.91    | 1.15             |
| Public Schools  | 22.90    | 1.47             |
| Churches (including schools)  | 15.54    | 1.00             |
| Governmental  | 3.65     | .24              |
| Parks   | 12.12    | .78              |
| Vacant Land   | 581.29   | 37.43            |
| Street R.O.W.   | 249.26   | 16.05            |
| Total Land and Water  | 1,553.07 | 100.00           |

Source: Prosser, Hallock & Kristoff, Inc.

**Residential Use**

To describe some of the characteristics of the residential development, the City was divided into three geographic areas as depicted on Map A-3.

residential areas

### **Residential District "A"**

This residential area of mixed densities lies between Third Street and the Atlantic Ocean. There is a marked contrast in the character of this residential area with the character of the remaining residential areas of the City. Most of the lots in this area fall in the 5,000 to 6,000 square foot range. Typical of many oceanfront developments, large homes have been converted to apartments and many of the lots are occupied by more than one dwelling structure. Apartment units and single family units which were built on the rear of the lot, for the most part, have access from narrow alleyways and have very small yards. Unlike many oceanfront developments, however, this mixture of housing types and higher density is not undesirable.

Community pride is evidenced by well maintained homes and lawns and new homes that are being built in the area. There is some evidence of new construction and continued conversion from single family units to duplexes and multi-family.

All of the streets which are used for vehicular traffic, including alleys, are in good condition. Numerous street ends, some of which are improved for pedestrian use only, provide public access to the ocean.

### **Residential District "B"**

This area includes residential development between Third Street and Penman Road. The only large apartment complex in the City is located in this area. Tahitian Village Apartments contain 304 units on approximately 13.5 acres and is located adjacent to Fletcher High School on Seagate Avenue at the intersection of Penman Road. Park Place Apartments, located on Third Street between Magnolia Street and Bay Street, contain 32 units. Some scattered two and four family units are located in the southeast corner of this area east of Fifth Street and south of Florida Boulevard. Lots in this area range between 6,000 and 7,000 square feet and the streets are laid out in the traditional gridiron pattern. This portion is platted much like Residential Area "A", but for the most part, the lots contain only one dwelling.

The remainder of the area consists of single family dwelling units on lots ranging from 10,000 to 12,000 square feet. Some large estate type lots front on Penman Road.

Streets are well planned with large blocks, loop streets and cul-de-sacs, which discourage traffic and provide quiet living areas.

### **Residential District "C"**

This area includes portions of the City west of Penman Road. As in Area "B", most of the residential development is relatively new with well designed street systems providing quiet living areas. Single family lots range in size from 10,000 to 12,000 square feet.

There is heavy traffic on Florida Boulevard and causes traffic congestion where it intersects with Penman Road.

Forest Avenue and Kings Road serve as collector streets for the development south of Florida

Boulevard. While traffic is not heavy on Forest Avenue, its intersection with Penman Road creates a five point intersection which makes traffic control very difficult, especially at peak hours.

The residential development at the extreme northwest corner of this area at Atlantic Boulevard and Florida Boulevard differs considerably from the remainder of the area. The unusual pattern of streets forms a number of small, triangular blocks and a variety of lot sizes and shapes. A number of duplexes have been built north of Bay Road and a multiple family condominium development is located in the northwest corner at Atlantic Boulevard.

### **Commercial Use**

Commercial development occupies only about 69 acres, or about 4 percent of the land area. It is located along Atlantic Boulevard. The majority of which is occupied by two shopping centers.

Mixed commercial development surrounds City Hall from Atlantic Boulevard to Orange Street east of Second Street. Commercial development along Third Street extends southward from Atlantic Boulevard to Cherry Street on the east side, but on the west side of Third Street the commercial development extends southward to Jarboe Park at Florida Boulevard. There is no apparent conflict with commercial development along Third Street, since existing and future residential development is separated by a large drainage canal on its western edge. In general, the commercial areas are appropriately located and cause no serious land use conflicts.

### **Industrial Use**

Light industrial uses account for less than one acre or .05 percent of the total area. There are no heavy industrial uses.

### **Public Schools, Churches and Parks**

Within Neptune Beach there are two public schools: Fletcher High School on Seagate Avenue and Neptune Beach Elementary School on Florida Boulevard. Public schools account for nearly 23 acres, while churches account for 15.54 acres. The two public schools along with Jarboe Park on Florida Boulevard offer residents opportunities for organized recreational activities. Of course, the ocean beaches provide much of the open space and recreational needs of the community. Just over 12 acres are included as parks.

### **Street Rights-of-Way**

Of almost 29 miles of streets open for vehicular traffic in Neptune Beach, 27 miles are paved and are generally in good condition (Table A-3). Land for street right-of-ways accounts for 16 percent of the total land and water area of the City, or about 249 acres. Penman Road, Florida Boulevard and Third Street carry the largest volumes of traffic within the City limits. Florida Boulevard and Penman Road, south of Florida Boulevard, carry large volumes of traffic at peak hours. The biggest traffic conflict is at the five-point intersection of Florida Boulevard, Penman Road, and Forest Avenue.

Good platting of streets and lots abutting these heavily traveled thoroughfares has reduced the potential conflict between land use and traffic. The number of local street connections to Florida Boulevard has been limited and the lots have been platted to allow driveway access to individual homes from local streets rather than directly from Florida Boulevard. Along Penman Road, where homes front on this major thoroughfare, the lots have adequate depth to prevent the backing of vehicles into the right-of-way.

Table A-3.  
Street Rights-of-Way, Neptune Beach

| Type               | Miles        | Acres         |
|--------------------|--------------|---------------|
| Paved              | 27.50        | 215.90        |
| Unpaved (open)     | .78          | 5.69          |
| Unpaved (not open) | 3.89         | 27.27         |
| <b>Total</b>       | <b>32.17</b> | <b>249.26</b> |

Source: Prosser, Hallock & Kristoff, Inc.

**Historic Resources**

Based on the data and analysis, as presented in the Housing Element, there are no major historic resources, historic structures, or historic areas within Neptune Beach.

**Vacant, Undeveloped Land**

Vacant, developable land is scarce in Neptune Beach. As shown on the Existing Land Use Map, there are few sites with more than five acres.

**Existing and Planned Water Wells and Cones of Influence**

Neptune Beach has three water wells which are located in Jarboe Park. These wells have a combined capacity of 3 million gallons per day. Land uses around the park are primarily low and medium-density residential. The location of the wells are depicted on the Existing Land Use Map (Map A-2).

The City does not have plans for additional water wells at this time, nor are any recommended in the Potable Water Sub-Element.

### **Land Uses Adjacent to Neptune Beach**

The Existing Land Use Map (Map A-2) shows the land uses that abut the corporate limits of Neptune Beach. To the north in Atlantic Beach, the land uses are for the most part strip commercial along Atlantic Boulevard. In Jacksonville Beach, land uses are exclusively residential along Seagate Avenue, except for the parcel with the Junior High School. These land uses in the adjacent municipalities are for the most part consistent with the land uses in Neptune Beach.

### **Availability of Urban Services**

On June 15, 1987, the City Council passed a resolution that placed a moratorium on additional hook-ups to the existing sanitary sewer system. That moratorium was lifted when the capacity of the sewage treatment plant was increased to meet demand.

The extreme northwest corner of the City between Florida Boulevard, Oakhurst Drive, and Atlantic Boulevard, is not entirely served with public sewer. Developed lots not having access to public water and sewer have a septic tank to handle waste water disposal. Water pipes in this area are too small, drainage is inadequate, and some of the streets are unpaved.

The only other area in the City not served by public sewer is the Seagate Forest Subdivision. Water service here is adequate. Streets in this subdivision are unpaved, but the residents do not want them paved, because they feel that traffic will increase in their neighborhood.

### **Analysis of Existing Vacant or Undeveloped Land**

Neptune by the Sea, located in the northeast quadrant of the City, has about 20 acres to develop to complete the subdivision. This is planned to provide approximately 60 additional single family homesites. The predominant soils are Mandarin fine sand and Pottsburg fine sand with a small area of Ridgeland fine sand. Maximum potential for dwellings can be achieved through a good water control system. Such a system has been developed for this development.

In the northwest quadrant of the City, a triangular tract of land of approximately five acres will expand the Leeward Landing single-family subdivision. The predominate soils are Mandarin fine sand and Ridgeland fine sand which are developable for dwelling sites. The eastern portion of the property is in the flood plain and this property will probably produce about 12 additional single-family homesites.

Indian Trails subdivision can be expanded to the south in the adjacent six-acre tract. Except for a strip along the marsh in the floodplain, the remainder can be developed into about eight single-family lots.

The remainder of the developable land south of Indian Trails to Seagate Avenue and west of Kings Road has been divided by metes and bounds and approximately 14 homesite can be added in the developable land.

A large amount of land west of Penman Road is included in the floodplain. This area follows the marsh on the west, Hopkins Creek and broadens into a wide expansive area to the southeast to a man-made drainage canal just north of Seagate Forest. This land has severe soil limitations and is not acceptable for development.

The discussion thus far of vacant, developable land has just addressed that land proposed for residential development. It has been pointed out earlier that commercial development occupies less than four percent of the land. Retail commercial parallels the south side of Atlantic Boulevard and includes two shopping centers. Professional offices and the public library set the pattern of commercial development along the west side of Third Street from Orange Street to Jarboe Park at Florida Boulevard. Mixed commercial development surrounds the City Hall, Police and Fire station, which are located on the northwest corner of First Street and Lemon Street.

There is no vacant land available for large-scale commercial development. New commercial development must infill platted lots for the most part in those areas designated for commercial development.

Except for land in the floodplain, the discussion thus far had indicated that the remaining vacant land can be developed. There are no topographic, soil, or natural resources prohibiting development and there are no historic resources that will hinder conversion of this vacant land to an urban use. However, the following discussion concerning the availability of urban services have an impact on the development of these lands.

### **Land Needed to Accommodate the Future Population**

As stated earlier, Neptune Beach is almost fully developed and its boundary cannot expand. A comparison of Table A-2 with Table A-4 indicates that there is approximately 168 acres to be developed for low density residential uses. However, since Table A-2 was prepared from the land use field survey in 1987, most of the acreage has been subdivided into single family lots. This is evident by comparing the Existing Land Use Map A-2 with the Future Land Use and Traffic Circulation Plan Map, Map A-4.

Using the average of each density category for residential use, the additional 168.51 acres of low density residential land would allow 421 dwelling units, 5.2 acres of medium density would allow 39 dwelling units; and 3.8 acres of high density would allow 51 dwelling units, for a total of 511 additional dwelling units by 2010. At 2.3 persons per household the estimated additional population would be 1,175. Using the estimated population of 6,128 for 1987, the additional 1,175 would produce a 2010 population of 7,303. This compares favorably with the Jacksonville Planning Department projection of 7,384. The City is developing at a lower density and the build-out may produce less than projected.

Table A-4.  
Future Land Uses, Neptune Beach: 2010

| Land Use  | Acres    | Percent<br>of<br>Total |
|---|----------|------------------------|
| Residential Low 0-5 Units/Acre                                | 654.19   | 42.12                  |
| Residential Medium 5.1 - 10 Units/Acre                        | 78.38    | 5.05                   |
| Residential High 10.1 - 17 Units/Acre                         | 25.67    | 1.65                   |
| Commercial Low - Office and<br>Professional Services          | 16.55    | 1.07                   |
| Commercial Medium - Neighborhood<br>Retail, Sales and Service | 3.06     | 0.20                   |
| Commercial High - Community Retail<br>Sales and Services      | 70.84    | 4.56                   |
| Public Utilities  | 17.91    | 1.15                   |
| Recreation  | 12.12    | 0.78                   |
| Conservation/Wetlands   | 383.00   | 24.66                  |
| Governmental  | 3.65     | .24                    |
| Educational   | 22.90    | 1.47                   |
| Church (includes schools)                                     | 15.54    | 1.0                    |
| Street R.O.W.   | 249.26   | 16.05                  |
| Total Land and Water  | 1,553.07 | 100.00                 |

Source: Prosser, Hallock & Kristoff, Inc.

## **Future Land Use Plan**

The Future Land Use Plan brings together most of the other elements of the Comprehensive Plan. It forms the basis for decisions made in reviewing subdivisions, amendments to the zoning ordinance and map, and many other policy decisions that local officials must make.

It should be pointed out that the Future Land Use and Traffic Circulation Map have been combined and are included as Map A-4. This map is a graphic statement of the goals, objectives and policies of the Comprehensive Plan and not the plan in itself. Land use decisions must be evaluated in light of all the recommendations made in all elements of the Comprehensive Plan.

It is the stated goal of this element to maintain and enhance the residential character of Neptune Beach. The residential development is predominately low density, single family dwelling units which are of good quality. The densities of the residential development are well defined.

That area east of Third Street to the ocean is characterized by a mixture of single family, duplexes and medium density multi-family dwellings. This older, ocean front development has a gridiron pattern of streets with small lots and blocks. The Future Land Use Map designates this area as medium density, not to exceed 10 dwelling units per acre.

Many of the blocks between First Street and the ocean have service alleys which are now used as public streets to serve dwelling units which have been constructed on the rear of many of the lots.

The 22 east-west streets give public access to the ocean for the citizens who live inland. As in the past, the city should not approve high density developments along the beach front which might combine lots and close these public rights-of-way for private use. In an attempt to maintain the residential integrity of this oceanfront residential neighborhood, the city has closed sections of First Street to prevent "through" traffic.

The prohibition of commercial encroachment into the residential neighborhood should continue. As the traffic increases on Third Street, there will be pressures to convert residential uses to commercial uses along this route. This will compound the traffic congestion on Third Street and create conflicts in land uses which will deteriorate the residential character of the area.

That area between Third Street and Penman Road is platted as single family residential and, for the most part, has been developed. The development does not exceed the maximum density of five dwelling units per acre, as indicated on the map. These subdivisions have been linked together with minor residential streets for internal pedestrian and bicycle circulation, as well as vehicular circulation.

The land fronting on Atlantic Boulevard is developing as strip shopping centers and intensive commercial use and is so designated on the map. That area fronting on Third Street, however, is

developing as low intensity commercial with offices, libraries, and similar uses. The plan proposes the continuation of this low-intensity development within the boundary shown, but further expansion is discouraged.

For the most part, the land use west of Penman Road to the Intracoastal Waterway consists of relatively new single family residential developments. There are vacant lots in some of the subdivisions, but construction is taking place on a good number of them at the present time. The plan proposes that the remaining buildable land in this area be developed as low-density residential at a density not to exceed five dwelling units per acre.

The plan proposes some residential uses in that area around the intersection of Atlantic Boulevard and Florida Boulevard. The southern boundary of this area is Acacia Road and Oakhurst Drive. The area south of Bay Road and west of Florida Boulevard is proposed for low-density residential, a pattern already developing. The area north of Bay Road on the west side of Florida Boulevard and abutting the commercial development on Atlantic Boulevard is proposed for medium density residential development. Some high density condominiums have been built west of Bartolome Road and some additional land in this immediate vicinity has been designated as high density residential. However, some improvement in vehicular access should be made as part of development approval for high density development.

Medium density residential development is proposed east of Florida Boulevard in the remaining vacant area to the rear of the commercial development on Atlantic Boulevard. This area is planned for patio homes and is developing according to the plan.

The pattern of commercial development has been established and the plan proposes no additional commercial areas, except for the filling in of land along Atlantic Boulevard. As this infilling process takes place, however, it is important to consider intensities of commercial uses.

Higher intensity uses that generate large volumes of traffic and require extensive parking areas, such as service stations, motels, and shopping centers, are better located where cross traffic can be controlled. Such controls include traffic lights at intersections of major streets and protected left turns in median strips. The stretch of Atlantic Boulevard for these uses are from approximately Hopkins Creek east to First Street. Due to the limited access to those commercial areas on Atlantic Boulevard west of Hopkins Creek caused by the Mayport Road Overpass, these areas should be limited to medium intensity commercial development. These uses might include convenience goods and services oriented to the neighborhood and not oriented to highway traffic.

Light intensity commercial uses, such as professional offices, should be limited to that area already defined. This area lies on the west side of Third Street from approximately Atlantic Boulevard to Jarboe Park at Florida Boulevard. There is ample space for expansion within this district. These light intensity uses can also be located at the fringes of higher intensity commercial areas to serve as a transition between commercial and residential uses.

## **Analysis of Slum and Blighted Conditions**

The location and extent of blighted areas and land uses that are inconsistent with the community's character are important considerations in preparing the Future Land Use Map.

For the purpose of this element, blighted areas are those areas that would qualify as blighted or as a slum area under the Community Redevelopment Act of 1969, Chapter 163, Part III, of the Florida Statutes.

That legislation uses two definitions for a blighted area. Under the first definition, a blighted area is an area where there are a substantial number of slum, deteriorated, or deteriorating structures and conditions which endanger life or property, or where inadequate street layout, unsanitary or unsafe conditions, deterioration, tax or special assessment delinquency exceeding the fair value of the land, diversity of ownership or defective or unusual title conditions impairs or arrests sound growth. The second definition describes an area where there is inadequate street layout, or inadequate public facilities such as parking, roadways, bridges, or public transportation facilities.

By definition, a slum area is characterized by a predominance of buildings which by reason of dilapidation, deterioration, age, or obsolescence; inadequate provision of ventilation, light, air, sanitation, or open spaces; overcrowding which promote conditions which endanger life or property.

Blighted areas are social and economic liabilities which if not addressed, will maintain undesirable living conditions, hinder economic development, and sound growth of the county.

As shown in the housing inventory conducted for the Housing Element, there are currently no substandard housing units in the City of Neptune Beach and there are no areas that would fit the definition of slum and blight. Although there is no need for redevelopment at the current time, the City should develop appropriate measures to maintain the housing stock as it ages.

Future Land use Map

## **Introduction**

The purpose of the Traffic Circulation Element is to analyze existing and future needs of the traffic circulation system in the City.

The Traffic Circulation Element and the Future Land Use Element are directly related and it is difficult to consider one without the other, since the intensity of land development is dependant upon street capacity. The Future Land Use Element points out that the higher densities should have direct access to major thoroughfares.

The circulation routes that are primarily considered in this element include freeways, principal arterials, minor arterials, and collector streets. These serve the function of traffic circulation movement and circulation. Local streets, in contrast, function as property access. These are addressed in this element, but only in a limited way.

The major transportation routes in Neptune Beach include Atlantic Boulevard, Penman Road, Seagate Avenue, Third Street (A1A), and Florida Boulevard. Atlantic Boulevard is a major east-west access route for those coming into Neptune Beach from Jacksonville. Third Street (A1A) is a major north-south route with heavy use from Atlantic Beach and Jacksonville Beach. Florida Boulevard is another major east-west route that runs through the center of the City.

## **Inventory of the Existing Roadway System**

The Florida Department of Transportation (DOT) uses a functional roadway classification system with a hierarchy of four basic types in the vehicular transportation system. They include freeway, principal arterial, minor arterial, and collector. The following sections describe those streets in Neptune Beach within each of those categories.

### **Freeway**

Neptune Beach does not contain any road segments classified as limited access.

### **Principal Arterial**

Atlantic Boulevard from the Intracoastal Waterway to Third Street is the only principal arterial in Neptune Beach. It is a six-laned roadway.

Existing Traffic Circulation

**Minor Arterial**

Florida Boulevard from Atlantic Boulevard to Third Street, and Penman Road from Florida Boulevard to Atlantic Avenue are both two-laned minor arterials. From Atlantic Boulevard to Seagate Avenue, Third Street, is also a minor arterial, but it is a four-laned road.

**Collector**

Seagate Avenue and Penman Road from Florida Boulevard to Seagate Avenue are two-laned collectors. They carry traffic between the local streets and the arterials.

**Traffic Circulation Analysis****Traffic Capacity**

Neptune Beach is part of the Jacksonville Metropolitan Planning Organization (MPO). The Jacksonville MPO has adopted a level of service "C" for the 24 hour traffic and a level of service "D" for peak hour traffic. The roadways in the DOT functional classification system are operating generally above capacity and their desired level of service.

Growth in the other adjacent communities and at the Mayport Naval Complex could cause traffic problems in Neptune Beach. Coordination of the growth projected for the beach communities in their Comprehensive Plans and in the Master Plan for the Mayport Naval Complex is required to adequately plan for the transportation in Neptune Beach. Improvements planned for roadways outside the city limits could greatly improve traffic circulation in the city.

**Traffic Conditions**

The traffic circulation and roadway conditions are generally good in Neptune Beach. The traffic problem areas in Neptune Beach are between Third Street and the beach, especially during the peak beach season. The roadways near the beach get very congested due to the parking that occurs along the streets. Many times the parked cars cause two-lane streets to function as one-way streets. This causes added congestion as cars must wait as other cars are allowed to pass.

The "five points" area is the intersection of Penman Road, Florida Boulevard, and Forest Boulevard. This area gets congested and is very confusing to motorists. Penman Road is the major north-south road on the west side of Neptune Beach and Florida Boulevard is the major east-west roadway through the center of Neptune Beach. Florida Boulevard is also used as an alternate route to go from Third Street to Atlantic Boulevard and the Mayport Road/Mayport Naval Base area.

**Traffic Volume**

Traffic has been steadily increasing on the roads in Neptune Beach. This growth far exceeds the growth in population that has occurred in Neptune Beach. Table B-1 shows this steady increase in average daily traffic.

The volume of traffic has been increasing the fastest on Atlantic Boulevard from the Intracoastal to Mayport Road. It seems that the traffic volume decreases on Atlantic Boulevard in the eastern portion of the city. The heavy volume of traffic near Mayport Road can be attributed to two primary factors: the increase in the number of military and civilians stationed at the Mayport Naval Base and the amount of "pass-through" traffic on Florida Boulevard. This second factor is further substantiated by the higher traffic volume on Third Street at Seagate in comparison to the higher traffic volume on Third Street 100 feet south of Atlantic Boulevard.

### Accident Frequency Data

The accident report data compiled by the Neptune Beach Police Department also illustrate the increased volumes of traffic on Atlantic Boulevard. Traffic accidents increased substantially on Atlantic Boulevard from 1985-86. The accident frequency data also supports the assumption that the "five points" area is a problem area.

Table B-2.  
Accident Frequency Data, Neptune Beach

| Road               | Location of Accident | 1985 | 1986 | Percent Difference 1985-86 |
|--------------------|----------------------|------|------|----------------------------|
| 3rd Street A1A     | Atlantic Boulevard   | 13   | 6    | -53.8                      |
|                    | Florida Boulevard    | 11   | 7    | -36.4                      |
|                    | Seagate Avenue       | 2    | 0    | -100.0                     |
|                    | All other locations  | 41   | 60   | +46.3                      |
| Florida Boulevard  | Atlantic Boulevard   | 4    | 7    | +75.0                      |
|                    | Penman Road          | 6    | 10   | +66.6                      |
|                    | 3rd Street           | 1    | 1    | --                         |
|                    | All other locations  | 26   | 20   | -23.1                      |
| Atlantic Boulevard | 3rd Street           | 2    | 7    | +250.0                     |
|                    | Mayport Road         | 3    | 2    | -33.3                      |
|                    | Penman Road          | 8    | 29   | +262.5                     |
|                    | Florida Boulevard    | 7    | 15   | +114.3                     |
|                    | Sherry Drive         | 4    | 6    | +50.0                      |
|                    | All other locations  | 66   | 58   | -12.1                      |
| Penman Road        | Atlantic Boulevard   | 9    | 10   | +11.1                      |
|                    | Florida Boulevard    | 3    | 6    | +100.0                     |
|                    | Seagate Avenue       | 3    | 2    | -33.3                      |
|                    | All other locations  | 13   | 15   | +15.4                      |

Source: Neptune Beach Police Department  
Fleet & Associates, 1987

## **Traffic Circulation Analysis**

Table B-3 presents the estimated LOS for 1989 and LOS projections for 1995 and 2010. The projections assume that no improvements are made to the road segment and is used in the development of the Traffic Circulation Plan. The projections are based on historical traffic volume data from 1979 and 1989.

The LOS estimates shown have been determined by comparison of the AADT values for each roadway segment with the generalized maximum daily service volumes as displayed in Table B-4. The maximum daily service volumes for various levels of service depend on the number of lanes available, the roadway functional classification, whether the road segment is in an urban or rural area, and the number of signalized intersections per mile if the roadway is a principal or minor arterial in an urban area. The values displayed in Table B-4 were taken from the Level of Service Standards and Guidelines Manual. These values take into consideration the average variation in traffic volumes throughout the day. Therefore, the Level of Service shown for each roadway segment is an indication of traffic operation conditions during the peak hour period of average weekdays.

During 1989, two segments were operating at an LOS of "F", while the remaining segments were above this level. By 1995, the projections indicate that all but one of the road segments will be operating at an LOS of "F".

By 2010, it is projected that all of the road segments will operate at an LOS of "F".

### **Planning Issues**

The five-year Transportation Plan for the Florida Department of Transportation (DOT) or the Jacksonville MPO do not contain any specific improvements for the Neptune Beach Area. The DOT and the Jacksonville Transportation Authority are currently funding a study to investigate the extension of Wonderwood Drive, located in the Mayport area, across the Intracoastal Waterway. If constructed, the Wonderwood Drive extension would improve traffic circulation in Neptune Beach by decreasing the amount of "pass-through" traffic. Improvements are needed at the Mayport Road/Atlantic Boulevard intersection, both the MPO and DOT will not program any improvements at that intersection until a decision has been made on the construction of the Wonderwood Drive extension.

Traffic circulation at the "five points area" could be improved by a slight rerouting of Forest Boulevard. This would reduce the intersection to a normal four-way intersection.

The major traffic circulation system for Neptune Beach is under the jurisdiction of the MPO for funding improvements because the major routes through the city are components of the FDOT functional classification system. Most of the traffic, especially peak hour, is "pass through" traffic and not traffic generated by residents of Neptune Beach.

The City of Neptune Beach should coordinate with the other beach communities and the Jacksonville MPO to improve traffic in and to the beach communities. Improvements such as the Wonderwood Drive extension or improvements of San Pablo Road would reduce the "pass-through" traffic and improve traffic circulation in Neptune Beach.

### **Traffic Circulation Plan**

Neptune Beach is located between the cities of Jacksonville Beach and Atlantic Beach. Much of the traffic which the streets of Neptune Beach must accommodate is not generated by its residents, but by these cities to the north and south. A large portion of peak hour traffic uses the Florida Boulevard-Penman Road route to and from Mayport Naval Station. Penman Road and Third Street carry large volumes of traffic between Atlantic Beach and Jacksonville Beach. They also serve as the end connector of the Beach Boulevard-Atlantic Boulevard loop from the mainland of the Jacksonville metropolitan area.

Atlantic Boulevard is designated as a principal arterial by the Florida Department of Transportation (DOT). Florida Boulevard, Third Street, and Penman Road from Florida Boulevard to Seagate Avenue are designated as minor arterials in the circulation system. Penman Road from Florida Boulevard to Atlantic Boulevard and Seagate Avenue are designated as collectors. Penman Road has been upgraded to three lanes, allowing for protected left turns, south of Florida Boulevard. Presently, Third Street is four lanes with a median strip and protected left turn lanes.

No new arterials or collectors are proposed in the traffic circulation system for Neptune Beach.

The most congested intersection in the City is located where Forest Avenue and Florida Boulevard converge at Penman Road forming a five-way intersection. The current comprehensive plan called for Forest Avenue to be diverted to Florida Avenue west of this intersection. For various reasons this was not accomplished. It is recommended that this intersection be the subject of a detailed traffic engineering study to improve traffic circulation and public safety.

The general location of an internal bicycle/pedestrian path system is shown on the plan as an alternative transportation system as well as a recreational amenity. Between Penman Road and Third Street this system would provide pedestrian and bicycle paths connecting Fletcher High School, Jarboe Park, and the shopping centers on Atlantic Boulevard. The basic improvement would be the addition of such paved paths within existing rights of way. The route has varying rights-of-way and some sidewalks already exist.

West of Penman Road, the proposed bike path would follow Seagate Avenue, which is unpaved and Kings Road and Forest Boulevard. This would connect with the existing walk/bikeway along Florida Boulevard. The closing of sections of First Street to prevent through vehicular traffic, which has recently been accomplished, offers an excellent opportunity for bike travel

along its route. In order for a bike path to be constructed along this route, a bridge would be required on Seagate Avenue west of Penman Road. In order to implement this, a study should be completed that would determine the exact costs.

The Future Land Use and Traffic Circulation Plan (Map A-4 in the Future Land Use Element) shows the interrelationship of these traffic proposals with other elements of the Comprehensive Plan.

## **Introduction**

As stated in 9J-5.010 FAC, the purpose of the Housing Element is to analyze the adequacy of the existing housing stock and its affordability; project future housing needs; and to make recommendations concerning housing in the City. This analysis serves as the basis for formulating suitable goals, objectives, and policies for encouraging the market forces to provide an adequate supply of housing units.

Throughout this report, two issues are of primary importance: the adequacy of housing units and the affordability of those units. Ideally, the ultimate goal is to ensure that the housing units are safe and have standard facilities and to ensure that low and moderate income residents can find affordable housing units that fit their circumstance.

Unlike other elements in the Comprehensive Plan that address direct public sector action and responsibility, the Housing Element addresses an important concern which is largely provided by the private sector. The role of the public sector in providing affordable housing has historically been indirect and rather limited. Beyond encouraging the private sector to build affordable housing, the public sector plays a very minor role in actually providing affordable housing, especially at the local level. This report should, therefore, be read in that context.

## **Housing Inventory**

Using the data contained in the 1980 Census of Population and Housing, as the primary source, the next sections focus on the housing composition, tenure, age of the housing stock, housing costs, rental costs, housing conditions, overcrowding, special housing characteristics, and housing trends since 1980. A glossary of terms is included at the end of this element to describe the housing terms used.

### **Housing Composition**

Based on data collected by the U.S. Bureau of the Census, there were 2,479 dwelling units in 1980 (Table C-1). Approximately 56 percent of the units were single family, 19 percent duplex units, and 10 percent of the units were in three and four unit structures. Only five mobile homes were identified.

Between 1980 and 1986, a total of 423 units were added to the housing stock, or 275 single family units and 148 duplex units (Table C-1). No multi-family structures were added between 1980 and 1986.

Table C-1.  
Housing Units by Type, Neptune Beach: 1980 and 1986

| Year | Family     | Duplex | 3 - 4<br>Units | 5 +<br>Units | Mobile<br>Homes | Total |
|------|------------|--------|----------------|--------------|-----------------|-------|
| 1980 | 1,401      | 478    | 253            | 342          | 5               | 2,479 |
| 1986 | 1,676      | 626    | 253            | 342          | 5               | 2,902 |
|      | Percentage |        |                |              |                 |       |
| 1980 | 56.5       | 19.3   | 10.2           | 13.8         | 0.2             | 100.0 |
| 1986 | 57.8       | 21.6   | 8.6            | 11.8         | 0.2             | 100.0 |

Source: 1980 Census of Population and Housing, Tape 3A, Neptune Beach

To more accurately inventory the housing stock and identify the location, condition, and type of housing in the City, a windshield survey was conducted in March of 1987. From that survey, a total of 2,957 housing units were identified. The dominate housing type in the City was the single family dwelling unit, accounting for over 31 percent of the land area. Single family dwelling units were found throughout the City.

Duplex, triplexes, and quadruplexes were primarily located in two areas in the City. The first area was between Third Street and the Atlantic Ocean, while the other area was in the northwest portion of the City between Florida Boulevard, Atlantic Boulevard, Oakhurst/Arcacia Road and the Intracoastal Waterway. These units comprise over one percent of the land use.

The remaining housing units in the City are contained in two multi-family complexes, one on Third Street and one on Penman Road at Seagate Avenue. The housing in Neptune Beach was in generally excellent condition.

### **Projected Housing Need by Type**

In 1980, 58 percent of the dwelling units were single family units, while the remaining 42 percent were multi-family units. Because of the limited residential development in the City, it is expected that the distribution will not appreciably change over the planning period as shown in the following table.

Table C-\_\_\_\_.  
 Projected Dwelling Units by Type: 1980 through 2010

| Units | Percent | <u>Single Family</u> | <u>Multi-Family</u> | Total Year |       |
|-------|---------|----------------------|---------------------|------------|-------|
|       |         | Units                | Percent             | Units      |       |
| 1980  | 1,433   | 58                   | 1,037               | 42         | 2,470 |
| 1990  | 1,709   | 58                   | 1,237               | 42         | 2,946 |
| 1995  | 1,782   | 58                   | 1,291               | 42         | 3,073 |
| 2000  | 1,915   | 58                   | 1,386               | 42         | 3,301 |
| 2005  | 2,028   | 58                   | 1,468               | 42         | 3,496 |
| 2010  | 2,103   | 58                   | 1,522               | 42         | 3,625 |

Source: Prosser, Hallock & Kristoff, Inc.

### Housing Tenure

As shown in Table C-2, 1,632 dwelling units were owner-occupied, or approximately 66 percent of all units. Between 1980 and 1986, the percentage of owner-occupied and renter-occupied did not change.

Table C-2.  
 Housing Tenure, Neptune Beach: 1980 and 1986

| Year | <u>Owner-Occupied</u> |         | <u>Renter-Occupied</u> |         | <u>Housing Units</u> |         |
|------|-----------------------|---------|------------------------|---------|----------------------|---------|
|      | Units                 | Percent | Units                  | Percent | Units                | Percent |
| 1980 | 1,632                 | 65.8    | 847                    | 34.2    | 2,479                | 100.0   |
| 1986 | 1,910                 | 65.8    | 992                    | 34.2    | 2,902                | 100.0   |

Source: 1980 Census of Population and Housing, Tape 3A, Neptune Beach

### Age of Housing

As Table C-3 illustrates, over 60 percent of the dwelling units were constructed after 1960. Only 16 percent of the units were built before 1949.

Table C-3.  
Age of Housing, Neptune Beach

| Year Constructed | Units | Percent |
|------------------|-------|---------|
| 1981-1986        | 423   | 14.6    |
| 1970-1980        | 670   | 23.1    |
| 1960-1969        | 803   | 27.7    |
| 1950-1959        | 530   | 18.3    |
| 1940-1949        | 242   | 8.3     |
| 1939 and Earlier | 234   | 8.0     |
| Total            | 2,902 | 100.0   |

Source: 1980 Census of Population and Housing, Tape 3A, Neptune Beach

### Housing Costs

The mortgage status and monthly owner costs for specified owner-occupied housing units in 1980 are presented in Table C-4. Of the 1,094 owner-occupied dwelling units in 1980, 855, or 78 percent, had a mortgage. Most of the owner-occupied units with a mortgage had a mortgage between \$500 and \$749. Fewer than 20 percent had a mortgage of less than \$300, while nearly 8 percent had a monthly mortgage in excess of \$750.

In 1980, the majority of owners (47.3%) that did not have a mortgage had monthly costs between \$125 and \$199. About 30 percent had monthly expenses less than \$125.

### Value of Specified Owner-Occupied Housing

As determined by the 1980 Census, the mean value of specified owner-occupied noncondominium housing units was \$57,703.

Table C-4.  
Monthly Costs for Specified Owner-Occupied Housing Units,  
Neptune Beach: 1980

| Monthly Costs      | Units | Percent |
|--------------------|-------|---------|
| With A Mortgage    |       |         |
| \$199 or Less      | 40    | 4.6     |
| \$200 - 299        | 124   | 14.5    |
| \$300 - 399        | 205   | 24.0    |
| \$400 - 499        | 129   | 15.1    |
| \$500 - 749        | 290   | 34.0    |
| \$750 or More      | 67    | 7.8     |
| Subtotal           | 855   | 100.0   |
| Without A Mortgage |       |         |
| Under \$125        | 72    | 30.1    |
| \$125 - 199        | 113   | 47.3    |
| \$200 - 249        | 49    | 20.5    |
| \$250 or More      | 5     | 2.1     |
| Subtotal           | 239   | 100.0   |

Source: 1980 Census of Population and Housing, Tape 3A, Neptune Beach.

### Rental Costs

Table C-5 shows the number of rental units in each of the categories for gross monthly rent. The majority of renters (61.9%) in 1979 had monthly expenses between \$300 and \$399. Relatively few renters had expenses that were higher than \$500.

Table C-5.  
Specified Renter-Occupied Housing Units by Gross Monthly Rent,  
Neptune Beach: 1979

| Gross Monthly Rent | Units | Percent |
|--------------------|-------|---------|
| Under \$120        | 0     | 0.0     |
| \$120 - 199        | 116   | 20.4    |
| \$300 - 399        | 353   | 61.9    |
| \$400 - 499        | 69    | 12.1    |
| \$500 or More      | 32    | 5.6     |
| Total              | 570   | 100.0   |

Source: 1980 Census of Population and Housing, Tape 3A, Neptune Beach

As illustrated in Table C-6 228 renters spent less than 20 percent of their household income in rent in 1979. In contrast, nearly the same number of renters, 244, spent more than 35 percent of their household income for gross rental expenses.

Table C-6.  
Specified Renter-Occupied Housing Units by Household Income  
by Gross Rent as a Percentage of Income, Neptune Beach: 1979

| Percent      | Less Than 5,000 | \$5,000 to 9,999 | \$10,000 to 14,999 | \$15,000 to 19,999 | \$20,000 Or More | Total |
|--------------|-----------------|------------------|--------------------|--------------------|------------------|-------|
| Less than 20 | 0               | 0                | 51                 | 30                 | 147              | 228   |
| 20 - 24      | 0               | 15               | 43                 | 44                 | 38               | 140   |
| 25 - 34      | 0               | 53               | 129                | 29                 | 12               | 223   |
| 35 or More   | 80              | 128              | 36                 | 0                  | 0                | 244   |
| Not computed | 28              |                  |                    |                    |                  |       |

Source: 1980 Census of Population and Housing, Tape 3A, Neptune Beach

### **Comparison of Neptune Beach Housing to Jacksonville/Duval County**

The housing characteristics of Neptune Beach are very similar to the suburban areas of Jacksonville/Duval County. The suburban areas of Jacksonville have a high percentage of single family housing with an increasing percentage of multi-family units (duplexes included) in the housing stock. The housing units are predominately owner-occupied. The housing units in both cases are generally in standard condition.

### **Housing Conditions**

A windshield survey was conducted in the summer of 1987 to quantify the extent of substandard housing in the City. Dwellings were classified as: Standard (A condition, Minor Deterioration (B condition), Major Deterioration (C condition), or Dilapidated (D condition). This criteria is also used by the City of Jacksonville/Duval County. The criteria matrix used to evaluate the condition of the dwelling units is included as Exhibit C-1.

Based on this survey, the City does not contain any substandard housing. A few housing units in the area between Third Street and the Atlantic Ocean are in need of general maintenance such as repainting.

### **Housing Units Lacking Plumbing Facilities, Complete Kitchen Facilities and Central Heat**

All of the occupied housing units in Neptune Beach contain full plumbing and kitchen facilities. Only 444 units do not contain a central heating system. Many of these units use room type or other heaters. Only five units do not contain any type of heating units at all.

### **Overcrowding**

Based on the U. S. Census Bureau's definition of overcrowding, over 1.01 persons per room, only 22 units in Neptune Beach would be classified as overcrowded.

### **Special Housing Characteristics**

Neptune Beach does not have any housing developments using federal, state, or local subsidies. Three housing units are occupied by participants in the Section 8, Housing Assistance Payments Program.

Neptune Beach does not have any group homes licensed by the Florida Department of Health and Rehabilitative Services. The City does not have any mobile home parks.

Exhibit C-1

### **Historic Housing**

Within Neptune Beach there are no housing units that are listed on the Florida Master Site File or on the National Register of Historic Places. In addition, there are no homes that have been designated as historically significant by or in accordance with a local ordinance.

The Jacksonville Landmarks Commission in its inventory of Duval County has identified five historic residential structures in Neptune Beach. According to the inventory, four of the five structures were rated as having slight significance. One structure was rated as having moderate significance to the city and great value to the immediate neighborhood. These structures are currently not designated for protection by any city ordinance.

### **Housing Trends Since 1980**

Since the 1980 Census, new construction has been primarily limited to single family and duplex housing units. A few single family units between Third Street and the Atlantic Ocean have been converted to duplexes. A total of 423 dwelling units, 275 single family units and 148 duplex units have been added between 1980 and 1986 to the Neptune Beach housing stock.

The construction of the single family units have occurred primarily as infill construction on lots in developed subdivisions throughout the western portion of the City. Two new subdivisions have been platted and developed since the 1980 Census. Duplex housing construction has occurred in the northwest quarter of the City, west of Florida Boulevard and south of Atlantic Boulevard and in the area closest to the Ocean west of Third Street.

### **Housing Analysis**

This section of the element looks at the following areas of concern in providing adequate and affordable housing: household size, age of household head, income range of households, future housing needs, land requirements to meet the housing needs, private sector and the housing supply, the housing delivery system. This section concludes with recommendations.

**Population and Household Size**

Table C-7 shows the population estimates and projections that are used to calculate the number of housing units based on average household size. See the forward to the Comprehensive Plan for a discussion on the methodology used to derive estimates and projections.

Table C-7.  
Population Estimates and Projections, Neptune Beach

| Year | Estimated Population |
|------|----------------------|
| 1985 | 5,909                |
| 1995 | 6,458                |
| 2000 | 6,856                |
| 2005 | 7,122                |
| 2010 | 7,384                |

Source: City of Jacksonville

Household size in Neptune Beach is projected to decrease as illustrated in Table C-8. This is based on the national trend of smaller families as persons are generally having children later and the children generally move out of their parent's homes in their late teens/early twenties. Neptune Beach household size is also declining as many persons "retire" the beach communities. These empty nesters reduce the household size.

Table C-8.  
Projected Population and Household Size, Neptune Beach

| Year | Estimated Population | Household Size | Dwelling Units | Occupied Dwelling Units |
|------|----------------------|----------------|----------------|-------------------------|
| 1980 | 5,248                | 2.40           | 2,470          | 2,185                   |
| 1985 | 5,909                | 2.36           | 2,818          | 2,502                   |
| 1995 | 6,458                | 2.35           | 3,073          | 2,744                   |
| 2000 | 6,856                | 2.30           | 3,301          | 2,980                   |
| 2005 | 7,122                | 2.25           | 3,496          | 3,159                   |
| 2010 | 7,384                | 2.25           | 3,625          | 3,274                   |

Source: City of Jacksonville  
Fleet & Associates, 1987

The population is projected to increase from 5,248 in 1980 to 7,384 in the year 2010. Household size is projected to decrease from 2.40 in 1980 to 2.25 in 2010. The number of dwelling units is projected to increase from 2,470 in 1980 to 3,625 in 2010. The city would increase its population by 2,136 and add 1,155 dwelling units to the housing stock.

Table C-9.  
Household Size and Persons Per Household, Neptune Beach:  
1980 through 2010

| Year | 1<br>Person | 2<br>Persons | 3 to 4<br>Persons | 5<br>Persons<br>Or<br>More | Total | Persons<br>Per<br>House-<br>hold |
|------|-------------|--------------|-------------------|----------------------------|-------|----------------------------------|
| 1980 | 567         | 830          | 641               | 170                        | 2,208 | 2.38                             |
| 1985 | 636         | 931          | 718               | 191                        | 2,476 | 2.38                             |
| 1995 | 698         | 1,021        | 7887              | 209                        | 2,715 | 2.38                             |
| 2000 | 788         | 1,150        | 855               | 156                        | 2,949 | 2.32                             |
| 2005 | 844         | 1,235        | 928               | 119                        | 3,126 | 2.28                             |
| 2010 | 875         | 1,280        | 962               | 123                        | 3,240 | 2.28                             |
|      | Percentage  |              |                   |                            |       |                                  |
| 1980 | 25.7        | 37.6         | 29.0              | 7.7                        | 100.0 |                                  |
| 1985 | 25.7        | 37.6         | 29.0              | 7.7                        | 100.0 |                                  |
| 1995 | 25.7        | 37.6         | 29.0              | 7.7                        | 100.0 |                                  |
| 2000 | 26.7        | 39.0         | 29.0              | 5.3                        | 100.0 |                                  |
| 2005 | 27.0        | 39.5         | 29.7              | 3.8                        | 100.0 |                                  |
| 2010 | 27.0        | 39.5         | 29.7              | 3.8                        | 100.0 |                                  |

Source: Fleet & Associates, 1987

### Age of Household Head

The age of the head of the household is projected to increase in Neptune Beach. This is a result of the household's composition and size.

Table C-10.  
Population by Age Groups, Neptune Beach: 1980 through 2010

|      | Less<br>Than<br>20 | 21-34 | 35-64 | 65+   | Total |
|------|--------------------|-------|-------|-------|-------|
| 1980 | 1,464              | 1,649 | 1,802 | 1,913 | 2,060 |
| 1985 | 1,649              | 1,678 | 1,968 | 614   | 5,909 |
| 1995 | 1,802              | 1,834 | 2,150 | 675   | 6,458 |
| 2000 | 1,913              | 1,947 | 2,283 | 713   | 6,856 |
| 2005 | 1,987              | 2,023 | 2,371 | 741   | 7,122 |
| 2010 | 2,060              | 2,097 | 2,459 | 768   | 7,384 |

Source: Fleet & Associates, 1987

### Income Range of Households

The income of households in Neptune Beach was projected to determine the type and price of dwelling units needed for the anticipated population. Table C-11 shows the definitions of the various income groups as used in this element.

Table C-11.  
Income Group Classification Scheme

| Income Group             | Ratio to Median Income    | Income Limits               |
|--------------------------|---------------------------|-----------------------------|
| Very low income          | Less than 50% of median   | Less than \$9,000           |
| Low income               | 50% to 80% of median      | \$9,000 to 14,400           |
| Moderate income          | 80% to 120% of median     | \$14,400 to 21,600          |
| Middle income            | 120% to 150% of median    | \$21,600 to 27,000          |
| middle to<br>high income | 150% of median and higher | Upper<br>\$27,000 and above |

Source: Fleet & Associates, 1987

The projections for income for Neptune Beach show an increase in the number of households in the higher income levels and a decrease in the number of lower income levels (Tables C-12 and C-13). These projections are based on the 1980 census data and updates of household income prepared by the United States Department of Housing and Urban Development.

Table C-12.  
Households by Income Group, Neptune Beach: 1980 through 2010

|      | Very<br>Low | Low | Moderate | Middle | Upper<br>Middle<br>to<br>High | Total |
|------|-------------|-----|----------|--------|-------------------------------|-------|
| 1980 | 520         | 414 | 451      | 280    | 615                           | 2,280 |
| 1985 | 495         | 421 | 545      | 371    | 644                           | 2,476 |
| 1995 | 462         | 407 | 597      | 489    | 760                           | 2,715 |
| 2000 | 442         | 354 | 649      | 619    | 885                           | 2,949 |
| 2005 | 313         | 313 | 718      | 813    | 969                           | 3,126 |
| 2010 | 292         | 292 | 749      | 905    | 1,002                         | 3,240 |

Source: Fleet & Associates, 1987

Table C-13.  
Change in the Number of Households by Income Group, Neptune  
Beach: 1980 through 2005

|              | Very<br>Low | Low | Moderate | Middle | Upper<br>Middle<br>to<br>High |
|--------------|-------------|-----|----------|--------|-------------------------------|
| 1980 to 1985 | -25         | 7   | 94       | 91     | 29                            |
| 1985 to 1995 | -33         | -14 | 52       | 118    | 116                           |
| 1995 to 2005 | -149        | 94  | 121      | 324    | 209                           |

Source: Fleet & Associates, 1987

### Projected Housing Needs

The previous section projected anticipated changes in the households expected to reside in the city. This section will project the types of housing units needed to satisfy the projected households.

As the household size decreases the number of bedrooms and size of dwelling units can also decrease proportionately. One and two person households will require only one or two bedrooms, while three or four person households will require three bedroom homes. Due to income and desirability of residing in Neptune Beach, overcrowding in households may occur. Also households with higher income may occupy larger dwelling units than required with their household size.

The tenure of the dwelling units (owner/renter) is expected to remain essentially the same as is the distribution of single family and multi-family units.

### **Housing Needs**

Projected housing needs will be primarily met by the construction of new housing units. As the housing stock in the city ages, deteriorating single family dwelling units east of Third Street will likely be converted to duplexes and triplexes.

The land values and desirability of living in Neptune Beach makes the community atypical. Vacant units do not stay vacant long and dwelling units are maintained in standard condition. This is true in all income groups and areas of the community.

### **Land Requirements for the Estimated Housing Needs**

As discussed earlier, this plan is projecting the number of dwelling units in the city to be consistent with the land available for residential development. Approximately 125 acres are available for residential development to produce the 600+ projected dwelling units. Based on the housing projection of this element, housing production will decrease from approximately 50 units a year at the beginning of the planning period to approximately 25 units per year by 2010. This will be a result of the diminishing vacant land.

### **Private Sector and the Housing Supply**

The private sector is the only supplier of housing in Neptune Beach. A diversity of builders are constructing housing in the city. With the vacant land diminishing and the desirability of residing in Neptune Beach increasing, the private sector is developing new approaches to subdividing the land. An attached single family subdivision was constructed off Atlantic Boulevard by Charley Brown-Summerhomes, Inc. The builder was able to construct more dwelling units compared to conventional single family detached subdivisions.

### **Provision of Sites for Group Homes and Foster Care Facilities**

Based on a review of the City's current zoning code, there are no districts where group homes or foster care facilities are explicitly allowed. When the zoning code is revised, provisions should be made to allow group homes and foster care facilities in residential districts.

### **Housing Delivery System Removing Impediment to Achieving Full Production**

The City of Neptune Beach has a very good relationship with the builders working in the community. The city works with the developers to reduce any delays in the system. The city is currently analyzing its sewer and water system to determine what improvements will be needed in order for the city to become fully developed. The city's zoning allows for flexibility in development. Duplexes are permissible in the older sections of the city. This allows a higher density dwelling units to be constructed and reduce the per unit cost. The City Council and

Planning and Zoning Boards have allowed rezonings such as the Summerhomes development, which promotes higher density developments and reduces the dwelling units cost.

### **Recommendations**

The following section addresses issues concerned with the provision of safe and affordable housing and includes recommendations that are designed to meet these basic housing needs.

#### **Adequate Housing for Existing and Future Populations**

As discussed previously, Neptune Beach is a desirable area to live in Duval County. This promotes development and growth in the area. This trend is expected to continue until the vacant land in the city limits is developed. The city is currently reviewing subdivision plats for all vacant parcels. Once the city is subdivided, the Building Department should continue to assist builders in providing a diversity of housing types for all income groups.

The City also must promote maintenance and conservation of the existing housing in Neptune Beach. If existing housing is not maintained, adequate housing will not be available for the projected population.

#### **Affordable Housing**

Providing affordable housing in a city with a small supply of vacant land can be difficult. The City has little influence over the cost of housing. The City must promote a diversity of housing types and continue to promote planned unit developments which will result in higher densities and still maintain the character of the City.

#### **Special Housing Needs**

Neptune Beach is the smallest of the beach communities and comprises a very small percentage of the land in the City of Jacksonville/Duval County. Unlike the city of Jacksonville and the other beach communities, Neptune Beach has very little vacant land. The city needs to work with the City of Jacksonville and the other beach communities to provide housing for the handicapped, elderly, female-headed households, minority households, and persons with other special housing needs. The Neptune Beach staff has limited resources, but should work with the City of Jacksonville's Department of Housing and Urban Development (HUD) and Human Resources who have many resources available to provide housing for households with special needs.

#### **Adequate Sites for Low and Moderate Income Housing**

The City of Jacksonville HUD is the public housing authority for Duval County which includes Neptune Beach. Neptune Beach should work with and support the efforts of the City of Jacksonville in providing low and moderate income housing.

**Elimination of Substandard Housing**

Neptune Beach is an unique city in that it has no substandard housing. The housing is generally post 1950's construction. The cost and desirability of the housing should continue to promote this positive housing condition. The city should also further this positive housing condition by promoting housing conservation and passage of a minimum housing code. The limited historic properties in the city should be conserved and maintained in their residential state.

The City of Jacksonville HUD has a well established Housing Rehabilitative Program funded by Community Development Block Grant (CDBG) funds. Currently the Rehabilitation Loan can not be used in Neptune Beach. As the housing stock in Neptune Beach ages the need for a rehabilitation program increases. Neptune Beach should work with the City of Jacksonville HUD to allow the established program to be used in Neptune Beach. If Neptune Beach created its own Rehabilitation Loan Program there would be duplication of efforts between the two programs.

## Introduction

This element consists of the following sub-elements: Sanitary Sewer Solid Water, Drainage, Potable Water and Natural Groundwater Aquifer Recharge. In each of the sub-elements, terms and definitions are presented along with a description of the regulatory framework for the respective utility. Following this section each sub-element also examines the existing and projected conditions of the individual utility components. Goals, objectives and policies for all of the facility components are presented in the last section of this element.

### Sanitary Sewer Sub-Element

#### Terms and Concepts

##### Regional Systems

Regional systems are sanitary sewer systems which generally provide service to large or densely populated areas. These facilities consist of three components which perform the basic functions of collection, treatment, and disposal of sewage.

The collection system is composed of a series of sewer pipes which collect sewage from individual sources and move it to the central location for treatment. The collection network is generally laid out in a pattern roughly analogous to the branching pattern of a tree. Sewage flow is generally from the periphery of the collection system toward the treatment plant.

The major components of the collection system consist of trunk mains, interceptors, lift stations, and force mains. Interceptors are defined as sewers which connect directly to and convey sewage to the treatment plant. Trunk mains are defined as sewers which connect directly to and convey sewage to an interceptor. Lift stations allow sewage to be conveyed under pressure against the force of gravity and for long distances at minimal slopes. The pressurized sewer exiting from a lift station is called a force main.

The treatment plant is the component of the regional sanitary sewer facility which functions to remove solid and organic materials from the sewage. There are a large number of processes which can accomplish this, but they are generally grouped into one of the following three categories depending on the proportion of materials removed.

**Primary Treatment** This refers to the removal of between 30 and 35 percent of the organic materials and up to 50 percent of the solids from the sewage. This is also commonly referred to as physical treatment because screens and settling tanks are the most common methods used to remove the solids.

**Secondary Treatment** Secondary treatment processes remove between 80 and 90 percent of

the total organic materials and suspended solids from sewage. This level of treatment generally requires multiple steps involving one biological process and one or more processes for removal of suspended solids.

**Tertiary Treatment** Sewage may also contain large amounts of synthetic organic compounds or inorganic chemical which may create pollution problems if not removed. Tertiary treatment adds steps to primary and secondary processes to remove compounds of phosphorous and nitrogen. The effluent of advanced treatment processes often approaches potable water purity.

Effluent and sludge are the waste products of the treatment process. Effluent is the treated wastewater which flows out of the treatment plant. Effluent disposal alternatives include discharge to a water body, irrigation reuse or injection into deep aquifers. Effluent from the Neptune Beach WWTP is discharged to a body of water. Sludge refers to the accumulated solid residues of the treatment process. Prior to final disposal, sludge is usually subjected to an additional biological treatment process to remove pathogens (disease producing organisms) and to physical dewatering processes to facilitate burial in solid waste landfills and land application as an soil conditioner for agricultural purposes. Sludge from the Neptune Beach Sewage Treatment Plant is delivered to the Girvin Road Landfill for disposal.

### **Package Treatment Plants**

Package treatment plants are essentially small treatment systems which have a collection network, treatment plant, and a disposal system. Package plants may be designed to provide any level of treatment, but plants providing secondary treatment are most common. Package plants are available in a range of capacities up to one million gallons per day. They are generally used to serve isolated development and are usually partially or completely preassembled by the manufacturer prior to shipment to the site of use. There is one package treatment in operation in the planning area.

### **Data:**

The City of Jacksonville Department of Bioenvironmental Services is responsible for the permitting and regulation of sanitary sewer plants (including package treatment plants) in Duval County. Bioenvironmental holds this responsibility instead of the Department of Environmental Regulation.

The package plant name is Shady Lady Show Bar, owned by Charlotte Drum and located at 2109 Atlantic Boulevard. The service area of the plant is only the Shady Lady Show Bar. A check with Bioenvironmental Services indicated that the package plant was permitted for a design capacity of 5,000 gallons per day with extended aeration treatment.

The treatment plant's operating permit had expired and the last monthly operating report available was for April, 1989. No more monthly reports have been submitted. The April and

May of 1989 report stated the level of service provided by the facility was 100 gallons per day.

**Analysis:**

**EXISTING & PROJECTED NEEDS INCLUDING:**

**1. FACILITY CAPACITY ANALYSIS BY GEOGRAPHIC SERVICE AREA**

The facility capacity of 5,000 gallons per day would appear to be appropriate for this facility as it only serves the bar itself and will not be extending service to any other areas.

**2. EXISTING CONDITIONS BASED ON DESIGN CAPACITY & CURRENT DEMAND**

The monthly operating reports for April and May of 1989 indicate that the current demand on the facility is only 100 gallons per day. This amount seems unrealistic unless the Bar is closed or not operating. The demand listed by the facility would be more appropriate for a single household resident rather than a bar or commercial facility. The facility' design capacity of 5,000 gallons per day would appear to be appropriate for this type of facility.

**3. INITIAL INCREMENT FOR PLANNING PERIOD BASED ON PROJECTED DEMAND AT CURRENT LOS RESULTING FROM DEVELOPMENT PERMITTED BY THE LOCAL GOVERNMENT, POPULATION, LAND USE DISTRIBUTIONS, & AVAILABLE SURPLUS CAPACITY**

A response to this is not appropriate for this facility due to the type of use served. The facility will not be expanding to serve any other areas or population in the City.

**4. GENERAL PERFORMANCE BASED ON ADEQUACY OF LOS, GENERAL CONDITION & EXPECTED LIFE OF FACILITIES & IMPACT ON NATURAL RESOURCES.**

The plant was inspected in 1988 and was issued citations to obtain a new operating permit because of violations. In 1989 the establishment changed hands and was reinspected and the new owner was issued the same citations. In 1990, the establishment again changed hands and was inspected in May 1990. As before, the same violations were cited again. The violations included the following general problems: the facility did not have a valid operating permit, there was inadequate operator attendance, and inadequate monitoring of data. Bioenvironmental was unable to assess the quality of the effluent from the facility because the effluent tests can only be conducted when the plant is operating; however, the establishment is only open in the evenings.

The plant stated that it only used 100 gallons per day, however, it would appear that if the bar is open and serving customers on a daily basis, then the demand should be substantially higher.

The City should consider requiring the plant to connect to the City's wastewater system. The system is ill-maintained and has not followed any of the requests by Bioenvironmental Services to improve the plant and its operations and maintenance. Although an assessment of the effluent

and its effect on natural resources has not been conducted by anyone, Bioenvironmental staff believe that some problems with the effluent most likely exist.

### **Septic Tanks**

Septic tanks are usually used to serve single-family housing units, but some large-scale systems have proven successful. A septic tank system consists of two parts, the septic tank and a drainage field. The tank receives wastewater and allows for a period of settling. This allows a large portion of suspended solids to settle, and eventually be decomposed by bacteria in the tank. Liquids are discharged through a drainage pipe into a drain field where it percolates in the soil. The soil acts as a natural filter, removing any particles which then are decomposed by microorganisms in the soil. This reduces ground water contamination.

Residential septic tanks require cleaning about every three to five years to remove accumulated solid material. Commercial systems require more frequent cleaning. The solid material is called septage and is usually transported to a regional sanitary sewer system for further treatment.

The correct soils are needed to assure proper functioning of the septic tank. Some factors which make soils unacceptable for septic tanks are high water table, extreme permeability, lack of permeability, flood plains soils and severely sloped areas. Septic tanks located on improper soils require additional construction and maintenance for correct functioning.

## **Regulatory Framework**

This section addresses the pertinent rules and regulations at the federal, state, and local levels of government that regulate wastewater disposal.

### **Federal Regulations**

The Federal Water Pollution Control Act is the controlling national legislation relating to the provision of sanitary sewer service. The goal of the act is the restoration and maintenance of the chemical, physical, and biological composition of the nation's water supply. The act established the national policy of implementing areawide waste treatment and management to ensure the control of sources of pollutants. Under Section 201 of PL 92-500, grants are made available to local governments to construct facilities to treat "point" sources of pollution, including effluent from sewage treatment plants. The Environmental Protection Agency (EPA) is responsible for implementation of the act.

### **State**

The Department of Environmental Regulation (DER) is responsible for carrying out the Water Pollution Control Act on a state level. Chapter 17-6 of the Florida Administrative Code states the rules established by DER for regulation of sewer facilities. The rules apply to facilities

which treat flows exceeding 5,000 gallons per day (gpd) for residential and a 3,000 gpd for commercial and industrial.

The Department of Health and Rehabilitative Services (HRS) regulates septic tank and drain field installation in the state. These requirements are in Chapter 10D-6, Florida Administrative Code.

### **Local**

The Jacksonville Department of Health, Welfare, and Bio-Environmental Services is the local agency that oversees and enforces the operation of the wastewater facilities.

### **Existing Conditions**

The City of Neptune Beach is the sole provider of sewer service for users within the City's corporate limits. The City does not provide sewer service to users outside of the City limits. This condition is not expected to change as the City of Jacksonville Beach provides sewer service to its residents south of Neptune Beach and the City of Atlantic Beach provides sewer service to its residents north of the Neptune Beach city limits. The Intracoastal Waterway and the Atlantic Ocean are the east and west boundaries for the city.

The majority of the city is connected to Neptune Beach's sewer system (Map D-1). A small area in the northwest corner of the city is one of two areas where septic tanks are used. The other is the Seagate Forest area off of Forest Boulevard. The soil conditions in this latter area allow the septic tanks to properly function.

The city currently has the capacity to treat 1.5 million gallons of sewage per day. The city is currently generating 1.2 to 1.3 million gallons per day.

The city has one main problem in its sewer system -- deteriorating of older sewer lines. Many of the sewer lines in the city are 20 to 30 years old and are deteriorating. As sewer lines deteriorate, the lines will allow seepage and infiltration of the lines. In 1987, the City authorized the use of television inspection to determine the lines in need of rehabilitation. The City also began a program of rehabilitation of its deteriorating lines. Because of poor soil conditions in the northwest corner of the City, the City Council imposed a moratorium on new construction in June, 1986.

existing sewer

## Analysis

The existing sewer treatment plant was recently expanded to handle the city's waste water treatment. Prior this, the plant operated over capacity. This along with equipment problems have in the past resulted in several episodic, as well as chronic violations of water quality standards.

The data for the following table was obtained in 1988 by the City's Consulting Engineers and reported in the City's Water and Sewer Revenue Bond Series 1988. The source of the base flows was compiled from the City Clerk's records of billings based on water meter readings. The Engineer' applied several assumptions to the water consumption rate to determine the actual base sewer flow rate.

The following table shows projections of sewer treatment capacity needs.

Table D-1.  
Sewer Treatment Capacity, Neptune Beach  
Existing Conditions - 1988

|   | Gallons<br>Per Day |
|---|--------------------|
| Totals for existing domestic base sewage flows                        | 641,218            |
| Totals for existing commercial base sewage flows                      | 107,874            |
| Totals for existing base sewage flows                                 | 749,092            |
| Future Base Sewage  | 294,646            |
| Anticipated Potential Sewage Increase<br>(Additional users 1986-2010) | 83,450             |
| Estimated unremovable infiltration                                    | 250,000            |
| Maximum average daily sewage flows for 20 year<br>planning period     | 1,377,188          |

Source: Smith and Gillespie Engineers, Inc., City of Neptune Beach Water and Sewer Revenue Bond Series 1988.

The level of service for residential customers is 106 gallons per capita per day or 86 percent of the total flows while commercial use approximates 14 percent of the total base flow. While commercial flows cannot be measured on a per capita basis, it is recommended that future commercial establishments continue to be provided a level of service consistent with the recommendations of Chapter 10D-6, Florida Administrative Code.

### **Recommendations**

The average gallons per capita per day was reviewed and recalculated to 106 gallons per capita per day. As described in the above RESPONSE to DCA's Objection 2, the level of service is based on historical residential and commercial flows. It does not include the infiltration and inflow which the consulting engineer's indicated would always be present in the Neptune Beach's wastewater system.

As can be seen in the previous table, the City's residential flow averaged 641,218 gallons per day in 1988. The population estimate for 1988 was 6,073 persons. This calculates to a per capita rate or level of service of 106 gallons per person per day. Commercial flows accounted for about 14 percent of the total base flows. Approximately 250,000 gallons per day are estimated to be non-removable infiltration and inflow. If the non-removable infiltration and inflow was calculated into establishing a level of service, then the level of service would be too high and for planning purposes, unrealistic. While commercial flows cannot be measured on a per capita basis, it is recommended that future commercial establishments continue to be provided a level of service consistent with the recommendations of Chapter 10D-6, Florida Administrative Code.

In 1987, the city was operating their treatment plant under a Temporary Operating Permit issued by the Florida Department of Environmental Regulation (FDER). This permit set forth performance and loading conditions based on a capacity of 750,000 gallons per day (gpd).

The condition of receiving flows over the permitted capacity and the associated degradation in treatment performance, resulted in the City being cited by FDER and the U.S. Environmental Protection Agency for frequent monthly violations. Furthermore, FDER instructed Neptune Beach and Atlantic Beach to cease discharge of treated effluent wastes to the Intracoastal Waterway.

Therefore, the City of Neptune Beach entered into two construction contracts to construct an effluent disposal facility which relocated the discharge of their treated effluent to the St. Johns River, as well as complete the rehabilitation of the existing treatment plant. The construction of the effluent force main was funded and constructed jointly under an interlocal agreement by the cities of Neptune Beach, Jacksonville Beach and Atlantic Beach as part of the Duval Beaches 201 Facility Plan.

Since the construction of improvements to the plant and the effluent disposal facility, Neptune Beach has continued to have problems. Most recently (1990) the City was cited by DER for

polluting local waters. The city hired an independent consulting engineer to review the plant and to make recommendations as to corrective actions to take. The problems which led to citations were due to equipment which was either inadequate or never installed during renovation. Also, faulty aerators and the lack of a dechlorination system caused the plant's effluent to contain illegal amounts of fecal bacteria and residual chlorine and an improper oxygen measure from July 1989 to June 1990. In July of 1990, the City council authorized the purchase of a \$200,000 aeration system and a dechlorination system, which, to date, appears to have corrected the problem.

The City of Neptune Beach Wastewater system is well maintained and provides reasonable service. Due to growth and new stringent effluent discharge requirements, the City expanded and upgraded its wastewater treatment facilities in effort to satisfy the needs through ultimate buildout of the City.

## **Potable Water Sub-Element**

### **Terms and Concepts**

A potable water supply system normally consists of a water supply source, a treatment plant and a distribution and storage network. Either surface water, stored in natural lakes or man-made reservoirs, or groundwater, or some combination of the two usually constitute the supply source for a system. The selection of a source for any system must consider the type and quality of sources available and the cost of developing the source for use. Before being used for public consumption, most water must be treated. Treatment removes impurities from the raw water in order to improve its quality for either public health or aesthetic reasons, or both. the treatment process adds to the cost of supplying water but it also expands the range of raw sources that can be utilized.

After treatment, the water is supplied to individual users in a community by way of a network of pipes and storage reservoirs. Large transmission lines, called distribution mains, carry water to major demand areas and interconnect with a network of smaller lines which eventually supply individual establishments. Both the distribution mains and distribution network should be interconnected to form flow loops to allow water to circulate from various portions of the system to areas of highest momentary demand.

Water is delivered under pressure within the distribution system in order to ensure adequate flow to meet demands. Demand fluctuates during each day, usually exhibiting peaks during the morning and evening, corresponding to periods of highest residential use. Localized demand peaks also occur when the system is utilized for fire fighting purposes. In order to provide adequate quantities and pressure to meet peak use and fire flow demands, storage tanks are linked with the distribution system at strategic locations. During low demand periods these tanks are filled as water is pumped into the system. During the peak demand periods, water

flows from the tanks back into the system to augment flows and maintain pressure. Ground level and elevated storage tanks are both commonly used. Elevated tanks (water towers) are the most economical. Many systems also include auxiliary pumps which operate only during peak demand periods.

## **Regulatory Framework**

### **Federal**

The federal government has established quality standards for the protection of water for public use, including operating standards and quality controls for public water systems. These regulations are provided in the Safe Drinking Water Act, Public Law 93-523. This law directed the Environmental Protection Agency (EPA) to establish minimum drinking water standards. The EPA standards are divided into "primary" (those required for public health) and "secondary" (recommended for aesthetic quality) categories.

### **State**

In accordance with federal requirements, the Florida Legislature has adopted the Florida Safe Drinking Water Act, Section 403.850-403.864, F.S. The Florida Department of Environmental Regulation (DER) is the state agency responsible for implementing this act. In this regard, DER has promulgated rules of classifying and regulating public water systems under Chapter 17-22 of the F.A.C. The primary and secondary standards of the Federal Safe Drinking Water Act are mandatory in Florida.

The St. Johns County River Water Management District (SJRWMD) is responsible for managing water supplies to meet existing and future demands for Neptune Beach. Regulation of consumptive use is achieved through a permitting system, through which water resources are allocated among the permitted consumers. The SJRWMD rules pertinent to Neptune Beach are contained in Chapter 40C-4, F.A.C.

### **Local**

The Jacksonville office of the State Department of Health and Rehabilitative Services is the local agency which oversees the operation and performance of the potable water facilities. Water quality and production records are submitted to the Jacksonville HRS office for determination of compliance with DER regulations.

## **Existing Conditions**

Neptune Beach provides water to all residents and commercial users located within the city

limits. The city has 3 million gallon per day capacity for water and is using only 1.5 million gallons per day. The city, therefore, has a surplus water capacity.

The water for the city is obtained from three wells located below the city park off of Florida Avenue between Third Street and Fifth Street (Map D-2).

The existing water lines in some of the older areas of the city, especially east of Third Street are in need of repair. These lines are approximately 40 years old. The lines are 2 inch lines that over the years have become corroded with mineral deposits. This decreases the water pressure to users served by those lines.

### **Existing Water Service**

DESIGN CAPACITY OF STORAGE TANKS: 300,000 gallons

#### DESIGN CAPACITY OF WATERWELLS:

Waterwell 1 was installed in 1938 and was drilled to a total depth of approximately 620 feet and cased with 10-inch steel casing pipe to a depth of 380 feet.

Waterwell 2 was installed in 1944 and, like well number 1, was drilled to a total depth of approximately 620 feet and cased with 10-inch steel casing pipe to a depth of 380 feet.

The condition and dependability of these two wells was questionable since both had been in service in excess of 44 years. The two wells are located so close to one another that, as a result, neither produced as much water as each would if the wells were properly spaced.

Waterwell 3 is a 12-inch well drilled approximately 1,050 feet deep with 410 feet of 12-inch casing to the Floridan Aquifer. It produced a free flow of approximately 2,400 gallons per minute when tested immediately after construction in 1963. The well is equipped with a pump rated at 1,200 gallons per minute.

Waterwell 4 was constructed in 1972. It is a 12-inch well of approximately 1,212 foot depth and is equipped with a vertical turbine pump rated at a minimum capacity of 3,000 gallons per minute. It produced a free flow of approximately 5,060 gallons per minute when tested immediately after construction in 1972.

The existing wells have adequate capacity to provide water to meet the City's needs through buildout of the City. Project improvements in 1989 and 1990 (funded through the Series 1988 Revenue Bond Issue) included the replacement of instrumentation and controls for all pumps and monitoring equipment, the replacement of two well pumps and motors (Waterwells 1 and 2) at the Water Plant to improve water service throughout the City, and the replacement of an aging high service pump at the Water Plant which pumps water to the elevated tank and throughout the distribution system and upgrading pump capacity to 1,500 gallons per minute . Waterwells 3 and 4 are in good operating condition and no improvements were required.

**SOURCE OF WATER:** The raw water supply consists of four artesian-type wells extending into the Ocala limestone formation underlying the Neptune Beach area, more commonly known as the Floridan Aquifer.

**CURRENT DEMAND OR EXISTING LOS:** In 1988, the City of Neptune Beach's Consulting Engineers conducted a study of the City's potable water treatment facility. Based on the City's billing records for both residential and commercial customers over a 1 year period, the City consumed approximately 389,850,000 gallons of water in 1988. The estimated population in Neptune Beach in 1988 was 6,073 (based on the City of Jacksonville's projections). Residential use accounted for approximately 57 percent of total water usage or 784,961 gallons per day while commercial use was estimated to be 43 percent of the total or 601,047 gallons per day. Commercial water use accounts for a higher percentage than commercial wastewater flows because of a larger percentage of non-returnable flows (i.e., septic tanks and lawn sprinklers). The level of service for residential use is 129 gallons per person per day. Since the level of service for commercial establishments cannot be estimated on a per capita basis, it is recommended that all future commercial establishments be consistent with the guidelines and requirements of Chapter 10D-6, Florida Administrative Code.

The city requires developers of subdivisions to pay for the extension of the water lines. The lines must be built to the city's standards and after completion are dedicated to the city. The city accepts the maintenance of the lines.

### **Analysis**

The City of Neptune Beach has an adequate supply of water through the planning period. The existing wells are able to provide the city with adequate supply of water for existing and future populations. The renovations to the system will assist in maintaining adequate pressure and supply to the system.

The two inch water lines in the area west of Florida Boulevard are undersized and do not meet current city standards. The mineral deposits that have developed in the lines since they were first constructed in the 1940's has further decreased the usefulness of the lines. A program is needed to systematically replace the antiquated two-inch lines to current city standards of six-inch lines.

The existing developed areas of Neptune Beach are served by city water. New development in the city will consist of commercial development in areas where water lines exist or in larger vacant tract that will be subdivided for residential development.

The commercial developments will be able to connect to existing water lines. The new residential users will also be able to connect to the water system through the extension of water lines during the subdivision platting process. Once the subdivision plat is approved for review

and all infrastructure is constructed to city standards, the lines are accepted by the city. The city is then responsible for maintenance and upkeep of the lines. Table D-2 presents projections for potable water demand.

Table D-2.  
Potable Water Demand Estimates and Projections,  
Neptune Beach: 1985 through 2010

| Year | Estimated<br>Population | Gallons<br>Per Day |
|------|-------------------------|--------------------|
| 1985 | 5,909                   | 413,630            |
| 1995 | 6,458                   | 452,060            |
| 2000 | 6,856                   | 479,920            |
| 2005 | 7,122                   | 498,540            |
| 2010 | 7,384                   | 516,880            |

Source: Fleet & Associates, 1987

### **Recommendations**

The city needs to continue its program of maintenance of the water supply system. The elevated water tank should be able to provide adequate service throughout the planning period.

The city should begin a systematic program of replacing the older two-inch lines in the city. By phasing the replacement program over a number of years, the capital outlay per year could be limited. This would avoid a situation in the future where it might be required to replace all the two-inch lines over a short period of time. In addition, a program is needed to replace water valves.

### **Drainage Sub-Element**

#### **Terms and Concepts**

##### **Drainage Systems**

Water flowing overland during and immediately following a storm event is called stormwater drainage or stormwater runoff. Under the effect of gravity, the drainage flows toward sea level through depressions and channels which comprise the drainage system of an area. The drainage system may consist of natural features, manmade features, or both.

Natural drainage systems are defined by the topography of an area. The largest feature of a natural drainage system is the drainage basin, or watershed. The boundary of the basin is called the basin divide. This is a line where the natural land elevation directs runoff from the basin toward a common major drainage feature, such as a river, lake or bay. The major drainage feature is often called the receiving body and the smaller features are its tributaries.

Manmade drainage facilities are artificial structures designed to store or convey stormwater runoff. Swales, ditches, canals and storm sewers are typical conveyance structures, collecting stormwater runoff and directing it toward downstream receiving waters. Stormwater storage structures are generally classified as either detention or retention facilities. Detention facilities are designed to temporarily impound runoff and release it gradually to downstream portions of the drainage system through an outlet structure. Retention facilities are impoundments which release stormwater by evaporation and be percolation into the ground, with no direct discharge to surface waters.

The best available data on shared drainage facilities was obtained from a Master Drainage Study which analyzed the existing drainage conditions in the City. The Study was conducted by the city's consulting Engineer, Smith & Gillespie in 1980. The data discussed below was already included in the text of the Draft submittal to DCA (additional subheadings have been added to accurately identify the drainage facility being discussed).

#### DOT DRAINAGE CANAL

A substantial portion of the storm drainage system within the City of Neptune Beach has been constructed by the Florida Department of Transportation (DOT) in connection with major paving projects, principally, State Road A1A (Third Street) and Atlantic Boulevard. It may be assumed that all of the storm drainage facilities constructed in support of these paving projects were based on the drainage facilities standard design criteria of the DOT.

Provisions were included in the design of the storm drainage facilities along State Road A1A to provide for the extension of storm sewer facilities into the area of the City lying east of Third Street and extending to the sand dune ridge along the bulkhead line at the Beach. These provisions consist of 30 inch pipe stubouts to the east for future extensions at Lemon Street, Walnut Street, Pine Street, North Street and Bowles Street.

The drainage from State Road A1A is directed westerly from the street right-of-way and is collected by one of the major drainage canals in the City which starts at Atlantic Boulevard near the Scotty's Building Supply store. This canal also drains part of Atlantic Boulevard including the large paved parking area of the K-Mart Shopping Center. The drainage canal then flows in a southerly direction parallel to Third Street through Jarboe Park where it picks up the overflow from the park lakes and connects with another major drainage canal located along the northern right-of-way line of Florida Boulevard. The Florida Boulevard drainage canal also collects storm water runoff from the DOT drainage system on Third Street, then continues westward to Fifth Street, from which point it turns to a southwesterly direction and connects with a major drainage system of the DOT at a point directly north of Fletcher Senior High School. The storm drainage from the Bal Harbour Subdivision and other adjacent developments flows into the Florida Boulevard ditch at Fifth Street.

The DOT drainage canal represents one of the major drainage systems for both Neptune Beach and the City of Jacksonville Beach. The drainage area for this canal extends from Atlantic

Boulevard on the north to Beach Boulevard in Jacksonville Beach on the south. The DOT canal flows into the City of Neptune Beach from Jacksonville Beach long the western boundary of Fifth Street, then turns to the west along the northern property line of Fletcher Senior High School. The canal continues westerly on this alignment under Penman Road to a discharge in the marsh area of the Intracoastal Waterway.

#### **HOPKINS CREEK**

The remaining major drainage system for the City of Neptune Beach is represented by Hopkins Creek which flows in a meander roughly 800 to 1,000 feet west of Penman Road in a southerly direction from the City of Atlantic Beach. It drains an area in Atlantic Beach of approximately 220 acres before it crosses under Atlantic Boulevard into Neptune Beach. Hopkins Creek discharges into the marsh lands of the Intracoastal Waterway just south of Forest Avenue approximately 1,000 feet west of Penman Road.

Hopkins Creek does not present a drainage problem at this time. In addition, based on drainage area development, there should be no major problems in the future.

The city began a maintenance program in 1982 to keep the drainage-way free from debris and overgrown plants. Throughout the year the Director of Public Works has his employees cleaning out the city maintained drainage ditches. In 1987, the city is contracting with a company to clean the ditches more extensively. The city does not maintain the DOT canal. The DOT is responsible for the maintenance of this ditch. Many times the DOT canal is unable to perform properly due to a buildout of debris and weeds and lack of adequate maintenance by the DOT.

#### **Drainage and Stormwater Management**

The occurrence of stormwater runoff is highly variable, dependent on the amount of rain falling during each storm event and on conditions within the drainage basin. Since most storm events are relatively moderate, natural drainage features typically evolve to accommodate moderate quantities of stormwater runoff. Occasionally, severe storm events create runoff volumes in excess of what these features can handle, resulting in temporary flooding of adjacent land. This periodic flooding is part of the natural cycle of events and often has beneficial effects on the basin ecosystem. Flooding is generally not perceived as a problem until development occurs in flood-prone areas.

Historically, the typical strategy adopted in response to stormwater flooding of developed areas was to modify the drainage system to convey runoff away from developed sites more rapidly. Initially, this response may result in limited success in reducing nuisance effects and property damage. However, as urbanization of a drainage basin increases, storm events produce proportionately more and faster runoff, primarily due to the increase in impervious surfaces in the basin. As a result, the capacities of natural drainage features and previously constructed drainage facilities are exceeded more frequently and stormwater flooding problems increase, as do expenditure for further drainage improvements.

In addition to exacerbating flood problems, this strategy for coping with stormwater runoff has detrimental effects on water quality. Soil eroding from development sites, and materials such as oil, grease, pesticides and fertilizers from urban land uses are washed off by runoff, increasing pollutant loading on receiving waters. The increased velocity of runoff also disrupts natural drainage features by destabilizing channels, leading to further sediment loading and debris accumulation.

The term "stormwater management" refers to comprehensive strategies for dealing with stormwater quantity and quality issues. The central theme of these strategies is to ensure that the volume, rate, timing and pollutant load of runoff after development is similar to that which occurred prior to development. To accomplish this, a combination of structural and non-structural techniques are utilized. Structural techniques emphasize detention and retention of stormwater to reduce runoff rates and provide settling and filtration of pollutants. Non-structural techniques emphasize preservation or simulation of natural drainage features to promote infiltration, filtering and slowing of runoff. The objective of stormwater management is to utilize the combination of techniques which provide adequate pollutant removal and flood protection in the most economical manner.

One of the key principles of current stormwater management techniques is recognition of the need for planning of the entire basin. The stormwater management system must be designed beginning with the final outlet point to ensure adequate capacity to handle all discharges from the upstream portion of the basin under conditions present at the time of design. It is then necessary to ensure that subsequent development upstream utilizes stormwater management techniques and systems which maintain predevelopment runoff conditions so that the downstream system is not overloaded. By ensuring that all development within the basin is based on and supportive of a plan for the entire basin, the functions and useful life of both natural and manmade components of the system will be protect and extended.

There are two basic factors involved in establishing a successful stormwater management program around these principles; (1) establishing and apply uniform design standards and procedures; and, (2) ensuring adequate maintenance of system components once they are constructed. The design standard which is of primary importance is the design storm event. This standard specifies the intensity (rate of rainfall) and duration of the rainfall event to be used in the design of facilities.

Data on rainfall intensity and duration have been summarized for various regions of the state by the Florida Department of Transportation (DOT). Ideally, the selection of a standard design storm balances the cost of structures needed to avoid flooding against savings from reduced flood damages and disruption of community activities. The design storm must also be consistent with facility design for pollution abatement goals.

Standard procedures for sizing and designing facilities should also be part of the stormwater management program. This will ensure that systems are structurally and functionally compatible. The program should also provide for routine inspection and maintenance of facilities to ensure proper performance during the facility life.

The best available data on facility capacity is found in the 1980 Master Drainage Study. After a heavy rain and substantial flooding occurred in 1979, the City undertook the study to determine the causes and implement corrective measures. The City's Consulting Engineer's made a determination that the flooding in the City was primarily due to the ill-maintained DOT drainage canal. However, the City's Consultants were required to make improvements to its own facilities since the DOT would not correct the drainage canal.

Hopkins Creek does not present a drainage problem at this time. In addition, based on drainage area development, there should be no major problems in the future.

#### Deficiencies

IN 1985, THE DOT DRAINAGE IMPROVE ALONG FOREST AVENUE TO CULVERTS - ALSO, DID WORK ON FLORIDA BLVD. FROM 1ST TO 3RD ST., SWALES, DESIGNED FOR 3 YEAR 1 HOUR DESIGN STORM; CONVERTING EXISTING INLET TO MANHOLE INTERSECTION OF 3RD ST.

AND

The DOT canal needs to be improved. The construction of a storm sewer system with sufficient capacity to accommodate the most severe rainfall expected cannot generally be economically justified, as the cost of such a system would be prohibitive. As a more practical matter, a design assuming the occasional minor flooding of streets and low lying lands can be tolerated, at least to the extent that such flooding does not involve extensive damage to property, hazards to health and safety or great public inconvenience.

In years past, the three-year frequency storm was used for the design of the storm sewers by the City of Neptune Beach, as a practical and economical criterion. This is the same storm frequency that the Department of Transportation used for the design of the storm sewers on Atlantic Boulevard and State Road A1A (Third Street) and for other similar highway construction.

An analysis of the general performance of existing facilities (addressing stormwater quantity) was provided in the Draft subelement submitted to DCA and was the best information available. The City's Consulting Engineers indicated the City of Neptune Beach does not have any major drainage problems and are unlikely to experience any in the future since the City is almost built out. No further studies have been conducted since the 1980 Master Drainage Study and the City's Engineer's do not believe more studies are necessary. The 1980 Master Drainage Study outlined corrective measures for the City of Neptune Beach to take in order to alleviate stormwater flooding throughout the City. The City implemented the recommendations from the Study.

In terms of stormwater quality, no data was available to determine if the City's stormwater runoff was causing pollution problems on the City's potable waterwells and adjacent salt marshes. The

Department of Environmental Regulation (DER) has recently collected data from many checkpoints along the Intracoastal Waterway. The data is still in raw form and the DER had not made a full analysis of the data. DER did say that a drop in oxygen levels had occurred somewhere between the City of Atlantic Beach and Palm Valley in St. Johns County but could not say what the cause was nor where the problem stemmed from. No other data was available on stormwater quality in Neptune Beach.

## **Regulatory Framework**

### **Federal**

Section 208 of the Federal Water Pollution Control Act (PL92-500, 1972) is the directing federal law with respect to water pollution abatement. In implementing the Act, the Environmental Protection Agency (EPA) identified pollutants carried in stormwater runoff as a major source of water contamination. To achieve the pollution abatement goals of the act, EPA provided assistance to state and local governments to develop Areawide Quality Management Plans, or "208 Plans", as they are commonly known. These 208 Plans studied a broad range of potential water pollution sources, including stormwater, and focused on identifying pollutant sources and abatement needs as well as development of regulatory programs to ensure implementation. At present, there are no federal regulations for stormwater management concerning the quantity of stormwater runoff.

A "208 Plan" was not conducted for the City of Neptune Beach to identify potential water pollution sources.

### **State**

The Florida Department of Environmental Regulation (DER) has adopted a Stormwater Rule (Chapter 17-25, F.A.C.) to fulfill part of the state's responsibilities under Section 208 of the Federal Water Pollution Control Act. The rule's basic objective is to achieve 80-95 percent removal of stormwater pollutants before discharge to receiving waters. This rule requires treatment of the first inch of runoff for sites less than 100 acres in size and the first one-half inch of runoff for sites 100 acres or greater in size.

Treatment is generally accomplished through retention or through detention with filtration. Retention requires the diversion of the required volume of runoff to an impoundment area with no subsequent direct discharge to surface waters. Pollutant removal by settling and by percolation of the stormwater through the soil is almost total. Detention facilities are typically within the line of flow of the drainage system. Stormwater from a site passes through the detention facility and is filtered prior to discharge to remove pollutants.

Implementation of the stormwater rule is achieved through a permitting process. DER has

delegated permitting responsibility for the Neptune Beach area to the St. John's River Water Management District. Exemptions to the permit requirements are provided for: (1) facilities serving individual sites for single family, duplex, triplex or fourplex units; (2) facilities serving dwelling unit sites which are less than ten acres in total land area, have less than two acres or impervious area, and which comply with local stormwater management regulations or discharge to a permitted regional facility; and, (3) facilities for agricultural or silvicultural lands which have approved management plans.

The Department of Environmental Regulation has delegated permitting responsibility for the Neptune Beach area to the St. John's River Water Management District. Implementation of the stormwater rule is achieved through a permitting process.

As most of the City of Neptune Beach has already been developed, the new state regulations will only have a minimal impact on Hopkins Creek as the regulations only apply to new developments. However, if a major redevelopment project was to occur in Neptune Beach, the state's regulations should adequately protect the Creek.

No data is available on pollutant loads from Neptune Beach's stormwater runoff. Data has been collected at various points along the Intracoastal Waterway by the Department of Environmental Regulation and a brief review by the Department indicated a drop in oxygen levels in the Intracoastal that occurred somewhere between the City of Atlantic Beach and Palm Valley in St. Johns County. The Department, however, could not advise as to the cause or source of the decreased oxygen levels.

### **Local**

There is no local agency responsible for the enforcement or implementation of stormwater management.

The City's subdivision regulations will not allow improvements which will obstruct the existing flow of runoff collected upstream, free tidal action or flooding upstream or downstream. Further, the City's regulations also prohibit any structure from being built or installed within twenty-five feet of the stream or important surface drainage course. This would include Hopkins Creek and the Intracoastal Waterway.

While these regulations may be primarily geared toward flood prevention, they also assist in protecting the natural and vital functions of the marshes along the Intracoastal Waterway and Hopkins Creek. Free tidal action is necessary for protection of vegetative and animal habitats because it acts as a cleansing agent and allows stormwater pollutants to be diluted if concentrations of pollutants are contained in the runoff.

In the development of the City's land development regulations, the City should establish stormwater quality guidelines for future development. The guidelines should be consistent with State Statutes and regulations and should consider the engineering guidelines which will minimize pollution and control erosion.

## **Existing Conditions**

The City of Neptune Beach experienced flooding on September 25-26, 1979. After the flooding, the city conducted a Master Drainage Study to analyze the existing drainage conditions in the city and recommend improvements to be undertaken to avoid future flooding.

The city's consulting Engineer, Smith & Gillespie, completed the Master Drainage Study for the City in 1980. The study recommended a series of improvements to the drainage system to be constructed. Based on the priorities established by the Engineers, the City began a drainage improvement program. The final recommended improvements were funded in 1986.

A substantial portion of the storm drainage system within the City of Neptune Beach has been constructed by the Florida Department of Transportation (DOT) in connection with major paving projects, principally, State Road A1A (Third Street) and Atlantic Boulevard (Map D-3). It may be assumed that all of the storm drainage facilities constructed in support of these paving drainage facilities projects were based on the standard design criteria of the DOT. Provisions were included in the design of the storm drainage facilities along State Road A1A to provide for the extension of storm sewer facilities into the area of the City lying east of Third Street and extending to the sand dune ridge along the bulkhead line at the Beach. These provisions consist of 30 inch pipe stubouts to the east for future extensions at Lemon Street, Walnut Street, Pine Street, North Street and Bowles Street.

The drainage from State Road A1A is directed westerly from the street right-of-way and is collected by one of the major drainage canals in the City which starts at Atlantic Boulevard near the Scotty's Building Supply store. This canal also drains part of Atlantic Boulevard including the large paved parking area of the K-Mart Shopping Center. The drainage canal then flows in a southerly direction parallel to Third Street through Jarboe Park where it picks up the overflow from the park lakes and connects with another major drainage canal located along the northern right-of-way line of Florida Boulevard. The Florida Boulevard drainage canal also collects storm water runoff from the DOT drainage system on Third Street, then continues westward to Fifth Street, from which point it turns to a southwesterly direction and connects with a major drainage system of the DOT at a point directly north of Fletcher Senior High School. The storm drainage from the Bal Harbour Subdivision and other adjacent developments flows into the Florida Boulevard ditch at Fifth Street.

The DOT drainage canal represents one of the major drainage systems for both Neptune Beach and the City of Jacksonville Beach. The drainage area for this canal extends from Atlantic Boulevard on the north to Beach Boulevard in Jacksonville Beach on the south. The DOT canal flows into the City of Neptune Beach from Jacksonville Beach long the western boundary of Fifth Street, then turns to the west along the northern property line of Fletcher Senior High School. The canal continues westerly on this alignment under Penman Road to a discharge in the marsh area of the Intracoastal Waterway.

The remaining major drainage system for the City of Neptune Beach is represented by Hopkins Creek which flows in a meander roughly 800 to 1,000 feet west of Penman Road in a southerly direction from the City of Atlantic Beach. It drains an area in Atlantic Beach of approximately 220 acres before it crosses under Atlantic Boulevard into Neptune Beach. Hopkins Creek discharges into the marsh lands of the Intracoastal Waterway just south of Forest Avenue approximately 1,000 feet west of Penman Road.

Hopkins Creek does not present a drainage problem at this time. In addition, based on drainage area development, there should be no major problems in the future.

The city began a maintenance program in 1982 to keep the drainage-way free from debris and overgrown plants. Throughout the year the Director of Public Works has his employees cleaning out the city maintained drainage ditches. In 1987, the city is contracting with a company to clean the ditches more extensively. The city does not maintain the DOT canal. The DOT is responsible for the maintenance of this ditch. Many times the DOT canal is unable to perform properly due to a buildout of debris and weeds and lack of adequate maintenance by the DOT.

### **Analysis**

The city should be commended for implementing the recommendations of the Master Drainage Study completed in 1980. The city was denied a permit from the DOT for improvements along North Street and therefore was unable to improve the drainage in that area.

The DOT canal needs to be improved. The construction of a storm sewer system with sufficient capacity to accommodate the most severe rainfall expected cannot generally be economically justified, as the cost of such a system would be prohibitive. As a more practical matter, a design assuming the occasional minor flooding of streets and low lying lands can be tolerated, at least to the extent that such flooding does not involve extensive damage to property, hazards to health and safety or great public inconvenience. The three-year frequency storm was adopted for the design of the storm sewers by the City of Neptune Beach, as a practical and economical criterion. This is the same storm frequency that the Department of Transportation used for the design of the storm sewers on Atlantic Boulevard and State Road A1A (Third Street) and for other similar highway construction.

### **Recommendations**

The city needs to continue its maintenance program of drainage ditches. A drainage system that is poorly maintained cannot handle the flow that it was designed for. Maintenance of the DOT canal should remain the responsibility of the DOT. The DOT should implement a program of continually maintaining the canal or properly funding the city to maintain the canal.

The city should work with the DOT to promote adequate state funding of improvements to the DOT canal. The city should also continue to require developers to design storm sewer systems to accommodate the three-year frequency storm. This is consistent with DOT design standards.

## **Solid Waste Sub-Element**

### **Terms and Concepts**

#### **Solid Waste Definition and Classification**

The materials dealt with in this element fall under the definition of "solid waste" adopted in Section 9J-5.003(88), FAC, which reads:

"Solid waste means sludge from a waste treatment works, water supply treatment plant, or air pollution control facility or garbage, rubbish, refuse, or other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from domestic, industrial, commercial mining, agricultural, or governmental operations.

In addition, this element will also address "hazardous wastes" as defined in Section 9J-5.003(34), FAC, which reads:

"Hazardous waste" means solid waste, or combination of solid wastes, which, because of its quantity, concentration, or infectious characteristics, may cause, or significantly contribute, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or may pose a substantial present or potential hazard to human health or the environment when improperly transported, disposed of, stored, treated, or otherwise managed.

For the purpose of this element, the term "solid waste" excludes hazardous waste and has been used to include the following classifications which indicate general characteristics of the materials and their sources of generation.

1. Residential wastes are mixed household wastes, including yard wastes, generated by the general population.
2. Commercial wastes are generated by the commercial and institutional sectors. Physical characteristics of these wastes are similar to those of residential wastes, in that they consist largely of combustible materials in the form of paper and food waste from offices,

restaurants, retail establishments, schools, hospitals, motels, and churches.

3. Industrial wastes include wastes generated by industrial processes and manufacturing operations, excluding hazardous wastes. These wastes also include general industrial housekeeping and support activity wastes.
4. Special wastes include wastes having special characteristics or requiring special handling. These wastes include oversize bulky wastes and materials generated in demolition and construction projects.

### **Solid Waste Facilities**

The primary focus of this element is to identify the facilities which Neptune Beach will need to utilize in order to manage and dispose of the solid waste during the planning period. For solid wastes these include transfer stations, processing plants and landfills.

The term "transfer station" refers to a facility for the temporary collection of solid waste prior to transport to a processing plant or to a final disposal site. For the purposes of this element only permanent facilities which would require attendance by trained operators will be addressed.

The term "processing plant" refers to a facility designed for incineration, resource recovery or recycling of solid waste prior to its final disposal. The purpose of these facilities may include any or all objectives of reduction of the volume of wastes disposed, energy recovery from wastes or recovery of reusable materials.

The term "landfill" refers to the final disposal site of solid wastes, and as it implies, involves burial of the wastes. Landfills are classified for regulatory purposes according to the characteristics of the water they are permitted to receive. This element will address only the type identified as a Class I landfill, which can receive the solid wastes typically generated in Neptune Beach.

## **Regulatory Framework**

### **Federal**

The potential environmental impacts of solid waste facilities have led to the development of an extensive network of permitting requirements at the federal and state levels. Impacts on air and water quality are reviewed by the U.S. Environmental Protection Agency (EPA) and the Florida

Department of Environmental Regulation (DER), and where dredging and filling might occur, by the U.S. Army Corps of Engineers (COE). The regional water management district also provides state level review for water quality and quantity impacts. Actual construction and operation of solid waste facilities requires further permits and review by DER.

For hazardous waste, the National Resource Conservation and Recovery Act (RCRA) of 1976 directed EPA to develop a national program to regulate and manage hazardous waste and provide incentives for states to adopt consistent programs. The National Comprehensive Emergency Response and Compensation Liability Act (CERCLA), passed in 1980 provided EPA with authority and funds to respond to incidents requiring site clean-up and emergency mitigation (the EPA "Superfund" Program). This act also defined the liability of business engaged in hazardous waste generation, transport and disposal and provided enforcement processes. There are no known generators or handlers of hazardous waste within Neptune Beach.

The 1988 Solid Waste Act titled "An Act Relating To Waste Management", Chapter 88-130, Florida Statutes, addresses a wide variety of solid waste being generated by the public, and encourages recycling, composting, and other methods of solid waste management and resource recovery. By 1994, the basic goal is to reduce the amount of solid waste by 30 percent before it is incinerated or sent to landfills. The Act provides for grants to assist local governments in achieving this goal and stipulates that governments which fail to implement recycling programs will be ineligible for such grants.

The City of Neptune Beach began a recycling program which started July 1, 1990. The collection system includes glass, newspaper metal and aluminum. The City contracts out with private industry for the recycling of these items and hopes to expand the program to include plastics. Due to the newness of the program (two months), no participation rate is available nor figures to assess what impact the recycling program has had or will have on the reduction of solid waste. However, the program is a beginning and Neptune Beach shall continue to work with the City of Jacksonville in reducing the overall volume of solid waste.

### **State**

At the state level, the Florida Resource Recovery and Management Act (Sec. 403.7, F.S.), passed in 1980, adopted federal guidelines and directed DER To develop and implement a hazardous waste management program. This act provided for: 1) adoption of federal hazardous waste definitions; 2) a system to monitor hazardous waste from generation to disposal; 3) an annual inventory of large hazardous waste generators; 4) permit requirements regulating treatment, storage and disposal of hazardous waste; 5) funds for hazardous waste spill and site clean-up; 6) hazardous waste management facility site selection procedures; and 7) fines and penalties for violators.

Amendments to the Florida act in 1983 provided directions and funds to establish a cooperative hazardous waste management program between local, regional and state levels of government.

These changes included provisions for city-level hazardous waste management assessments, regional and statewide facility needs assessments, and site selection for hazardous waste management facilities at the city, region and state levels.

### **Local**

The Jacksonville office of the Department of Health and Rehabilitative Services is the local agency responsible for monitoring the operation of the solid waste facilities for Neptune Beach.

### **Existing Conditions**

The City of Neptune Beach provides yardside pick up for garbage and trash five days a week. Commercial users have solid waste collection six days a week.

The solid waste is collected by four garbage trucks which contain hydraulic lifts and one trash truck for large items. The trash truck is a flatbed truck with no pick-up capability. The five trucks collect an average of eight tons per load and collect three to five loads a day.

The City of Neptune Beach does not have any solid waste disposal sites within its city limits. Neptune Beach uses solid waste landfill sites provided by the City of Jacksonville. Neptune Beach uses the Girvin Road Landfill located off of Atlantic Boulevard and Girvin Road, approximately three miles west of the city. The landfill was near capacity and was planned to be closed in 1988. The City of Jacksonville has been in the process of permitting and developing a landfill to serve the eastern portion of the county in the Bayard area, near the Duval/St. Johns County line, approximately 30 miles away. This landfill is scheduled to be on line when the Girvin Road Landfill closes, although legal challenges have slowed the entire permitting process. The Secretary of the Department of Environmental Regulation has recently issued the needed permits.

The Girvin Road landfill has a service area which generally includes the eastern and southern portions of Duval County. This includes the City of Neptune Beach.

Presently, the landfill is a Class I, 71-acre highrise landfill located on 137 acres. Currently, it is estimated that approximately 8,600 tons of waste is being disposed of at the site or an average of 1,230 tons per day.

The overall level of service established by Duval County was estimated by calculating the total amount of solid waste disposed at both landfills (combined) from 1987 - 1988 and divided that amount by the Duval County population. The results are as follows:

1. Total refuse received at:

East Landfill (Girvin Road) 446,407 tons/year  
North Landfill 591,029 tons/year

2. Divided by 1988 Official Estimate of Duval County Permanent Population:

677,007 = 1.53238 tons per capita per year  
= 8.39 pounds per capita

rounds to **8.4 pounds per person per day**

### **Analysis**

Solid waste collection for the residents in Neptune Beach is excellent and far exceeded the norm for city collection. Residents receive collection not only five days a week but from their back door. As the garbage trucks age, replacement might be necessary. A trash truck with a crane could be purchased to replace the existing trash truck. A new trash truck or a crane installed on an existing truck would relieve city workers of hand loading heavy items on the truck.

The main problem in the solid waste management is disposal. Neptune Beach depends on the City of Jacksonville for disposal sites. When the Girvin Road Landfill closes each truck will have a farther distance to travel to dispose the solid waste collected. A total of four garbage trucks are to maintain the existing level of service as a result of the additional travel time.

An alternative to having every garbage truck travel 30 miles to the new southeast landfill, is for a transfer site to be constructed near Neptune Beach. Each truck could deliver garbage to the transfer site and return quickly to collection. This would reduce the down time of each truck, save the need of adding another garbage truck and hiring the staff necessary to operate the truck. Table D-3 shows the projections for solid waste, using a figure of 7.10 pounds per capita per day.

The Girvin Road landfill currently accepts 8,600 tons of waste per week, or an average of 1,230 tons per day.

Table D-3.  
Solid Waste Estimates and Projections, Neptune Beach:  
1985 through 2010

| Year | Neptune Beach<br>Population | Estimated<br>Pounds<br>Per Day | Total Estimate<br>Pounds Per Day<br>Jacksonville | Percent(1)Day | Pounds/<br>Capita/<br>Day |
|------|-----------------------------|--------------------------------|--|---------------|---------------------------|
| 1985 | 5,909                       | 41,954                         | ---  | --            | 7.1                       |
| 1988 | 6,073                       | 43,118                         | 5,684,570  | 0.76%         | 7.1                       |
| 1995 | 6,458                       | 45,852                         | 6,164,000  | 0.74%         | 7.1                       |
| 2000 | 6,856                       | 48,678                         | 6,464,000  | 0.78%         | 7.1                       |
| 2005 | 7,122                       | 50,566                         | 6,716,000  | 0.75%         | 7.1                       |
| 2010 | 7,384                       | 52,426                         | 6,948,000  | 0.75%         | 7.1                       |

Sources: Fleet & Associates, 1987

City of Jacksonville Draft Comprehensive Plan, March, 1990

Prosser, Hallock & Kristoff, Inc., August 1990

(1) Percent = Percentage of waste from Neptune beach as compared to the Duval County total. The City of Jacksonville has included the solid waste disposal needs of Neptune Beach in its landfill needs.

1. The Level of Service established for the City of Neptune Beach was calculated by using best available historical data. In 1985, the City's estimated population was 5,909 persons. In the same year, the estimated volume of solid waste generated by the City's residents was 41,954 pounds per day. The City established the level of service by dividing the volume of solid waste in 1985 by the 1985 population. The result was 7.1 pounds per person per day.

Duval County, in the same way, divided its total solid waste volume by the County population (see Revised Table D-3 in the RESPONSE to DCAs Objection number 1 for methodology) to establish its level of service.

The difference between the two levels of service is most likely due to the variety of types of users of Duval County's landfills. Neptune Beach users consist of residential and a small number of commercial users. Duval County, on the other hand, has many more commercial establishments and a larger variety of types of users which include industrial users. Therefore, it is not surprising that Duval County's level of service is higher on a per capita basis than that of Neptune Beach.

2. The Girvin Road landfill was near capacity and was planned to be closed in 1988. The landfill was closed temporarily on November 30, 1988. The site was reopened on January 9, 1989, after discussions with FDER about the shortage of permitted disposal space within Duval County.

The City of Jacksonville has been in the process of permitting and developing a landfill to serve the eastern portion of the county in the Bayard area, near the Duval/St. Johns County line, approximately 30 miles away. This landfill is scheduled to be on line when the Girvin Road Landfill closes, although legal challenges have slowed the entire permitting process. The Secretary of the Department of Environmental Regulation has recently issued the needed permits, however, subsequent legal challenges have been filed with the Governor and Florida Cabinet and the new landfill, therefore, has not been constructed. The Girvin Road landfill will remain in use until new landfill space is found, permitted and constructed. A projection of the closing date for the Girvin Road landfill as well as the opening of the new landfill cannot be established at this time due to the legal challenges involved.

### **Recommendations**

Neptune Beach needs to work with the City of Jacksonville and support Jacksonville's efforts to construct a new landfill. The city should also investigate working with Jacksonville Beach and Atlantic Beach to provide a transfer site near the beach communities. The transfer site could be funded by all three communities or funded by one community and used by the other communities. In the second approach, user fees could be assessed.

### **Natural Groundwater Aquifer Recharge Sub-Element**

#### **Existing Conditions**

The groundwater system underlying Neptune Beach generally consists of two aquifers: the surficial aquifer and the Floridan Aquifer. The surficial aquifer lies just below the land surface and extends throughout the planning area. Recharge of the surficial aquifer is directly from rainfall in the local area, and possibly upward leakage from the deeper Floridan Aquifer or where the hardpan has been cut by excavation. Water quality of the surficial aquifer is generally good and is used for domestic, commercial, and agricultural purposes within the planning area.

The Floridan Aquifer, which is the principal groundwater supply source for the entire State of Florida, lies 400 to 500 feet below the ground surface in the Neptune Beach area. The limestone beds which make up this aquifer are approximately 1,700 to 2,000 feet thick in the Neptune Beach area. Recharge to the Floridan Aquifer generally occurs south of the planning area where the overlying beds are thin or non-existent. The overlying soils in the planning area are not conducive to substantial recharge. In comparison to other areas of the state, recharge to the Floridan Aquifer in the Neptune Beach area is very low.

## **Needs Assessment**

At the present time, insufficient information is available to institute site-specific comprehensive aquifer recharge area protection program. Once the Groundwater Basin Resources Availability Inventory (GWBRAI) for the Neptune Beach area is completed by the St. Johns River Water Management District, an aquifer for recharge program can be developed. However, based on available information, it is anticipated that there will not be significant aquifer to recharge areas within the planning period. For all new areas of development within the planning period, Neptune Beach should incorporate provisions in its land development code requiring conservation of areas with the greatest known recharge potential.

## **Introduction**

Because Neptune Beach lies entirely within the coastal area, the Conservation and Coastal Elements have been combined to avoid redundancy. The purpose of this section is to identify the natural resources of the City of Neptune Beach; identify problems that are affecting or may affect these resources; establish principles and standards regulating their use and protection; and identify how coastal resources can be protected, maintained, enhanced, and used.

## **Physiographic Setting**

The northeast Florida landscape has to a large extent been shaped by coastal processes. A falling sea level, ready supply of sediment from large rivers to the north, and a predominantly southerly longshore current have produced a topography dominated by coast parallel sand ridges and terraces separated by valleys containing coast parallel streams and lagoons. The City of Neptune Beach lies in the northern part of the East Florida section of the South Atlantic Coastal Zone and the coastline is a typical shoreline of emergence characterized by long barrier islands which protect narrow, shallow coastal lagoons.

## **Topography and Drainage**

In the Neptune Beach area the barrier island-like terrain is about two miles wide and has three distinct, coast parallel, sandy ridges that are defined in Map E-1 by the 10-foot contour interval. The maximum elevation of these ridges appears to be about 13 feet MSL within the Neptune Beach city limits. The sandy, highly permeable nature of the ridge soils encourages the rapid rainwater infiltration (20+ inches per hour), and before the proliferation of impermeable surfaces, surface runoff from the ridges was minimal and drainage was by seepage to low areas along the bases of the ridges. There are two well-defined, coast parallel depressions, or swales, which separate the sandy ridges.

One is a broad (approximately 1/4-mile wide) topographically low area of gentle relief located generally west of Third Street and approximately 1,000 feet east of Penman Road. This area has a "valley" floor of about 5 feet MSL and a water table which fluctuates from near the ground surface to 36 inches or so below ground surface.

There is evidence of temporary ponding of water in some of the lower spots in this area. Drainage has been facilitated by a system of drainage canals west of Third Street which ultimately move water across the sand ridge near Penman Road and on to Hopkins Creek. The second swale is located about 500 feet west of Penman Road and is the north-south oriented valley of Hopkins Creek. The north and south arms of Hopkins Creek have been channelized in part and are the main drainage feature for the part of Neptune Beach west of Penman Road as well as parts of Atlantic and Jacksonville Beaches. Except for a small amount of surface runoff and seepage into the ocean, the drainage for the area is generally from the ridge east of Third

Street toward the Pablo Creek estuary via drainage canals and Hopkins Creek. A more detailed discussion of the Neptune Beach drainage system is found in the Drainage Sub Element. Pablo Creek is a tributary to the St. Johns River about three miles north of Neptune Beach. It is a tidally influenced estuary whose entire length has been channelized for the Intracoastal Waterway. The Pablo Creek lagoon shallows out toward the south, and approximately 10 miles of canal in the northeastern part of St. Johns County was required for lack of a natural connection between North River to the south and Pablo Creek at the north.

### **Soils**

Map A-1 (included in the Future Land Use Element) shows the distribution and location of the soil types based on the May 1978 Soil Survey of the City of Jacksonville, Duval County, Florida by the USDA Soil Conservation Service. Except for wetland areas, the soils found within the city limits are suitable for the type of residential development that has taken place in Neptune Beach.

### **Wetlands**

Several minor wetlands occur within the Neptune Beach limits and are associated with Hopkins Creek, especially the north arm above Florida Boulevard. This area has been channelized and the spoil piles and floodplain have been colonized by cabbage palms, slash pines, and red maples.

It is noteworthy that Florida DER has recently begun to require mitigation efforts when a project eliminates vegetated swales or ditches. Many of the drainage canals in Neptune Beach, especially those near Jarboe Park, have such healthy patches of eelgrass and other desirable aquatic vegetation that maintenance operations should take them into account.

Within the wetland areas of the City there are no known commercial uses. The protected wetlands do provide open space amenities, habitat conservation, and recreational opportunities for wildlife observation and the like for residents of Neptune Beach and the surrounding area.

The raw water supply for Neptune Beach consists of four artesian-type wells extending into the Ocala limestone formation underlying the Neptune Beach area, more commonly known as the Floridan Aquifer.

In 1988, the City of Neptune Beach's Consulting Engineers conducted a study of the City's potable water treatment facility. Based on the City's billing records for both residential and commercial customers over a 1 year period, the City consumed approximately 389,850,000 gallons of water in 1988. The estimated population in Neptune Beach in 1988 was 6,073 (based on the City of Jacksonville's projections). Residential use accounted for approximately 57

percent of total water usage or 784,961 gallons per day while commercial use was estimated to be 43 percent of the total or 601,047 gallons per day. Commercial water use accounts for a higher percentage than commercial wastewater flows because of a larger percentage of non-returnable flows (i.e., septic tanks and lawn sprinklers).

According to the City's Consulting Engineers, the water treatment plant operating practices are good and the entire facility is being maintained in good condition. The facility has complied with and met all state and federal drinking water standards. The plant has a 3.0 million gallon per day capacity which the Consulting Engineers estimate will accommodate the City's needs through buildout.

U.S. Public Law 93-523, "Safe Drinking Water Act" provides for the protection of public water system wellfields and aquifers used as the sole source of a community drinking water supply. Amendments provide for wellfield protection which require states to work with local governments through the planning process to identify and to protect wellhead areas. Although the aquifer protection amendments require the U.S. Environmental Protection Agency to develop criteria for selecting critical protection areas, the criteria has not yet been developed.

It is the intent of the Legislature, under Chapter 373, Florida Statutes, that future growth and development reflect the limitations of available groundwater or other available water supplies. The St. Johns River Water Management District is in the process of preparing a study titled, "Groundwater Basin Resource Availability Inventory (GWBRAI) which will include the mapping of groundwater recharge areas for the district.

The St. Johns River Water Management District is also responsible for the issuance of consumptive use permits. These permits are for any well with a six inch or greater diameter, or for any well that withdraws 100,000 gallons or more per day, or for any facility capable of pumping 1,000,000 gallons or more per day. Within the City of Neptune Beach, there is only one potable water facility and that is the City-owned facility.

The District has applied water use restrictions for all counties within the District. These restrictions have been in place for about a year in Neptune Beach and are not expected to be lifted anytime soon due to the lack of rainfall in the area.

On a local level, Neptune Beach has not adopted specific programs to protect potable water resources, however, policies have been established in this Comprehensive Plan which will further the conservation goals and policies of the St. Johns River Water Management District.

## Upland Plant Communities

Map E-2 shows the probable pre-development distribution of plant communities within the city limits. Although much of the city is developed, the original plant community limits were, in most cases, easily determined. This was done by investigating vacant lots, many of which still harbor original vegetation. Also, many of the larger trees and in a few instances the shrub layer were spared during development, leaving good indicators of the original cover.

Almost all coastal Florida soil types are very sandy and the depth to the water table is the major factor in determining plant distribution. Consequently, elevation changes as small as a few inches can have a strong influence on species composition, and strays from "other" plant communities often blur the distinction between communities. For instance, the scrub association in the area often has flatwood shrubs in the understory. Ecotones are often indistinct and therefore community borders presented here are approximate. Six distinct plant communities are believed to have originally occurred in the city limits, including salt marsh, beach dunes, coastal strand, pond and/or slash pine flatwoods, maritime hammock, and coastal scrub.

The salt marsh, unlike any of the other plant communities in the City, is larger now than originally due to the recent sea level rise and the extension of the tidal reach by mosquito control practices and construction of the Intracoastal Waterway. Encroachments only occur in the form of road crossings.

Nothing remains of the original beach dune community within the city. The dunes have been leveled for residential development or borrow material. New dunes, however, are currently being formed between existing residences at the ends of the east-west streets where there is public access. Sea oats and other herbaceous coastal plants are relatively well established on them.

Likewise, the area east of Third Street and west of the beach dunes has been so thoroughly urbanized that there are no remains of the original vegetation. Coastal strand vegetation almost certainly occupied this area at one time, though.

Pond and/or slash pine flatwoods occurred in the two major swales between the coastal strand and the two coast parallel ridges, occupying the majority of the eastern swale and the northern quarter of the western swale. The flatwoods community exists as isolated remnants on a few vacant lots, most notably the low area 400 feet west of Third Street and south of the Atlantic Boulevard commercial strip, but these lots will probably be developed soon.

Coastal scrub is considered a fire-arrested, early stage of natural plant succession towards a maritime hammock community. Maritime hammock and coastal scrub both occupy the two coast parallel ridges, with the scrub covering only a small fraction of the acreage of that of the maritime hammock. All original units of these plant communities are developed or are slated for development.

The ridge east of Hopkins Creek is almost completely built-out and only a few lots are still

naturally vegetated. This ridge generally supported a mature maritime hammock and the residential lots have many mature trees, including live oak, laurel oak, pignut hickory, magnolia, and even some exceptionally large myrtle oaks. The ridge west of Hopkins Creek is also essentially built-out, and supports a maritime hammock with many mature trees as well as some well-developed coastal scrub.

### **Wildlife Habitat**

Wildlife habitat within the uplands is limited to small parks, residential and commercial areas, and vacant lots. Parks within the city are greatly-altered remnants of the original habitat, generally hammock. They provide wildlife habitat for only a few species of wildlife. The same can be said of residential and commercial sites. The only remaining "natural" uplands are the few small tracts shown on Map E-2, and these are largely slated for or are currently under development. Many of the original trees (especially the larger ones) have been retained, on the other hand, and they allow the city to host many migrating and winter-resident arboreal birds during the autumn, winter and spring.

The beach is frequented by many species of shorebirds and by large numbers of a few species of invertebrates such as Donax clams. Spring and autumn migrating birds follow the Atlantic Flyway along the beach through the city. The heavy recreational usage by people on the beach limits its value as daytime wildlife habitat, except for human-tolerant species, however. Nesting sea turtles also no longer use the city's beach dunes habitat.

The salt marsh is the most significant wildlife habitat in the city. It has the attributes of high productivity, large size and contiguousness with the remainder of the Pablo Creek Estuary habitat. Because of these factors, and the relatively low human intrusion rate, a large variety of invertebrates, fish, and other wildlife exist in and depend on the salt marsh. Some of the more conspicuous are the egrets and herons, kingfisher, ducks and coots, oystercatcher, raccoon, river otter, seatrout, red drum, mullet, and blue crab. The manatee utilizes the Intracoastal Waterway at the edge of the city limits for migration, and the wood stork feeds in the salt marsh's shallow flats and tidal channels.

### **Living Marine Resources**

Surf zone invertebrates and fish within the City of Neptune Beach are common species, the assemblage of which occurs along beaches throughout the South Atlantic Coastal Plain from North Carolina to South Florida. There are no noteworthy living marine resources known to occur in the city. That is not to say that the living marine resources in the city lack value. They do have value, locally and regionally, and are deserving of conservation. But there are no known unique or noteworthy locations to be singled out for special attention.

### **Threatened and Endangered Species**

In order to comply with the criteria of 9J-5.013, a survey was done to determine whether State or Federal Endangered or Threatened species are present in the Neptune Beach area. A literature review was conducted to determine the habitat preferences of species with geographical ranges including the area, and a field survey, consisting of a "walk-through" by a biologist, was conducted to determine whether Endangered or Threatened species or their preferred habitats were present in the area.

Table E-1 summarizes which Endangered and Threatened species that may occur in the project area.

Fifteen Endangered and Threatened animal species could occur in the area, but the occurrence of at least one of them, the black bear, is unlikely due to urbanization of the Northeast Florida coastal counties.

The American alligator, wood stork, sandhill crane, kestrel, and bald eagle are mobile animals with broad habitat requirements and activities in the Neptune Beach area should have little effect on them.

Piping plovers are winter migrants and creatures of the open beaches and are of no concern to Florida conservation efforts.

The least tern has a worldwide distribution. It nests shoreward of the vegetation or opportunistically on a variety of temporary sites, such as construction sites. Known nests should not be disturbed.

The west Indian manatee is known to use the Intracoastal Waterway as a migratory route and so is likely to be present in the Pablo Creek area at times. Construction projects in the estuary should follow U.S. Fish and Wildlife Service guidelines for construction in manatee areas.

Five Endangered and Threatened marine species could occur in the Neptune Beach area. The right whale is a rare migrant which should not be bothered by normal human activities in the area.

The loggerhead turtle is known to nest on Northeast Florida beaches between May and September. However, these turtles normally avoid high-use beaches and therefore are not expected to nest in the Neptune Beach area. The timing of beach nourishment programs to avoid nesting turtles is a concern of the county and the USCE.

Recent information shows that the green turtle now nests considerably south of Neptune Beach and is of no conservation concern to the area. The hawksbill is a casual visitor and is also of no conservation concern to the area.

Table E-1.  
Federal and State Listed Endangered and Threatened Species  
Which May Occur in the Neptune Beach Area

| Species  | Status  |       | Of<br>Habitat                           | Likelihood<br>Occurrence |
|--|---------|-------|---|--------------------------|
|  | Federal | State |   |                          |
| <u>Trichechus manatus</u><br>West Indian Manatee         | E       | E     | Aquatic<br>Pablo Creek                  | K                        |
| <u>Eubalaena glacialis</u><br>Black Right Whale          | E       | N     | Marine                                  | O                        |
| <u>Ursus americanus floridanus</u><br>Florida Black Bear | C2      | T     | Ubiquitous                              | --                       |
| <u>Alligator mississippiensis</u><br>American Alligator  | T       | S     | Aquatic<br>Pablo Creek<br>Hopkins Creek | K                        |
| <u>Chelonia mydas</u><br>Atlantic Green Turtle           | E       | E     | Marine                                  | O                        |
| <u>Lepidochelys kempii</u><br>Atlantic Ridley            | E       | E     | Marine                                  | O                        |
| <u>Dermochelys coriacea</u><br>Leatherback Turtle        | E       | E     | Marine                                  | O                        |
| <u>Caretta</u><br>Loggerhead                             | T       | T     | Marine                                  | O                        |
| <u>Drymarchon corais couperi</u><br>Eastern Inigo Snake  | T       | T     | Ubiquitous                              | -                        |
| <u>Mycteria americana</u><br>Wood Stork                  | E       | E     | Freshwater<br>and brackish<br>wetlands  | O                        |
| <u>Haliaeetus l. leucocephalus</u><br>Bald Eagle         | E       | T     | Ubiquitous                              | -                        |

|   |    |   |                          |   |
|---|----|---|--------------------------|---|
| <u>Falco sparverius paulus</u><br>Southeastern American Kestrel | C2 | T | Ubiquitous               | O |
| <u>Grus canadensis pratensis</u><br>Florida Sandhill Crane      | N  | T | Non-forested<br>wetlands | - |
| <u>Sterna antillarum</u><br>Least Tern                          | N  | T | Beaches                  | - |
| <u>Charadrius melodus</u><br>Piping Plover                      | T  | T | Beaches,<br>Tidal Flats  | - |

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Notes:

1. E - Endangered; T - Threatened; S - Species of Special Concern; N - No Listing; C2 - Under Review for Federal Listing
2. K - Known; O - Likely; (-) - Low; (--) - Very Low

## **Historic Resources**

No comprehensive archaeological or historical survey has been done of the City of Neptune Beach. One archaeological site, 8 DU 56, is recorded in the Florida Master State File for Section 38, Range 29 East, Township 2 South, which comprises the western 60+ percent of Neptune Beach. The exact location of this resource is unknown.

As indicated in the Housing Element, there are no historic structures on the Florida Master Site File, the National Register of Historic Places, or that have been designated by a local ordinance.

## **Air Quality**

There are no air quality monitoring stations in the City of Neptune Beach, but the Bio-Environmental Services Division of the City of Jacksonville considers certain information they collect on air quality to be applicable county-wide. Outside of the Jacksonville industrial core, non-attainment of ozone standards has been the only problem. This is thought to be related to automobile emissions, and discussions are ongoing at various levels of government regarding instigation of an auto emissions inspection program.

## **Land Use**

As depicted in the Existing Land Use Map (Map A-2), the entire length of the beachfront has already been developed. This pattern of established use has virtually eliminated land use conflicts along the beach. Furthermore, the existing land uses along the beachfront are not water-dependent or water-related.

Residential development is currently the most extensive land use within the city limits. Sales, service, and motels account for about 3.5 percent of the total land use. Land occupied by offices and professional services account for less than one percent of the area as does entertainment, lodges, and sport facilities. The Future Land Use Plan will not appreciably change the economic base of the city, impact natural resources (vegetative cover, wetlands, areas subject to coastal flooding, wildlife habitats, or living marine resources), or have major impacts on historic resources.

## **Estuarine Management**

The city limits of Neptune Beach contain at least 275 acres of salt marsh in the Pablo Creek estuary. This is part of a large area known as the Florida East Coast estuary which includes all the estuarine area adjacent to the Intracoastal Waterway from south Flagler County to the St.

Johns River. The Pablo Creek estuary is dominated by salt cordgrass (Spartina alterniflora). The Spartina marsh extends up Hopkins Creek to Florida Boulevard and Seagate Avenue.

The marsh was examined at several locations by a biologist in March 1988 and appears to be in reasonably good condition. There are scattered dead or dying cabbage palms in the Hopkins Creek marsh which are probably evidence of sea level rise or culturally induced salinity increases, or both.

### **Water Quality**

The Pablo Creek estuary has suffered a general decline in water quality due to urban development. The estuary is now classified by the Department of Environmental Regulation (DER) as Class III waters, suitable for recreation, fish, and wildlife. Shellfish harvesting is no longer sanctioned in any waters in Duval County south of the St. Johns River.

The Florida DER in their Basin Assessment Coastal Area study measured pertinent water quality parameters in the Intracoastal Waterway from fall 1985 to spring 1987. This is the most recent comprehensive water quality data available for the area and it has shown that the Pablo Creek area meets Class III standards. DER concluded that "the Intracoastal Waterway from the St. Johns River to southern Flagler County is, in general, a healthy system", and that "most degradation of the water occurs at point sources." These sources are divided into treatment plant outfalls and stream inputs and are discussed in the following section.

In the past, the city sewage treatment plant was a major source of pollution in the area. Before the capacity of the sewage treatment plant was increased, the plant operated over capacity. This along with equipment problems have in the past resulted in several episodic as well as chronic violations of water quality standards defined by the Clean Water Act.

The city received notices of violation from the Environmental Protection Agency and DER regarding this problem, and on June 15, 1987 the city imposed a moratorium on new sewage hookups and passed a resolution to correct the existing deficiencies. The capacity of the treatment plant has been increased to meet current demand. The improvements made to the sewage treatment plant, have addressed the effluent discharge problem. A detailed discussion of the sewage treatment plant is included the Sanitary Sewer Sub-Element.

The other major pollution source to the Pablo Creek estuary is Hopkins Creek. As discussed elsewhere in this report, this is the ultimate discharge point for almost all of the city's stormwater runoff, as well as part of the runoff from the City of Jacksonville Beach and the City of Atlantic Beach. No water quality data has been located for this stream. Policies should be included that address stormwater management, including a provision requiring that the Land Development Regulations incorporate stormwater management.

Impacts of future land uses and public facilities and infrastructure will not appreciably impact

the estuarine environment, water quality, or circulation patterns.

Development within any portion of the salt marsh will require permitting by the state of Florida (Department of Environmental Regulation and St. Johns River Water Management District) and the federal government (US Army Corps of Engineers). These are the agencies that will be utilized to ensure the proper management of the estuarine environment.

### **Beach and Dune Systems**

Neptune Beach has approximately 1.2 miles of frontage along the Atlantic Ocean. For the most part, the beach area has been developed with residential units. A bulkhead runs the length of the beach. The beach area ranges from about 180 feet wide at the southern end to about 230 feet wide at the northern end.

#### **Past Erosion/Accretion**

The single greatest cause of beach erosion has been and will continue to be offshore sediment transport, which results from the rising sea level. Studies have shown that sea level has been rising at an average rate of 0.7 to 1.0 foot per century. For every foot in rise there is a loss of 30 feet of beach due to erosion. Therefore, a potential loss of 3.6 feet of beach per year exists solely from sea level rise.

The beaches of Duval County have undergone severe erosion with beach instability and erosion reported as early as 1834. The problem is one of erosion and lowering of the beach profile where protected by seawalls, as in the case in Neptune Beach, and recession of the dunes on unprotected beaches.

Natural buildup of the beaches occurs during the summer months, but historically erosion during the winter has usually offset summer gains. Based upon 1923-1963 surveys, Neptune Beach and the neighboring beaches were receding at an estimated rate of about two feet per year (USCE 1974).

#### **Beach/Dune Restoration and Protection Measures**

Corrective measures prior to 1974 were primarily limited to construction, maintenance, and replacement of seawalls and bulkheads, and after a bad winter storm in 1962, the placement of granite revetments.

In 1974 a beach nourishment project was proposed by the U.S. Army Corps of Engineers (USCE) to: (1) protect against normal weather and, to a degree, against storms; and (2) provide beach areas for recreational needs. The Beach Erosion Control Project, Duval County was approved and in 1979, 3.3 million cubic yards of material were placed on 10 miles of Duval County shoreline. The initial fill material was obtained from offshore borrow areas, estimated at

about 485 acres. In addition, it was estimated that about 260,000 cubic yards of material would be required every year to replenish annual losses, with this material coming from maintenance dredging of shoals in Jacksonville Harbor navigation channels. About 280,000 cubic yards of material were placed on the beaches in 1980, and USCE just finished a similar replacement in 1987.

The results of the Beach Erosion Control Project have been satisfying. There is now a wide beach in the Neptune Beach area and a line of small foredunes has formed along and on top of the old bulkheads and revetments. These dunes have already been colonized (or planted) by typical dune vegetation, including sea oats and railroad vine. Beachfront homeowners as well as others have encouraged the establishment of dune vegetation by fertilization, watering, and control of foot traffic (USCE, David Schmitt, personal communication, 1988).

As might be imagined, there are adverse environmental impacts associated with the continual urbanization of Neptune Beach. These include: (1) destruction of benthic invertebrates in the offshore borrow area; (2) loss of large numbers of surf zone benthic invertebrates (most notably Donax) in the beach fill areas; and (3) temporary increases in turbidity during periodic replenishment operations. These impacts have been addressed in the Final Environmental Impact Statement, Beach Erosion Control Project, Duval County (USCE 1974).

Short of tearing down the jetties at the mouth of the St. Johns River, which have captured sediments that formerly were moved south by longshore currents to naturally replenish the Duval County beaches, artificial replenishment programs such as the earlier one described above are the only way to effectively control beach erosion in the area.

The Beach Erosion Control Project has a 50-year project life and should take care of beach erosion problems until well into the next century.

In 1971, the state established the Coastal Construction Control Line, which defines that portion of the beach and dune system which is subject to severe fluctuations based on a 100-year storm. Permits are required to build seaward of this line. Since Neptune Beach has long been completely developed along the beach, this line will only affect redevelopment efforts.

### **Public Access**

Neptune Beach has approximately 1.2 miles of frontage on the Atlantic Ocean. Map F-1 (included in the Recreation and Open Space Element) shows the numerous access points to the beach. As illustrated, all of the access points are located at street ends. Parking in these areas is limited to on-street parking; there is no off-street parking available except for several handicapped parking stalls at the end of Lemon Street.

To provide additional parking for beach access, the City would need to purchase existing developed property and demolish existing structures. Based on the value of ocean-front property, the costs of this would simply be prohibitive.

The Post-Disaster Redevelopment Plan that the City will prepare should include the provision of adequate parking for beach use.

There are no public or private marinas, public docks, or fishing piers within the corporate limits of Neptune Beach.

The beach environment offers a wide variety of water-related recreational opportunities, including fishing (boat and non-boat), swimming, sunbathing, shell collecting, beachcombing, boating, sport activities, picnicking, and walking.

### **Natural Disaster Planning**

Natural disaster planning includes many types of natural phenomena such as hurricanes, tornados and floods. This Coastal/Conservation Element will be limited to hurricane disaster planning. The potential for loss of life and property from hurricanes in Neptune Beach is significant.

A report, entitled Northeast Florida Hurricane Evacuation Study (NEFHES), was published by the Northeast Florida Regional Planning Council in December, 1988. This report was heavily utilized in the preparation of this portion of the Conservation/Coastal Element.

The Storm Surge Atlas for Northeast Florida (Nassau, Duval and St. Johns Counties), calculated by the National Oceanic and Atmospheric Administration (National Weather Service, National Hurricane Center), was also used in the preparation of this section.

In addition to these resources, the Flood Insurance Study, City of Neptune Beach, Florida published by the Federal Emergency Management Agency and the associated flood insurance rate map were used.

### **Hurricane Evacuation**

This next section looks at the following areas of concern in hurricane planning: hurricane vulnerability zone; evacuation requirements for city residents including estimates for the number of persons requiring evacuation, estimates for the number of residents requiring public hurricane shelter, and number of spaces available; evacuation routes; constraints on evacuation routes; and evacuation times.

Storm surge, wind, and rain are the three major destructive forces of hurricanes. Of these three, the storm surge is the most destructive hurricane force to be expected along coastal areas. Storm-surge is the mound of wind-driven water, 50 to 100 miles wide, that moves across the coastline as a hurricane makes landfall. As illustrated in Table E-2, a Category 5 hurricane

storm-surge at Neptune Beach could elevate the ocean surface as much as 17.20 ft NGVD.

Maps in the storm surge atlas depict the portions of the City which would be inundated under Categories 1 through 5 hurricanes, based on a storm forward velocity of 12 knots and a tide that is 1.0 ft above NGVD (the 1929-established NGVD is currently approximately 0.45 ft below actual mean sea level due to the long-term rising of sea level). The maps show there would be some inundation of uplands along the beach and adjacent to Hopkins Creek in Categories 1, 2 and 3 hurricanes, and that the entire city would be inundated in Categories 4 and 5 hurricanes.

Table E-2.  
Time/History Points for SLOSH-modeled Hurricanes, Neptune Beach

| Location  | Map Key | Category | 40<br>MPH<br>Winds<br>(1) | Maximum<br>Surge<br>Elevation/<br>Feet |
|---|---------|----------|---------------------------|--|
| Atlantic Boulevard<br>Bridge at<br>Intracoastal<br>Waterway | D21     | 1        | 6.0                       | 0                                      |
|   |         | 2        | 9.0                       | 1.0                                    |
|   |         | 3        | 11.0                      | 6.4                                    |
|   |         | 4        | 13.0                      | 14.1                                   |
|   |         | 5        | 14.5                      | 17.2                                   |
| Atlantic Beach<br>Along<br><br>Ocean<br>Front               | D22     | 1        | 6.5                       | 4.3                                    |
|   |         | 2        | 10.0                      | 7.7                                    |
|   |         | 3        | 12.5                      | 10.9                                   |
|   |         | 4        | 13.0                      | 14.1                                   |
|   |         | 5        | 14.5                      | 17.2                                   |
| Beach Boulevard<br>at Intracoastal<br>Waterway              | D23     | 1        | 6.0                       | 0                                      |
|   |         | 2        | 9.0                       | 0                                      |
|   |         | 3        | 11.0                      | 0                                      |
|   |         | 4        | 13.0                      | 13.8                                   |
|   |         | 5        | 14.5                      | 17.1                                   |

Source: Storm Surge Atlas for Northeast Florida (Nassau, Duval, and St. Johns Counties); no date

Notes:

1. Number of hours before landfall at forward speed of 12 knots.

Wind is the second-most destructive force of hurricanes. While winds may be nearly absent

within the eye of the storm, sustained winds of over 74 mph will occur up to 50 miles from the eye, and can range up to 150 mph with gusts up to 200 mph. Winds decrease significantly as the storm moves overland, but the entire City of Neptune Beach would be susceptible to full hurricane force winds due to its proximity to the coastline. Hurricanes are categorized according to the velocity of sustained winds around their center. The five categories of hurricanes according to the Saffir/Simpson Scale are shown in the following table.

Table E-3.  
Hurricane Categories

| Category | Winds (MPH)  |
|----------|--------------|
| 1        | 74 - 95      |
| 2        | 96 - 110     |
| 3        | 111 - 130    |
| 4        | 131 - 154    |
| 5        | 155 and over |

Source: Northeast Florida Regional Hurricane Evacuation Study; Northeast Florida Regional Planning Council, 1988.

Rain is considered the third-most destructive hurricane force. In the average 24-hour period it normally takes a hurricane to pass over an area, 5 to 10 inches of rainfall may occur. Historic rainfalls of up to 20 inches have also occurred, however.

Hurricanes may occur at any time from June 1 to November 30, although most hurricanes have struck from mid-August to mid-October. Damage from hurricanes can result from any of their three major forces - storm-surge, wind, and rain, or from a combination of any of them. Storm-surge can overtop seawalls or floodplains to damage upland features by flooding or by salting. Storm-surge can, in concert with wind-driven waves and long-shore currents, undercut and destroy seawalls, roads, and buildings. This kind of synergistic action has the capability to create or destroy coastal barrier islands, to move lagoonal inlets, and to change coastal drainage patterns. Similarly, storm-surge and rainfall can inundate low-lying roads, preventing vehicular traffic from entering or evacuating coastal areas. Further examples are provided in the NEFHES:

1. storm-surge and wind from a Category 1 or 2 hurricane can destroy or heavily damage beachfront buildings, seawalls, piers and boardwalks; and
2. storm-surge and wind from Category 3, 4 and 5 hurricanes are expected to cause massive destruction on coastal barrier islands and such exposed shorelines as Neptune Beach.

The NEFRPC has established two vulnerability levels (A and B) reflecting flooding levels. The

following table describes the hurricane type creating each vulnerability level.

Table E-4.  
Regional Vulnerability Levels

| Vulnerability Level | Storm Description   |
|---------------------|---|
| A                   | Landfalling Category 1-2; exiting and paralleling hurricane, Category 1-3 |
| B                   | Landfalling Category 3-5  |

Source: Northeast Florida Regional Hurricane Evacuation Study; Northeast Florida Regional Planning Council, 1988.

A significant proportion of the city's residents will need to evacuate during Category A hurricanes, and all residents will need to be evacuated in Category B hurricanes. Generally, everyone living within the storm surge flood zone must be evacuated. In addition, all those living in mobile homes must be evacuated due to high wind vulnerability. Finally, all those who live within areas that historically flood during periods of heavy rainfall must be evacuated. In other words, everyone living between the Atlantic Ocean and US Highway A1A, would need to be evacuated in a Category A hurricane. In a Category B hurricane, everyone living between the Intracoastal Waterway and the beach will need to be evacuated.

General evacuation routes from the Beaches area are to drive south to the three east-west through roads (Atlantic Boulevard, Beach Boulevard, and J. Turner Butler Boulevard), then turn west toward Jacksonville. Neptune Beach residents are to travel south to Beach Boulevard and then west to Jacksonville.

Clearance time is critical to determine the amount of lead time needed for an evacuation order. Clearance time is the time it will take to mobilize and travel to the destination of safety prior to the arrival of gale force winds, starting from the time when the evacuation order is first given. Clearance time depends on response time, which can be categorized as being "rapid", "medium" or "slow." Finally, clearance time is modified by evacuation road traffic conditions. Beach Boulevard is four-laned and in good condition.

The existing westbound lane of the Jackson Turner Butler Boulevard over the Intracoastal Waterway could be divided into two lanes during evacuations, saving three to five hours in total Duval County (and Neptune Beach) clearance times.

The following assumptions have been made in determining clearance times:

1. All drawbridges over the ICW will remain closed until the evacuation is complete, and that early coordination with the Coast Guard will be done to ensure that all boats will be

moved to safe ports during or before the hurricane watch period;

2. Extra law enforcement officers will be assigned to critical roadway segments and intersections along the evacuation route; and
3. Incapacitated vehicles will be quickly removed from the road during the evacuation.

The 1988 NEFHES study determined clearance times for the all of Duval County and did not calculate them for smaller areas such as Neptune Beach. Maximum Duval County clearance times are considered appropriate for this plan, since the residents of the City of Neptune Beach (and other coastal communities) will have to travel farther than anyone else in the county to evacuate. Clearance times for City of Neptune Beach evacuees are given in Table E-5. As shown, the clearance times will increase due to an increasing population from 1990 to 1995.

Pre-landfall hazards time must be added to clearance time to determine when to issue an evacuation order. Pre-landfall hazards time refers to the period when sustained gale force winds, which are 40+ mph winds, make evacuation dangerous. Evacuation order time (clearance time added to pre-landfall hazards time) is the time in hours before hurricane eye landfall in which an evacuation order must be given to allow all evacuees to reach their chosen destinations.

Table E-5.  
Clearance Times and Pre-Landfall Hazards Times, Duval County

| Category and Response Times | 1990 Clearance Times (hours) | 1995 Clearance Times (hours) | Pre-LandFall Hazard Times |
|-----------------------------|------------------------------|------------------------------|---------------------------|
| <b>Rapid Response</b>       |                              |                              |                           |
| 1                           | 5.00                         | 5.50                         | 6.5                       |
| 2                           | 5.00                         | 5.50                         | 10.5                      |
| 3                           | 7.75                         | 8.50                         | 12.5                      |
| 4                           | 10.25                        | 11.00                        | 14.5                      |
| 5                           | 10.25                        | 11.00                        | 16.5                      |
| <b>Medium Response</b>      |                              |                              |                           |
| 1                           | 6.50                         | 6.75                         | 6.5                       |
| 2                           | 6.50                         | 6.75                         | 10.5                      |
| 3                           | 8.75                         | 9.75                         | 12.5                      |
| 4                           | 11.25                        | 12.25                        | 14.5                      |
| 5                           | 11.25                        | 12.25                        | 16.5                      |
| <b>Slow Response</b>        |                              |                              |                           |
| 1                           | 9.50                         | 9.50                         | 6.5                       |

|   |       |       |      |
|---|-------|-------|------|
| 2 | 9.50  | 9.50  | 10.5 |
| 3 | 10.50 | 11.50 | 12.5 |
| 4 | 13.00 | 14.00 | 14.5 |
| 5 | 13.00 | 14.00 | 16.5 |

Source: Northeast Florida Regional Hurricane Evacuation Study; Northeast Florida Regional Planning Council, 1988.

### **Evacuation Requirements**

Within Neptune Beach there are only two evacuation shelters: Fletcher Senior High School and Neptune Beach Elementary School. Both of these schools are categorized as a staging shelter. Water is available at both sites, while a kitchen and food are only available at Fletcher Senior High.

Within the entire Duval County, there is a total of 45,200 spaces in primary shelters. There is also a significant number of secondary or alternate shelters. Based on projections there will be adequate shelter for Duval County residents through the year 2000 in the event of a category 1, 2 or 3 hurricane. However, there is insufficient space for residents in the event of a category 4 or 5 hurricane.

Within Neptune Beach, there are no nursing homes or hospitals with special evacuation requirements.

Flooded roadways make evacuation extremely hazardous and in some cases virtually impossible. Within the Neptune Beach area, there are several roadways that are vulnerable due to low-lying areas, including: Atlantic Boulevard, Beach Boulevard, and J. Turner Butler Boulevard. These roadways should be monitored for disabled vehicles and necessary passenger assistance.

The special needs of the elderly and the handicapped for evacuation and shelter become acute during hurricanes. The City needs to work with adjacent municipalities and appropriate regional agencies to provide evacuation for these special populations.

### **Coastal High-Hazard Area**

The coastal high-hazard area, or the "VE-Zone" is the area subject to the hurricane storm surge, which is the dome of wind-driven water that is forced inland as the hurricane makes landfall. As depicted by the Federal Flood Insurance Rate Maps, the coastal high-hazard area is limited to the beachfront area (Map E-1). There are no public facilities or infrastructure in the coastal high

hazard area.

The CCCL has been included on Map E-1 and is included at the end of this section.

### **Post Disaster Redevelopment**

In order to guide redevelopment after a hurricane event, the City of Neptune Beach needs to prepare a Post-Disaster Redevelopment Plan. At a minimum, such a plan would address ways to reduce costs for replacing needed infrastructure and reduce risk to human life from another hurricane event; predetermine densities for redevelopment; identify funding mechanisms to finance public expenditures for replacing infrastructure, priorities of land uses adjacent to water bodies, needed improvements to facilitate proper evacuation of residents in the event of another hurricane.

## **Introduction**

The purpose of the Recreation and Open Space Element is to plan for the recreational needs of the residents of Neptune Beach. As previously noted, Neptune Beach in large part has already been developed. This fact will have a definite impact on the provision of future recreational opportunities available in Neptune Beach.

This element is organized into three major sections. After this introductory section, the second section looks at existing recreational amenities in the city. The next section looks at the present supply of recreational facilities and analyzes the need for future facilities.

## **Existing Parks and Open Space**

Jarboe Park is the largest of the four parks owned and operated by the City. It is approximately 12 acres and is located at the northwest corner of Florida Boulevard and Third Street. The site is bounded on the south by Florida Boulevard, on the west by Fifth Street and the north by Bay Street. Only about 200 feet borders Third Street. The remainder of this eastern side borders the rear of a small office center and apartment complex.

The recreation acreage includes a pond and drainage canal, but does not include the space occupied by the city water works and a small electric substation on the site.

The park provides seating and picnic areas with 4 shelters for leisure recreation and active recreational facilities include 1 baseball diamond, 3 tennis courts, 700 feet of jogging trail/walkway, and a kiddie playground. A Girl Scout hut is also located on the property which is leased from the city.

Futch Park is a very small park (approximately 1/4 acre) at Bay Road and Oleander Place near the northwest corner of the City. A large portion of this small, triangular shaped park was created by the closing of a public street ROW. This park contains some playground equipment.

Howard Basil Park is a small park located to the southwest of Jarboe Park. The other park is Stephens Park, which is located at the intersection of Forest Avenue and Florida Boulevard. Both of these sites are less than one-quarter of an acre and do not have recreational facilities.

existing recreation

Neptune Beach Elementary School, and Fletcher Junior and Senior High Schools also provide recreation space to the residents of Neptune Beach.

The public has pedestrian access to the ocean beach via 21 street ends. In addition to the ocean beach, the marshland bordering the Intracoastal Waterway at the western boundary of the City provides about 275 acres of permanent open space.

### **Analysis: Demand and Needs Assessment**

The needs for recreation and open space for a beach community are considerably different than those of an inland community. Undoubtedly, a large number of the people who live in Neptune Beach were attracted here because of the beautiful ocean beach. For some, this attraction was for the active recreation of swimming and surfing. For others, it was for the passive recreation of sunbathing or strolling and the relaxation of experiencing the ocean environment.

Recreation means different things to different people but, in any form, it is important to one's health and mental outlook on life. The ocean plays a large role in meeting the recreational needs of the citizens of Neptune Beach and it is important to preserve this natural feature and keep it accessible to the entire community. Other recreational opportunities are also important and this element of the Comprehensive Plan will discuss these opportunities.

### **Recreation Standards**

The citizens of Neptune Beach share recreation facilities with the adjacent cities of Jacksonville Beach and Atlantic Beach and they are convenient to those facilities which are provided for the entire metropolitan area. Residents of Neptune Beach are within ten minutes driving time from Kathryn Abby Hanna Park, which can be classified as an Urban-District Park, and well within one hour driving time to Little Talbot Island, which can be classified as a Regional Park.

In order to determine whether additional parks are needed in Neptune Beach during the planning period, LOS standards need to be set. These standards, interpreted as acreage per 1,000 residents, provides a quantitative measurement of parks needed to accommodate a given population.

In 1990, there were 12 acres classified as a Neighborhood Park, which served approximately 6,100 residents. This translates into approximately 2 acres per 1,000 residents. Based on the population projections, an additional 1,200 residents will be added to Neptune Beach by 2010, which will require that an additional two acres be added. The problem is that Neptune Beach is virtually built-out and that no land is available for the City to develop additional parkland. Land may become available when portions of the City are redeveloped. Over the next five years, no additional parkland will be needed to accommodate the slightly increased population.

Jarboe Park meets the acreage requirements for a Neighborhood Park, but it is not within a 1/2 mile from those living west of Penman Road.

The Comprehensive Plan adopted in 1981 recommended that a walk-to neighborhood park be located west of Penman Road. As pointed out, the City meets the minimum area requirements for recreation, but the residents west of Penman Road do not have a Neighborhood Park except for the Neptune Beach Elementary School site.

Land west of Penman Road has been developed, or is planned for development, without the provision of a park site for active recreation. In lieu of an active park for this area, the City might look to the provision of bike paths and jogging trails. The compactness of the developable area of the City offers the opportunity to connect the natural open spaces with such trails and paths and create a "pedestrian oriented" city. A section in the Traffic Circulation Element addresses the proposed bike path through the city.

Fortunately, the recreation and open space needs are not critical in Neptune Beach, since there is no space available for additional parks. However, as areas are redeveloped in future years, recreation and open space should be required.

## **Introduction**

According to Chapter 163 Florida Statutes, the purpose of the Intergovernmental Coordination Element is to show relationships and state principles and guidelines to be used in the accomplishment of coordination of the adopted comprehensive plan with (1) the plans of school boards and other units of local government providing services but not having regulatory authority over the use of land; (2) the comprehensive plans of adjacent municipalities, the county, adjacent counties, or the region; and (3) the state comprehensive plan. Furthermore, the state law requires that the element "shall demonstrate consideration of the particular effects of the local plan, when adopted, upon the development of adjacent municipalities, the county, adjacent counties, or the region or on the state comprehensive plan."

This Element consists of three major sections. The first section addresses the existing local, regional, and state agencies that interact with Neptune Beach. The second section takes a detailed look at specific problems and needs for better coordination. The last section presents the goals, objectives, and policies.

## **Data Collection**

Data for this element was derived primarily from three sources. They include:

1. Politics Is your Business, A guide to Governmental Operations in Duval County, published by the League of Women Voters;
2. The Charter for the Consolidated City of Jacksonville, Florida; and
3. The Interlocal Agreement between the City of Jacksonville, Atlantic Beach, Neptune Beach, Jacksonville Beach and Baldwin, outlining services to be provided to the municipalities within the City of Jacksonville by the consolidated government.

## **Local Governmental Agencies**

The City of Neptune Beach is one of the four municipalities within the consolidated City of Jacksonville. When the charter for the City of Jacksonville was adopted in 1968, the city limits for Jacksonville were extended to the boundaries of Duval County. The municipalities of Jacksonville Beach, Atlantic Beach, Neptune Beach and Baldwin were permitted to maintain the same governmental structure and laws which existed prior to consolidation. Therefore, residents of Neptune Beach vote in elections for Neptune Beach and Jacksonville.

The City of Jacksonville provides Neptune Beach the same functions and services that were provided by Duval County prior to consolidation and any additional function county governments are required to provide. In addition, the City of Jacksonville can provide additional urban services as desired by the Neptune Beach city council.

In 1982, an inter-local agreement was signed between the City of Jacksonville, Neptune Beach, Atlantic Beach, Jacksonville Beach and Baldwin outlining the services the City of Jacksonville, as the county government, would provide to the other four municipalities.

The office of the City Manager has the responsibility to coordinate with the City of Jacksonville for provision of services provided by various Jacksonville agencies.

The following is a description of City of Jacksonville agencies that provide services to Neptune Beach. Exhibit G-1 is an organization chart for the City of Jacksonville noting those agencies serving Neptune Beach.

### **Mayor of Jacksonville**

Residents of Neptune of Beach vote for the Mayor of Jacksonville. The mayor is the full time chief executive and administrative officer. He appoints all department directors, deputy directors, and division chiefs, subject to approval of the City Council. The mayor submits an annual budget, as well as periodic reports and recommendations, to the City Council. He appoints members of various advisory bodies and independent agencies set forth in the charter, subject to confirmation by the City Council. He may appoint and create additional advisory bodies not provided for in the charter when the public interest so warrants. He represents the City of Jacksonville at city, regional, state and national functions.

### **City Council**

The City Council of the City of Jacksonville consists of 19 members, one from each of the 14 council districts and five elected on an at-large basis. Residents of Neptune Beach are represented by a district councilman and the five at-large councilmen.

The Jacksonville City Council passes ordinances that will provide for the needs of the community. These include the budgets of general government and independent agencies. The City Council levies taxes and authorizes issuance of bonds, plans for the development of Duval County including use of lands and water and structures. Its authority for zoning decisions does not include Neptune Beach.

Exhibit G-1

### **School Board**

The Duval County School Board is by law a policy-making body charged with responsibility for the efficient operation and general improvement of the school system. The board approves or disapproves principals, assistant principals, supervisors and teachers recommended by the administration. The superintendent of schools is appointed by the board. The board governs all local school matters within provisions of Florida law, Jacksonville city charter and the state Department of Education regulations. The school board is composed of seven elected members, one from each school district which is composed of two adjoining city council districts. Neptune Beach residents vote for school board members.

The school board operates three schools in the Neptune Beach area. Neptune Beach Elementary, located at 1515 Florida Boulevard, and Fletcher High School, located at 700 Seagate Avenue, are in the city limits. Fletcher Junior High is located at 2000 N. Third Street adjacent on the south side of Seagate Avenue in Jacksonville Beach. This school also provides community education courses. A community pool is located on the Fletcher High School property.

### **Duval County Health Facilities Authority**

This authority assists non-profit hospitals with bond issues and validations, with the goal of reducing the costs of services to the residents of Duval County.

### **Duval County Housing Authority**

The Duval County Housing Authority was established by county ordinance as authorized under state law (159.601, F.S.) and has the authority to use a variety of financing techniques, including revenue bonds, to build, buy or rehabilitate affordable housing.

The Duval County Housing Authority issues municipal bonds to aid in the low-cost financing of housing for Duval County residents.

### **Duval County Tourist Development Council (TDC)**

The TDC administers funds received via the tourist development tax. Funds are collected county wide and funds are used throughout the county.

### **Civil Service Board**

Neptune Beach has a representative on the Civil Service Board. The board is responsible for developing and fostering the personnel policy of the government.

### **Central Services**

Central Services is responsible for the management, operation and control of all central services used by all departments, the school system and most boards, independent agencies and

authorities. This includes agencies that provide services to Neptune Beach. In addition, Neptune Beach may ask to be included at their option. It has the following Divisions:

1. **Communications** operates and maintains all the city's communications systems.
2. **Information Services & Motion Pictures/TV** operates public relations, advertising, information and promotion programs for the city. It coordinates production services for movie producers and promotes Jacksonville and its beaches as a center for the movie industry.
3. **Information Systems** develops, operates and manages all data processing centers, computer installations and microfilm activity. This includes the on-line computer system used by the Beaches Library.
4. **Motor Pool** provides motor vehicle services to the government and independent agencies.
5. **Public Buildings** maintains all public buildings, including the Beach Library.
6. **Purchasing** purchases or obtains all supplies, equipment, personal property, contractual services, insurance and surety bonds used by the government and independent agencies.

### **Health, Welfare, and Bio-Environmental Services**

This department administers all health, environmental and welfare functions of the government. It has the following Divisions:

1. **Bio-Environmental Services** provides mosquito control services; enforces air, water and noise pollution laws; and administers nuisance abatement services.
2. **Public Health** carries out many duties imposed by law on city and county public health departments, including operation of public health clinics, control of epidemics, examination of drinking water supplies, rodent control, and inspection of septic tank installations. The Public Health Division operates a health clinic at 850 South Sixth Avenue, Jacksonville Beach, to serve residents of the beaches communities.
3. **Welfare** administers local welfare activities, acting as a referral agency and providing temporary relief for people in need.

### **Human Services**

Human Services is responsible for programs which help protect, develop and motivate human resources. It advises and assists the Community Relations Commission, Northeast Florida

Community Action Agency and the Commission on Children and Youth, among others. The programs administered by the Human Services Department are provided to Neptune Beach through the Interlocal Agreement signed in 1982. It has the following Divisions:

1. **Adult Services** supervises community centers, nutrition programs, commodity distribution and other social services for adults aged 18 and above. The division also serves the needs of senior citizens.
2. **Child Services** is responsible for the development and implementation of the City's social services to Jacksonville's children from birth to 18 years.
3. **Consumer Affairs** enforces and administers all laws and ordinances regulating weights and measures, investigates complaints of fraud or unfair dealings with consumers, maintains extensive complaint files for consumers' guidance, represents the interest of the consumers and conducts consumer education programs.
4. **Private Industry Council/Training and Development** coordinates manpower programs of the city, state and federal governments, and private agencies.
5. **Veterans Service** assists veterans and their families in obtaining social services and benefits for which they may be eligible.
6. **Victim Services** plans and develops responsive crime victim assistance services.

### **Housing and Urban Development**

The Housing and Urban Development Department develops and administers community, neighborhood, urban renewal, public housing and rehabilitation programs; it enforces the minimum housing, unsafe structures and mobile home tie-down codes. It has the following divisions:

1. **Community Development** plans, develops and engineers programs for the department. Sections of this division acquire, and dispose of, real estate in connection with urban redevelopment projects, and relocate displaced families and businesses. The primary funding for this division is an entitlement grant from the U.S. Department of Housing and Urban Development. Jacksonville changed its entitlement grant from a city to an urban county in 1988. They provide community assistance to Neptune Beach.
2. **Housing Assistance** provides rent subsidies for moderate and lower income families under the Section 8 program.
3. **Housing Management** manages the 3,747 low-rent public housing units the city owns, and provides social and rehabilitative services for the residents.

4. **Housing Safety** enforces the minimum housing code and unsafe structures ordinance. A section of the division provides relocation services for those displaced by enforcement of the housing codes.

### **Public Safety**

This department provides for the public's safety through fire protection and prevention, animal control, public parking and civil defense. It has the following divisions:

1. **Animal Control** enforces Jacksonville ordinances pertaining to animals, except those used for agricultural purposes.
2. **Fire Operations** provides fire protection and prevention. They provide back up fire protection to the Neptune Beach Fire Department.
3. **Fire Service** provides administrative, personnel, training, communications and supply function; and the maintenance shop.

### **Public Works**

This department plans, constructs and administers all public work programs for the city. This includes the county roads in Neptune Beach.

1. **Engineering** plans all public works projects for the government and supervises the construction.
2. **Solid Waste Disposal** is responsible for carrying out the city's long-term commitment to an effective system of solid waste disposal; it maintains the city's landfills. Solid waste collected by Neptune Beach's garbage trucks is disposed of in the City of Jacksonville landfills. Neptune Beach is not charged for dumping solid waste. The City of Jacksonville must plan for disposal of Neptune Beach solid waste in Jacksonville's solid waste disposal/landfill planning.
3. **Streets and Highways** plans, builds and operates the streets and highways, including county roads in Neptune Beach.
4. **Traffic Engineering** plans, design, installs and maintains all street name signs, traffic control signs and pavement marking required for the safe and orderly flow of traffic on the streets and highways in the City of Jacksonville. They provide these services for Neptune Beach except for the provision of minor street signs.

### **Recreation and Public Affairs**

The Recreation and Public Affairs Department provides and operates recreational and public

affairs facilities and programs. This includes regional parks which serve residents of Neptune Beach. Kathryn Abbey Hannah Park, located off of Mayport Road, is a regional park in the beaches area. Its Divisions include:

1. **Administrative Services** is in charge of personnel; budgeting; special events; planning, research, grants; and communications/information.
2. **Recreation and Parks** plans for and operates all parks and recreational facilities and programs. This includes regional park serving Neptune Beach such as Kathryn Abbey Hannah Park.

### **General Counsel**

The office of General Counsel has the responsibility for providing legal counsel and services to the executive and legislative branches of the consolidated government and its independent agencies. This includes the school board and other City of Jacksonville agencies that serve Neptune Beach.

### **Sheriff**

The Sheriff is responsible for the management, operation and control of law enforcement and traffic safety; the administration of the prison farm and jail; and the service of legal process. He is elected for a term of four years. Neptune Beach residents vote for the sheriff.

### **911 Emergency Service**

The 911 emergency service area for all of Duval County is operated through the communications division of the Sheriff's office. Residents of Neptune Beach can dial 911 for an emergency requiring police, fire or rescue assistance. This call comes to the Sheriff's office in downtown Jacksonville and is dispatched to the Neptune Beach Police or Volunteer Fire Department. The Sheriff's office can dispatch police, fire or rescue back up if needed.

### **Supervisor of Elections**

The Supervisor of Elections registers people to vote, conducts all elections, tabulates election returns, keeps records of election returns and is custodian of the election machines.

### **Property Appraiser**

The property appraiser assesses all real, personal and tangible property.

### **Tax Collector**

The tax collector collects all taxes, including real and tangible personal property taxes, fees,

service charges, electric bills, water bills and all other revenues due the government. He issues all licenses except marriage and motor vehicle operator's licenses. The Tax Collector has an office, located at 31 Sailfish Drive, Atlantic Beach, to serve the beaches communities.

### **Jacksonville Transportation Authority**

The Jacksonville Transportation Authority has the authority build roads and bridges for the expressway system in Duval County and to sell bonds for these financing projects. These are supported by an 1/2 percent increase in the sales tax. It designs and operates all mass transit for Duval County, including the bus system. The JTA provides bus service in Neptune Beach seven days a week. during the week one route goes up Third Street to Atlantic Boulevard, then into the downtown area of Jacksonville, another one goes from Seagate Avenue to Penman Road to Beach Boulevard to downtown Jacksonville. The third route connects Neptune Beach to the Mayport Naval Base.

### **Public Library Board of Trustees**

This board formulates policies and guides the direction of library affairs. The trustees delegate authority to the Director of Libraries and the director's staff to manage and operate free library service. The board controls funds, gifts, legacies and property to establish and maintain library services. It is the owner and operator of the Beaches library.

### **Medical Examiner**

The medical examiner investigates cases of death by homicide, suicide and accident for all Duval County. He also investigates unexpected deaths, deaths of persons not under the care of a physician, deaths in penal institutions and deaths under unusual or suspicious circumstances. He performs autopsies when required.

### **Property Appraisal Adjustment Board**

This board hears appeals form property valuation and exemption denials by the property appraiser's office.

### **Regional Agencies**

#### **Soil and Water Conservation District Board, Duval County**

The Soil and Water Conservation District Board was organized in 1953 by land owners. It is a political sub-division of the state. Its purpose is to bring about more prosperous and lasting agriculture, and to assist with urban and rural land use problems in order that people can better use their land.

### **St. Johns River Water Management District (SJRWMD)**

The SJRWMD is one of five water management districts in the state of Florida. It is responsible for managing water and related land resources in Northeast Florida. It is made up of all or part of 19 counties. The water management districts came about as a result of the Water Resources Act of 1972 by the state legislature. The SJRWMD promotes the conservation, development, and proper utilization of surface groundwater, through regulation and research. The SJRWMD requires permits for water well construction, management, and storage of surface water (including stormwater), consumptive use, works of the district, and wells for artificial recharge. In addition, the district has authority to declare and implement water shortage warnings, water shortages, and water use restriction. The SJRWMD also has authority to acquire land for flood control, water storage, water management, and preservation of wetlands, streams, and lakes.

### **State Attorney**

The state attorney for the Fourth Judicial Circuit serves Duval, Nassau and Clay counties. While the state attorney ordinarily relies on police and other investigative agencies for investigation of alleged criminal acts, he may initiate, within his own office, the investigation of suspected illegal activity, when necessary. The decision to institute criminal proceedings is primarily his responsibility. His office screens all cases in deciding whether criminal charges should be filed, exploring the availability of non-criminal dispositions, including programs of rehabilitation.

### **Public Defender**

The public defender, a constitutional officer under Article V of the state constitution, serves the Fourth Judicial Circuit of Florida. He represents indigent persons charged with felonies, misdemeanors or violations of city ordinances prosecuted in the county courts, and indigent juveniles alleged to delinquent children. He employs assistant public defenders, investigators, a court reporter and clerical personnel to assist in representing his clients in the various division of the circuit and county courts.

### **Northeast Florida Regional Planning Council (NEFRPC)**

NEFRPC is a seven county regional planning board. It is funded by local government contributions, state grants, and fees. The NEFRPC is charged with, among other things, addressing and planning solutions for greater-than-local problems, providing technical assistance to local governments, and reviewing applications for state and federal grants. It is responsible for regional review of DRIs and addressing regional issues. The NEFRPC will review local government comprehensive plans. It is also responsible for designating regional hazardous waste transfer stations and has conducted studies of regional issues including hazardous waste.

### **State Agencies**

**Florida Department of Transportation (DOT)**

The Department of Transportation (DOT) is responsible for building and maintaining state roads and the drainage facilities for these roads. In Neptune Beach the DOT maintains a grant program for transit services (including supporting capital improvements and assistance to the "transportation disadvantaged"). These transit programs are coordinated by the Jacksonville Transportation Authority. DOT is charged with using transportation to aid growth management.

**Florida Department of Highway Safety and Motor Vehicles**

This department is responsible for vehicle registration and driver licensing. This includes registration of mobile homes. The Florida Highway Patrol, under DHSMV, is responsible for patrolling state highways.

**Florida Housing Finance Agency**

The Housing Finance Agency is an independent agency housed in DCA that uses the sale of tax exempt bonds to provide affordable housing to low and moderate income renters and first-time buyers. In home ownership, the agency provide below-market mortgages. For rental housing, developers are required to set aside a set percentage of rental units for low and moderate income families in order to use the tax exempt financing to build their multi-family projects.

**Florida Department of Community Affairs (DCA)**

The Department of Community Affairs is the state land planning agency. DCA will review local government comprehensive plans against established state criteria expressed in Rule 9J-5, F.A.C., and will provide an initial review to assure that local plans are consistent with the State Plan. DCA is also responsible for state review of DRIs assisting local governments with activities related to managing coastal and estuarine areas. It provides state assistance for the National Flood Insurance Program by promoting floodplain management and flood hazardous mitigation. DCA is also responsible for the Model Energy Code, which establishes minimum standards for thermal efficiency in buildings.

DCA administers highway safety and criminal justice grants and assesses public safety needs and develops corrective programs.

DCA operates housing assistance programs as well as programs that affect the provision of affordable housing. DCA administers the Section 8 Housing Assistance program; operates the rural housing program, which provides grants and loans to local governments, housing authorities, and nonprofit organizations to help pay the pre-development costs for housing for rural residents and farm workers; conducts research; administers the Small Cities CDBG program; provides weatherization assistance; establishes minimum building standards; and certifies manufactured housing that meets safety standards.

**Florida Department of Education**

This department funds and administers certain programs and projects (such as some school construction), coordinates other services such as guidance and psychological services, monitors education service provision according to broad curriculum and graduation guidelines, and provides assistance through the development and dissemination of education modules for use in the schools. These programs are coordinated by the Duval County School Board for the school serving Neptune Beach.

**Florida Department of State**

Through the Division of Cultural Affairs, this department oversees and administers programs affecting the arts in Florida, and through the Division of Archives, History and Records Management is responsible for locating and preserving historic and archeological sites.

**Public Service Commission**

This commission is responsible for energy utilities regulation, including monitoring utilities' mandatory energy conservation programs.

**Board of Trustees of the Internal Improvement Trust Fund**

This board (the Governor and Cabinet) holds title to all state lands and is the policy body that makes major land management decisions regarding state lands and sovereign lands.

**Florida Department of Natural Resources (DNR)**

The Department of Natural Resources is responsible for resource and recreation land acquisition, land management and resource regulation and research. DNR is the state's conservation and resource oriented agency. DNR acquires land in coastal areas (through both the CARL and SOC programs), operates state aquatic preserves, acquires and operates state parks, and provides matching funds to local governments for land acquisition and development. As agents of the Trustees of the Internal Improvement Fund, manages submerged lands. DNR is responsible for regulating construction and excavation in coastal areas to maintain the stability of the beach dune system and to protect upland properties. DNR also conducts research in resource management, as in marine fisheries management DNR is also responsible for designated marine species, and its Marine Patrol provides law enforcement services regarding designated species. It also regulates the reclamation of mined lands.

**Florida Department of Environmental Regulation (DER)**

The department is responsible for surface and groundwater quality. DER regulates various activities that can affect water quality, and requires permits for actions such as dredge and fill, the construction or upgrading of wastewater treatment plants, discharge of industrial waste, and landfills. It is also responsible for administering statutes and rules related to the Florida Coastal Management Program concerning water quality. Thus, DER regulates discharge of domestic and industrial waste into state water bodies, and its Stormwater Rule attempts to eliminate the effects of non-point pollution on state water bodies. It is also responsible for enforcing the air quality standards established by the state and regulating disposal sites such as landfills. It also is the agency charged with the state's hazardous waste cleanup programs.

#### **Florida Game & Fresh Water Fish Commission (GFWFC)**

This commission has an interest in conservation, particularly as it relates to wildlife management, and in regulating activities related to hunting and fishing. GFWFC administers the Florida Endangered and Threatened Species Act and coordinates with the U.S. Fish and Wildlife Service, which operates similar national programs.

#### **Federal Agencies**

##### **U.S. Department of Transportation**

The Department of Transportation supervises and coordinates agencies (such as the Federal Aviation Administration, Federal Highway Administration, and the National Highway Safety Administration) concerned with national transportation needs. U.S. DOT provides financing for developing highways and interstates and through the Urban Mass Transportation Administration, provides funds for development of mass transit. These funds are coordinated and disbursed through the JTA.

##### **U.S. Department of Housing and Urban Development (HUD)**

This federal agency provides funding and regulates state administered programs such as Section 8 Housing Assistance (rent subsidies for qualified low and moderate income families) and Small Cities Community Development Block Grants (which can be used for housing rehabilitation, among other things).

##### **U.S. Department of Education**

The Department of Education regulates and provides pass-through funding to the state for specified programs.

##### **U.S. Army Corps of Engineers**

The Army Corps of Engineers is responsible for maintaining navigable waterways and flood control process and, when feasible, is authorized to dispose of beach compatible sand in area slated for beach re-nourishment. The Corps has developed rules regarding permitting wetlands, and requires dredge and fill permits.

### **U.S. Environmental Protection Agency (EPA)**

The EPA coordinates government action to protect the environment by controlling pollution. U.S. Environmental Protection Agency (EPA) is also responsible for air quality and has designated six pollutants that, in high concentrations, can have adverse human and environmental impacts.

### **Analysis**

The City of Neptune Beach is in a unique situation as a municipality with the consolidation of the City of Jacksonville. The City of Jacksonville can provide county and municipal services to the residents of Neptune Beach. The City of Jacksonville is viewed as a city encompassing all of Duval County by some governmental agencies. Governmental committees that would normally include representatives of municipalities within a county do not include representatives for each of the municipalities in the Consolidated City of Jacksonville. The intergovernmental coordination between Neptune Beach and the City of Jacksonville is primarily based on the informal relationships between the elected officials in Neptune Beach and the elected officials for the city of Jacksonville whose district includes the beaches, primarily the Mayor and District Councilman.

The inter-local agreement signed between the City of Neptune Beach and the City of Jacksonville sets forth specific services offered Neptune Beach. They continue to be implemented through the consolidated government and appear to be adequate.

The following is an analysis by element of the existing intergovernmental mechanism or proposed needed measures.

### **Land Use**

**Existing Condition** The City does not have any formal committee to review land uses along its city limits. Development on both sides of Atlantic Boulevard, between the city limits of Atlantic Beach and Neptune Beach, is proposed to continue as commercial development. This type of development should not pose a problem to either city. The southern boundary of Neptune Beach is Seagate Avenue and abuts Jacksonville Beach. The majority of the land on both sides of Seagate Avenue is developed for residential purposes with the exception of some institutional uses (Fletcher Junior and Senior High Schools) along Seagate Avenue.

The eastern and western boundaries of Neptune Beach are natural resources, the Atlantic Ocean

and Intracoastal Waterway. Use and development of these boundaries are governed by the State of Florida Department of Environmental Regulation, the Department of Natural Resources, and the U.S. Army Corps of Engineers. The local governments abide by the state and federal regulations for development of these natural resources. No local coordinating committee is established to review development of these wetlands.

**Future Actions** No additional intergovernmental coordination mechanism is recommended for implementation of this element.

## **Traffic Circulation**

**Existing Condition** The City of Jacksonville Public Works Department is responsible for the operation and maintenance of the county roads in Neptune Beach, which include Penman Road and Florida Boulevard between Atlantic Boulevard and Penman Road. This is outlined in an interlocal agreement between the City of Jacksonville and its municipalities, the beach communities, and Baldwin. The Florida Department of Transportation is responsible for the maintenance on state roads, which include Atlantic Boulevard (State Road 10) and Third Street (State Road A1A). The City of Neptune Beach maintains the remaining streets in the City.

The Jacksonville Metropolitan Planning Organization (MPO) is responsible for planning and recommending improvements to state and county roads. Its members are appointed by the Governor. Neptune Beach does not have a representative on the MPO.

**Future Action** The composition of the Jacksonville MPO is determined by the Governor. Currently, the Mayor of Jacksonville, three Jacksonville City Councilmen, a County Commissioner from both St. Johns and Clay Counties and a member from the Jacksonville Transportation Authority are members of the MPO. No elected official of any of the municipalities are included on the MPO. To improve intergovernmental coordination, it is recommended that the membership of the MPO be increased to include elected officials from the municipalities within the Jacksonville MPO area. This would include adding a member from the Neptune Beach City Council. In addition, the MPO appoints a Technical Coordinating Committee (TCC) as its staff. The TCC members include Public Works and Planning Department staff from the various communities in the Jacksonville MPO area. Other municipalities within the MPO area have representatives on the TCC. Neptune Beach does not have a representative on the TCC. Neptune Beach should request the MPO that a member be appointed to the TCC from Neptune Beach.

## **Traffic -- Pengate Forest**

**Existing Condition** Pengate Forest is a development in Jacksonville Beach with access from Seagate Avenue. The street is entirely within the city limits of Neptune Beach. This portion of Seagate Avenue is not paved. The residents of Neptune Beach that live on the north side of Seagate in the Shadow Lane area desire to keep the road unpaved. The development of Pengate Forest would increase the traffic on Seagate Avenue and would probably require paving of the street. The City of Jacksonville Beach has approved the preliminary plat for Pengate Forest. Jacksonville Beach can not require the developers to participate in the paving of Seagate Avenue without Neptune Beach's approval. Discussions were conducted on this project and no decision was made.

**Future Action** An interlocal agreement needs to be developed between Neptune Beach and Jacksonville Beach on the paving and maintenance of Seagate Avenue. Jacksonville Beach could assess the developers or residents of Pengate Forest for the maintenance or paving of Seagate Avenue and transfer the assessment to Neptune Beach.

### **Recreation and Open Space**

**Existing Condition** The City of Neptune Beach maintains all the public parks within the city limits. All operation, maintenance, and construction funds come from ad valorem taxes. The Duval County School Board maintains the play areas on property it owns. A recently adopted agreement between Neptune Beach and the City of Jacksonville stipulates that Jacksonville would pay for the improvements at Jarboe Park and Neptune Beach would maintain the new facilities after completion.

**Future Action** Efforts toward the joint development of public recreation facilities should be encouraged. Negotiations between the district City Councilman and Neptune Beach should continue. It is not anticipated that a formal committee needs to be established to promote these joint efforts.

### **Utilities**

**Existing Condition** The sewer systems for Neptune Beach, Atlantic Beach, and Jacksonville Beach were placed on a moratorium by the State of Florida Department of Environmental Regulation due to the location of the outflow for the effluent. The beach communities were pumping the effluent into the Intracoastal Waterway. Through an interlocal agreement, the three communities decided to participate in the construction of lines to change the location of the effluent discharge point to the mouth of the St. Johns River.

**Future Action** The beach communities should continue to prepare interlocal agreements for the

construction of joint sanitary sewer lines and systems.

## **Solid Waste**

**Existing Condition** The City of Jacksonville is required an interlocal agreement, dated June 1, 1982, to plan and provide for solid waste disposal sites for Neptune Beach. Neptune Beach is currently using the Girvin Road landfill for solid waste disposal. The City of Jacksonville is currently in the process of permitting a new 880-acre landfill in the southeast corner of Duval County.

This site is considerably farther away from Neptune Beach than the Girvin Road landfill. Neptune Beach has been working with Atlantic Beach to establish a transfer station.

**Future Action** Neptune Beach should work with Atlantic Beach to develop an interlocal agreement for the participation in the development of a transfer station. They should also assist the City of Jacksonville in their efforts to create a new landfill to serve all municipalities within Duval County.

## **Housing**

**Existing Condition** Neptune Beach does not have a redevelopment or housing authority or a rehabilitation loan program. In 1988, the City of Jacksonville, jointly with the cities of Baldwin, Neptune Beach, Atlantic Beach, and Jacksonville Beach applied to the U.S. Department of Housing and Urban Development to change the City of Jacksonville's designation from an entitlement city to an entitlement urban county. This status was granted and now Neptune Beach will be able to receive Community Development Block Grant (CDBG) funds from the City of Jacksonville. The City of Jacksonville's Department of Housing and Urban Development has a Rehabilitation Loan Program, which will become available to residents of Neptune Beach.

**Future Action** With the designation of Jacksonville as an urban county, residents of Neptune Beach will be able to receive rehabilitation loan program funds. The City of Neptune Beach needs to promote this program for its residents. The Neptune Beach Council needs to work with the City of Jacksonville to assure that a portion of the City of Jacksonville's annual CDBG funds are allocated to Neptune Beach.

## **Introduction**

According to 9J-5.016 F.A.C, the purpose of the Capital Improvements Element is to:

- 1) evaluate the need for public facilities as identified in other elements of the Comprehensive Plan;
- 2) estimate the costs of improvements for which the local government has fiscal responsibility;
- 3) analyze the fiscal capability of the City of Neptune Beach to finance and construct improvements;
- 4) adopt financial policies to guide the funding of improvements; and
- 5) schedule the funding and construction of necessary improvements.

The Capital Improvements Element differs from the city's capital improvements program in that its scope is limited to only those capital improvements derived from other elements of the comprehensive plan. The Capital Improvements Element is used to demonstrate the economic feasibility of the entire Comprehensive Plan. It focuses on the capital outlay required to meet existing deficiencies and to maintain the adopted level of service (LOS) standards planned for public facilities in the plan.

The content of this element includes:

- 1) an inventory of capital improvement needs, financial resources, city policies and practices;
- 2) a fiscal assessment of revenues and expenditures;
- 3) goals, objectives and policies;
- 4) a 5-year schedule of projects to be implemented; and
- 5) a description of monitoring and evaluation strategies.

## **Inventory**

### **Needs Derived From Other Elements**

The output from the analyses undertaken for the several elements of the Comprehensive Plan identified infrastructure improvements required to correct existing deficiencies (ED) and future requirements based on forecasts of growth in the city. The elements which are to be addressed in this Capital Improvement Element include the following facilities:

- 1) traffic;
- 2) sanitary sewer;
- 3) potable water;
- 4) drainage;
- 5) solid waste; and
- 6) recreation.

The inventory addresses only those improvements which:

- 1) require an investment of \$25,000 or more for the construction, acquisition or installation of facilities or the acquisition of land;
- 2) are of relatively large scale;
- 3) may require multi-year financing; and
- 4) have non-reoccurring high costs.

Table H-1 lists the capital improvements identified in the plan, while Table H-2 lists the Levels of Service.

Table H-1.  
Capital Improvements Identified in Plan Elements

---

| Project                   | Cost |
|---------------------------|------|
| Traffic Facilities        | None |
| Sanitary Sewer Facilities | None |
| Solid Waste Facilities    | None |
| Drainage Facilities       | None |
| Potable Water Facilities  | None |
| Recreation                | None |

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Table H-2  
Level of Service Standards, Neptune Beach

| Facility/Service Area     | Level of Service Standards  |
|---------------------------|---|
| Traffic                   | LOS C for 24-hour traffic<br>LOS D for peak-hour traffic  |
| Sanitary Sewer Facilities | 125 gallons per capita per day  |
| Solid Waste Facilities    | Average Solid Waste Generation Rate; 7.1 pounds per capita per day                              |
| Drainage Facilities:      |   |
| Major Developments        | 25-year frequency, 24-hour duration; Rainfall Intensity curve-zone 8, DOT Drainage Manual, 1986 |
| Minor Developments        | 5-year frequency, 24-hour duration, Rainfall Intensity curve-zone 8, DOT Drainage Manual, 1986  |
| Potable Water Facilities  | Average Water Consumption Rate;<br>70 gallons per capita per day                                |
| Recreation                | Maintain existing facilities  |

**Traffic**

Major thoroughfares are not the responsibility of the City of Neptune Beach. They fall under the jurisdiction of the Metropolitan Planning Organization or the state. A paving program in the northwest section of the city is the only major traffic improvement recommended.

**Sewer and Water**

The extreme northwest corner of the city between Florida Boulevard, Oakhurst Drive, the city limits and Atlantic Boulevard, is not served with public sewer and each developed lot has a septic tank. Pipes of inadequate size distribute water to the area, drainage is inadequate and some of the streets are unpaved.

The only other area in the city not served by public sewer is the Seagate Forest subdivision. Water service here is adequate. Streets in this subdivision are unpaved, but the residents do not want them paved because they feel that traffic will be increased through their neighborhood.

The city has recently floated a \$4,075,000 Water and Sewer Revenue Bond Issue. These funds are earmarked for improvements to the overall service and to increase the capacity of the sewage treatment plant to serve the existing and future population and lift the moratorium on sewer system hook-ups.

With these improvements, Neptune Beach will be able to provide adequate public services for the present and future population.

The following table shows a projection of the City of Neptune Beach's sewer treatment capacity needs.

Table H-3.  
Sewer Capacity Needs, Neptune Beach

| <u>Estimated Sewage Flows/Demand</u>                                   | <u>Gallons<br/>Per Day</u> |
|--|----------------------------|
| Totals for existing domestic base sewage flows                         | 641,218                    |
| Totals for existing commercial base sewage flows                       | 107,874                    |
| Totals for existing base sewage flows                                  | 749,092                    |
| Totals for potential base sewage flows<br>(additional users 1986-2010) | 87,050                     |
| Total projected need flow within 20-year<br>planning period            | 1,127,188                  |
| Estimated unremovable infiltration                                     | 250,000                    |
| Maximum average daily sewage flows for 20-year<br>planning period      | 1,377,188                  |

Source: Smith and Gillespie Engineers, Inc.

The City of Neptune Beach has an adequate supply of water through the planning period. The existing wells are able to provide the city with adequate water for existing and future populations. The renovations to the system will assist in maintaining adequate pressure and supply to the system. The use of the water tank will allow the users of the system to maintain an adequate supply of water during peak demand periods.

The two-inch water lines in the area west of Florida Avenue are undersized and do not meet

current city standards. The mineral deposits have developed in the lines since they were first constructed in the 1940s and has further decreased the usefulness of the lines. These lines should be replaced to meet current city standards of 6-inch lines. Table H-4 shows the estimated potable water demand through 2010 based on a consumption rate of 70 gallons per capita.

Table H-4.  
Potable Water Demand Estimates and Projections,  
Neptune Beach: 1985 through 2010

| Year | Population<br>Estimates | Gallons<br>Per Day |
|------|-------------------------|--------------------|
| 1985 | 5,909                   | 413,630            |
| 1995 | 6,458                   | 452,060            |
| 2000 | 6,856                   | 479,920            |
| 2005 | 7,122                   | 498,540            |
| 2010 | 7,384                   | 516,880            |

Source: Fleet & Associates, 1987.

The City needs to continue its maintenance program of the water supply system. In addition, the City should begin a systematic program to replace the older two-inch lines. By phasing the replacement program over a number of years, the capital outlay per year could be limited. This would avoid a situation in the future where it might be required to replace all the two-inch lines over a short period of time.

### **Drainage**

The City's consulting engineer, Smith & Gillespie, completed the Master Drainage Study for the city in 1980. The study recommended a series of improvements to the drainage system. Based on the priorities established by the engineers, the City began a drainage improvement program. The final recommended improvements were funded in 1986.

A substantial portion of the storm drainage system within the City of Neptune Beach has been constructed with the Florida Department of Transportation (DOT) in connection with major paving projects, principally, State Road A1A (Third Street) and Atlantic Boulevard.

The construction of a storm sewer system with sufficient capacity to accommodate the most severe rainfall expected cannot generally be economically justified, as the cost of such a system would be prohibitive. Minor flooding of the streets and low lying lands can be tolerated, at least to the extent that such flooding does not involve extensive damage to property or hazards to health and safety.

### **Solid Waste**

The main problem in solid waste management is disposal. Neptune Beach depends on the City of Jacksonville for disposal sites. When the Girvin Road Landfill closes each truck will have a farther distance to travel to dispose the solid waste collected. Currently, the City has a total of four garbage trucks.

An alternative to having every garbage truck travel 30 miles to the new southeast landfill, is to construct a transfer site near Neptune Beach. Each truck could deliver garbage to the transfer site and return quickly to pickups. This would reduce the down time of each truck, save the need of adding another garbage truck and hiring the staff necessary to operate the truck.

Table H-5 shows the estimated solid waste generated in Neptune Beach through 2010, based on a production rate of 7.1 pounds per capita per day.

Table H-5.  
Solid Waste Estimates and Projections, Neptune Beach:  
1985 through 2010

| Year | Estimated<br>Population | Pounds<br>Per Day |
|------|-------------------------|-------------------|
| 1985 | 5,909                   | 40,954            |
| 1995 | 6,458                   | 45,852            |
| 2000 | 6,856                   | 48,678            |
| 2005 | 7,122                   | 50,566            |
| 2010 | 7,384                   | 52,426            |

Source: Prosser, Hallock & Kristoff, Inc.

The City of Jacksonville has included the solid waste disposal needs of Neptune Beach in Duval County's landfill needs.

Neptune Beach needs to work with the City of Jacksonville and support Jacksonville's efforts to construct a new landfill. The city should also investigate working with Jacksonville Beach and Atlantic Beach to provide a transfer site near the beach communities. The transfer site could be funded by all three or funded by one community and used by the other communities. In the second approach, user fees could be assessed.

## Inventory of Existing Revenue Sources and Funding Mechanisms

The following list of revenue sources comprises a working inventory, from which the City's capability to appropriate the needed revenue for capital improvements is assessed. The status of each financial resource currently utilized is indicated below. Importantly, the following list includes all major financial resources available to the City and is not limited to those sources which will be used for capital improvement projects included in this element's 5-Year Schedule of Improvements. These currently utilized financial resources comprise, in part, the sources of funds (revenue sources) from which the capital improvement projects will be funded.

### **Local Revenue Sources**

Property Taxes (Ad Valorem). Property taxes are based on a millage rate (one mill is the equivalent of \$1 per \$1000 of assessed value or .1%), which is applied to the total taxable value of all real property and other tangible personal property. Revenue from ad valorem taxes may be used to fund both operating costs and capital projects. State constitutional provisions exist for raising the millage rate above the 10-mill cap for counties by local referendum for debt service or provision of municipal-type services.

Current Status: As the major source of revenue for Neptune Beach, the ad valorem tax traditionally accounts for approximately 20 percent of the city's annual revenue. The current millage rate is set at 3.8013.

On a per capita basis, an average of about \$85 per person was returned to the city in property taxes over the 4-year period between 1983 and 1987. During that period, non-exempt assessments of property increased from \$88.6 million to \$142.1 million dollars or 60 percent, while the millage rate decreased by almost 18 percent. Ad valorem tax revenues per capita increased during this same period by only 13 percent.

Sales and Use Taxes, Franchise Taxes and Utility Taxes. These are the only other tax revenues currently available to the City and comprise the revenues listed as "other tax revenue" in Table H-1- through 14. This category also includes the hotel or tourist development tax.

Current Status: These taxes accounted for 16 percent of the total revenues collected or about \$466,000 in 1987. Of these, 3 tax sources, Franchise Taxes generate about 73 percent of other tax revenues. Unlike ad valorem taxes, income generated under this heading is most erratic as may be seen in Table H-10. The fluctuation has been due to revenues generated by utility taxes.

Other Tax Revenues. This category includes special assessments, various administrative fees, and other user charges for services and facilities operated by Neptune Beach. Examples are sales of public documents, property appraisal fees, fines and forfeitures, licenses and permits, income received as interest from various funds, sale of City property, rental income, and all private contributions (real estate, gifts, donations, etc.) given to the City.

Current Status: In 1987, approximately \$1,791,319 of all revenues were generated from these

sources. This amounted to almost 61 percent of the revenue total.

The bulk of the revenues produced in this category were from charges for services (water, sewer, and solid waste collection). They accounted for almost 31 percent of all revenues in 1987 and about 50 percent of revenues in this subcategory. Since 1983, charges for services have increased by 130 percent.

Intergovernmental revenues account for about 19 percent of all revenues, 18 percent on the average since 1983. It is the third most productive category after ad valorem taxes and charges for services among revenue producing categories. Income generated from this source averaged about \$78 per capita since 1983. It included shared revenues from state gasoline taxes, cigarette taxes and sales taxes.

Special Sources of Revenue. Depending upon priorities assigned by the City Council and the availability of other revenue sources, it may be necessary to seek additional funding mechanisms. The following sources of revenue represent options available to Neptune Beach to finance required capital improvements.

- 1) Impact Fees. These fees are charged in advance of new development and are designed to pay for infrastructure needs, but not operating costs, which directly result from new development. These fees must be equitably allocated to the specific group(s) which will directly benefit from the capital improvement, and the assessment levied must fairly reflect the true costs of these improvements.

Current Status: The city has not adopted any impact fee ordinances.

- 2) Special Assessments. Like impact fees, special assessments are levied against residents, agencies, or districts who directly benefit from the new service or facility. For example, a new sewer system for an existing neighborhood can be financed through a special assessment of that neighborhood's homeowners, rather than through the city's general fund. To require all city residents to pay for the new sewer system through ad valorem taxes or other city-wide sources, when only one neighborhood will benefit, would be less than equitable.

Current Status: Neptune Beach has imposed special assessments in the past for water and sewage facilities, roadway improvements, and drainage systems. Revenues from this source would be included in the above section.

- 3) Borrowing. The extremely high cost of many capital improvements require local governments to occasionally resort to borrowing, either through short-term or long-term financing. Short-term financing, perhaps through local banks, is one option available to raise required revenue for periods of, perhaps, one to five years. The more customary method, however, is to authorize long-term bond issues, normally for five to forty years. The following are examples of types of bond issues which the city may use.

- a) General Obligation Bonds. These bonds are backed by the full faith and credit of the local government, and are required to be approved by voter referendum. General obligation bonds offer lower interest rates than other bonds, as they are, in effect, secured by the taxing power of the government. Revenues collected from the ad valorem taxes on real estate and other sources of general revenue are used to service the government's debt. Capital improvements financed through general obligation bonds should benefit the city as a whole rather than particular areas of groups.

Current Status: There are no General Obligation Bonds outstanding.

- b) Revenue Bonds. Unlike general obligation bonds, revenue bonds are financed by those directly benefiting from capital improvement. Revenue obtained from the issuance of these bonds is used to finance publicly-owned facilities such as water and sewer facilities. Charges collected from the users of these facilities are used, in turn, to retire the bond obligations. In this respect, the capital project is self-supporting. Interest rates tend to be higher than for general obligation bonds, and issuance of the bonds may be approved by the City Council without voter referendum.

Current Status: Neptune Beach issued revenue bonds in 1963 to finance improvements to its sanitary sewer and potable water facilities in the amount of \$250,000, due in the year 1993. These bonds were retired with part of the proceeds from the 1988 revenue bond issues. This new bond issue is scheduled to be retired in three stages. The first is due on October 1, 1996. Two other redemption periods through the years 2008 and 2018 for the aggregate principal amounts of \$800,000 and \$2,455,000 respectively are also scheduled.

- c) Industrial Revenue Bonds. This type of bond is issued by a local government, but is actually assumed by companies or industries who use the revenue for construction of plants or facilities. The attractiveness of these bonds to industry is that they carry comparatively low interest rates due to their tax-exempt status. The advantage to the local government is that the private sector is responsible for retirement of the debt and that new employment opportunities are created in the community.

Current Status: No industrial revenue bonds have been issued in the city.

### **State Revenue Sources**

Neptune Beach, as do other municipalities and counties in Florida, depend on annual

disbursements from the state government to supplement its operating and capital budget revenues. The sources of revenue listed in the above section (Other Revenues) represented funds which Neptune Beach may levy, collect, and disburse at the local level. This section addresses those funds which are: a) generated locally, but collected and later returned by state agencies to the city; b) adopted as a local option tax or license fee, collected and returned by the state; or c) shared by the state in the form of grants to the local government, but originate from state general revenues. Amounts available from these sources may vary widely from year to year, depending upon legislative actions. Some were noted previously. They are grouped under Intergovernmental Revenues.

- a. Revenue Sharing Trust Fund. There are three components to this fund, which is disbursed to the city - the Cigarette Tax and the 8th Cent Gasoline Tax.

Current Status: During FY 86/87 about \$75,000 was returned to the city from these sources.

- b. Miscellaneous. This category includes the Beverage License Tax and Insurance Licenses.

Current Status: The most recent returns of revenues in this category were between \$5,000 and \$6,000 from the Beverage Tax.

- c. Local Option Taxes. The Local Option Gas Tax and Bed Tax are the main categories under this heading.

Current Status: The Gas Tax generates about \$215,000 and the Bed Tax about \$10,000-\$15,000 a year.

- d. Casualty and Fire Insurance Premium Taxes.

Current Status: Revenues from these two sources are earmarked for Pension Trusts.

## **Federal and State Grants and Loans**

The U.S. State and Local Fiscal Assistance Act of 1972, which formerly provided for a system of federal general revenue sharing, has now been substantially modified. Federal funds are currently either: a) allocated to state agencies which administer block grants in accordance with the programs which they monitor; or b) reserved at the federal agency level and are disbursed as block grants directly to state and local agencies or other eligible organization and individuals. The purpose of the block grant program is to enable greater latitude by recipients in actual use of the funds, although recipients are still required to use the funds for specific categories of projects. These funds are not distributed by allocation, but rather, require competitive applications. Consequently, these grant monies are generally a non-recurring source of funds, and as such cannot be accurately projected for budgeting purposes.

A partial list of available federal grant sources is included in Table H-6. Other grants are administered at the state level, with state executive departments acting as "pass-through agencies" for federally-funded project grants. An example of a federally funded project grant program is the Community Development Block Grant (CDBG). The U.S. Department of Housing and Urban Development, which administers the program, allocates 70 percent of its CDBG funds for "entitlement communities," or the larger urban areas. These entitlement communities may apply for an receive grants for financing specific projects from a list of eligible activities outlined in Title I statutes, such as infrastructure improvements, housing projects, and commercial revitalization. The remaining 30 percent of the funds are disbursed to state pass-through agencies - in Florida's case, the Department of Community Affairs (DCA). DCA administers these grants for the same types of projects, but restricts their availability to "small cities" and counties.

In addition to block grants, several federal agencies offer direct loan programs, but their applicability to capital improvement projects is extremely limited. State loans, on the other hand, are usually available to finance such capital projects as land acquisition for low-income housing. The Department of Community Affairs' Bureau of Housing administers loans and grants for these purposes through eligible local governments.

Current Status: There are no current grants or loans outstanding.

Table H-6.  
Federal Grants: Sample List of Administering Federal  
Agencies and Program Titles

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Department of Commerce

Public Works and Development Facilities  
Support for Planning Organizations  
Public Works Impact Projects  
Public Telecommunications Facilities Construction and Planning

Department of Health and Human Services

Community Health Centers

Department of Housing and Urban Development

Housing Development Grants  
Community Development Block Grant/Entitlement  
Community Development Block Grant/Small Cities Program  
Urban Development Action Grant

Department of Interior

Outdoor Recreation - Acquisition, Development, and Planning  
Urban Park and Recreation Recovery Program

Department of Transportation

Urban Mass Transportation Capital Improvement Grants  
Urban Mass Transportation Technical Studies Grants

Environmental Protection Agency

Construction Grants for Wastewater Treatment Works  
Comprehensive Estuarine Management

Source: "Catalog of Federal Domestic Assistance", 1986, Government Printing Office, Washington, D.C.

## Capital Improvements Analysis

### Local Policies and Practices

Local policies and practices may be used to guide the location and timing of land development, in support of the goals, objectives, and policies of the Future Land Use Element. Many of these policies and practices may be influenced by state agencies and water management districts that provide public facilities within the city's jurisdiction. For example, the Florida Department of Transportation (FDOT) 5-Year Transportation Plan was determined to have such impact.

Several arterial roadways within the city's jurisdiction are on the state highway system and are therefore, largely the financial responsibility of FDOT. Plans for improvement of some of these roadways are included within the 5-Year Transportation Plan.

This section describes many of the local policies and practices which are employed or may be employed in the future by the city. They are described in terms of their general concept and the circumstances which may warrant their use. Those policies and practices that have been used or are currently in use in the city have been identified in the following six sections.

1. Level of Service Standards. Level of services (LOS) standards are an indicator of the extent or degree of service provided by, or proposed to be provided by a facility based on and related to the operational characteristics of the facility. LOS indicates the capacity per unit of demand of each public facility. They are, in short, a summary of existing or desired public facility conditions.

Chapter 163, F.S., and Chapter 9J-5, F.A.C., now require LOS standards to be included for public facilities addressed by local governments in their comprehensive plans. Specifically, these LOS will be established for the purpose of issuing development orders or permits to ensure that adequate facility capacity will be maintained and provided for future development.

Current Status: The city has not formally adopted LOS standards for public facilities prior to the completion of this comprehensive plan. However, within the other elements of this comprehensive plan, LOS standards have been proposed and were noted previously.

2. Capital Improvement Program. A capital improvement program (not to be confused with this Capital Improvements Element of the comprehensive plan) is a plan for capital expenditures to be incurred each year over a fixed period of years to meet anticipated capital needs. It sets forth each capital project or other contemplated expenditures which the city plans to undertake and, further, presents estimates of the full resources needed to finance the project.

The Capital Improvement Program will be consistent with the Capital Improvements Element of the local comprehensive plan, as it will reflect the goals, objectives, and policies of the element and its implementation strategies, including the 5-Year Schedule of Improvements. It is, however, more inclusive than the Capital Improvements Element, as it contains those projects of relatively small scale and low cost (less than \$25,000) which are generally recurring and do not require multi-year financing. Also the Capital Improvement Program is not limited to those public facilities addressed in the comprehensive plan, as the Capital Improvements Element is constrained.

The time periods covered by a Capital Improvement Program range up to ten years, but most are typically six-year programs. In many cases, the first year of the Capital Improvement Program is converted into the annual capital budget with longer range expenditures depicted in the five-year program. The capital budget encompasses enacting appropriations for projects in the first year of the Capital Improvement Program. Like the Capital Improvement Element, the Capital Improvement Program is reviewed on an annual basis.

Current Status: Neptune Beach does not currently prepare a six-year Capital Improvement Program, but does prepare an annual capital budget.

3. Impact Fees. Impact fees are imposed by many local governments on new development to offset the costs of new capital facilities necessitated by that development. This financing technique may be used by local governments as one strategy for implementing the Capital Improvements Element. Chapter 163, F.S., includes impact fees as an innovative technique that may be integrated into the land development regulations.

Impact fee development is one logical outgrowth of Capital Improvements Element preparation. The assessment required for the local government's capital improvement needs and its capability in providing for those needs, as required by Chapter 9J-5, F.A.C., may be a rational basis for developing an impact fee ordinance.

Impact fees may be used to affect the location and timing of infill development. Infill development usually occurs in areas with excess capacity of capital facilities. If the municipality chooses not to recoup the costs of capital facilities in underutilized service areas, infill development may be encouraged by the absence of impact fees on developments proposed within such service areas.

Current Status: At present time the city has no adopted impact fee ordinances.

4. User Charges and Connection Fees. User charges are designed to recoup the costs of public facilities or services by charging those who benefit from them. They are employed in many areas of local government service. For example, toll and transit fares defray the costs of constructing and maintaining these facilities and are a common source of funds for paying off revenue bonds. The technique may also be applied to potable water usage,

sanitary sewer fees, solid waste services, recreation, and parking.

As a tool for affecting the pace and pattern of development, user charges may be designed to vary for the quantity and location of the service provided. Thus, charges could be greater for providing services further distances from urban areas.

Current Status: User charges and connection fees are utilized for sanitary sewer, solid waste, and potable water.

5. Mandatory Dedications or Fees In Lieu Of. The city may require, as a condition to plat approval, that subdivision developers dedicate a certain portion of the land in the development to be used for public purposes such as roads, parks and schools. Dedication may be made to the governing body or to a private group such as a homeowners association.

When a subdivision is too small or topographical conditions such that a land dedication cannot reasonably be required, the city may require the subdivider to pay a fee in lieu of dedication which is equivalent to the amount of land that would otherwise have been dedicated by the developer. The fee may be deposited into a separate account for future use toward provision of such facility.

As a result of the public facility provision, the adjacent area benefitting from the initiative would likely become more attractive to development. The acquired service potential may be used to encourage growth in desired areas.

Current Status: Mandatory dedications or fees in lieu of are required by the city for streets.

6. Moratoria. A moratorium, or a stop-gap ordinance, may temporarily halt or freeze development for a specified period of time on an emergency basis. It may be imposed on building permits, development approvals, or governmental services such as potable water connection, sanitary sewer extensions or hook-ups. Moratoria may generally be imposed for a "reasonable time" to allow for necessary planning activities pending comprehensive plan preparation, adoption, or amendment. Florida courts have found development moratoria to be a valid measure of last resort for the protection of local public health, safety, and welfare when adopted in accordance with applicable procedures. Additional considerations in adopting a moratorium include:

- (1) Determining the legal status of existing permit applications and approvals to determine the extent of "vested rights" for developments approved prior to ordinance adoption;

- (2) Specifying the geographic extent of the moratorium (whether it will be jurisdiction-wide, or limited to specific hazard areas or areas with existing

service insufficiencies); and

- (3) Specifying the time frame and conditions under which the moratorium will be imposed.

Current Status: The city does not impose moratoria on sewer hookups.

### **Impact of New/Improved Public Educational and Health Care Systems**

No new public educational or public health care facilities are anticipated before 1995. It was also determined that the educational systems and facilities in the City are and will be adequately served by roadways, potable water, sanitary sewer, solid waste, storm drainage, and recreational facilities.

### **Fiscal Assessment**

The following sections examine the ability of the city to fund the capital improvements listed in Table H-1. The purpose of this section is to determine whether sufficient revenue will be available within the existing budgeting framework utilized by the city to fund the needed improvements at the time they will be required.

### **Estimated Costs for Capital Improvements**

No capital improvements have been identified in the plan elements.

### **Revenue Bond Analysis**

Table H-7 shows the debt service schedule for the water and sewer revenue bonds. Table H-8 and H-9, which were excerpted from the "Official Statement" supporting the bond issue, indicate the viability of the issue itself. While ad valorem taxes are specifically excluded as a source of repayment, Sales Tax Revenues have been pledged to meet the debt service along with the revenues generated by the Enterprise Revenues.

With the possible exception of 1989, however, the projections of revenues and impact fees are expected to cover the debt service. From 1990 through 1992, pledged revenue debt service coverage ranges from 5.89 to 2.63 more than the amount required to service the debt (Table H-10). This means that while the sales tax revenues were pledged as a contingency source of funds, they will most likely remain available for other uses.

table 7

table 8

table 9

### **Revenue and Expenditure Analysis**

Table H-10 is a summary of revenues and expenditures for the period 1983 through 1987. Table H-11 offers an analysis of revenues and expenditures on a per capita basis, while Table H-12 shows the percent distribution of revenues and expenditures.

As indicated in Table H-10, revenues exceeded expenditures in each of the five years considered. On the average, revenues exceeded expenditures by about 27 percent. In the Fiscal Years ending 1983 and 1985 revenues exceeded expenditures by 41 percent and 7 percent respectively, representing the high and the low end of the range. The ratio of revenues to expenditures in those years was 1.40 and 1.07 respectively. Over this period of time, actual revenues amounted to \$12,058,593 million, whereas expenditures amounted to \$9,620,420 million, a difference of \$2.4 million or about 25 percent more in revenues than expenditures (Table H-10).

The revenue to debt ratio between 1984 and 1988 ranged from 2.85 to 1 to 19.42 to 1 during this period (Table H-8). The revenue to debt ratio between 1990 and 1995 range from 1.73 to 1 to 2.00 to 1 during this period (Tables H-3; H-13 and H-14). These ratios are based on service charges only. However, when pledged impact fees and sales taxes are considered as shown in Table H-9 the revenue to debt ratio virtually doubles in each of the years shown.

### **Projected Expenditures**

The second part of the analysis to determine the ability of the City to finance the required capital improvements is to project what the expenditures will be over the next five-year period. Table H-15 presents the projected expenditures from 1990-91 through 1994-95. By comparing the projected expenditures with projected revenues, it indicates that revenues will exceed expenditures.

### **Revenue Projections**

Projecting revenues over any period of time is primarily dependent on a good estimate of what the ad valorem tax will generate, since it has historically accounted for about 21 percent of all revenues collected by the City. The projected data was not readily available. Consequently, all of the sources of funds or categories were estimated on the basis the average per capita for each category.

Table H-14 shows the estimated average millage for a 5-year period. The table also indicates the estimated assessed valuation of all taxable property in the city through the Fiscal year 1995-1996. As shown, the average city-wide millage rate is estimated at 4.737. As indicated, the projections indicate that revenues will exceed expenditures during this period.

### **Operating Costs**

Operating expenditures are recurring expenses associated with routine operation of the capital facilities. Typical expenses would include: supplies, utilities, maintenance, and personnel. The following table shows the projected operating costs from 1990-91 through 1994-95.

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Projected Operating Costs: 1990-91 through 1994-95

Projected  
Operating  
Costs

---

|         |             |
|---------|-------------|
| 1990-91 | \$2,041,537 |
| 1991-92 | 2,182,455   |
| 1992-93 | 2,333,100   |
| 1993-94 | 2,494,144   |
| 1994-95 | 2,666,304   |

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Source: Neptune Beach Finance Department

**Debt Capacity**

Based on the level of current debt, Neptune Beach does not have significant bonding capacity remaining.

table 10

table 11

table 12

table 13

table 14

## **Concurrency, Monitoring, Evaluation and Implementation**

### **Level of Service Standards**

The minimum criteria for Comprehensive Plans requires that Level of Service Standards be included for public facilities described in the plan. The Level of Service Standards (LOS) for Neptune Beach are provided in Table H-14 which follows. Subsequent to the adoption of the City's Plan, all future development approvals will be conditioned upon the provision of services at the city LOS.

Table H-15.  
Level of Service Standards, Neptune Beach, Florida

| Facility/Service Area     | Level of Service Standards  |
|---------------------------|---|
| Traffic                   | LOS C for 24-hour traffic<br>LOS D for peak-hour traffic  |
| Sanitary Sewer Facilities | 125 gallons per capita per day  |
| Solid Waste Facilities    | Average Solid Waste Generation Rate; 7.1 pounds per capita per day                              |
| Drainage Facilities:      |   |
| Major Developments        | 25-year frequency, 24-hour duration; Rainfall Intensity curve-zone 8, DOT Drainage Manual, 1986 |
| Minor Developments        | 5-year frequency, 24-hour duration, Rainfall Intensity curve-zone 8, DOT Drainage Manual, 1986  |
| Potable Water Facilities  | Average Water Consumption Rate;<br>70 gallons per capita per day                                |
| Recreation                | Maintain existing facilities  |

## **Concurrency**

Chapter 9J-5.016(3)(c), Florida Administrative Code, requires local governments to address programs and activities for eliminating existing public facility capacity deficits, considering locational needs based on projected growth patterns, accommodating new development and redevelopment facility demands, considering the level of service standards for public facilities. This Comprehensive Plan strives to accomplish this by:

1. adopting level of service standards (LOS) which have been developed to meet local conditions and which do not necessarily reflect LOS standards recommended by others. In adopting LOS the City has, to the extent feasible, made the standards consistent with the state and regional policy plan;
2. permitting temporary deviations from the adopted levels of service for roads or segments of roads for one period of not more than two fiscal years following a determination that the actual LOS is below the adopted LOS. Such roads or road segments may operate one LOS below the adopted LOS for one such period;
3. permitting temporary deviations from adopted LOS for drainage, traffic, and recreation facilities by permitting final development orders to be issued if adequate capacity for these facilities will be available within 12 months of the issuance of the certificate of occupancy. Deviations will not be granted for water, sewer, and solid waste facilities which must be available prior to the issuance of certificates of occupancy to protect the health of the residents. Where other proposed deviations pose a threat to health and safety they will be denied.
4. establishing a 5-year schedule of capital improvements which is 100 percent financed by revenue sources available to the local government under current law and which is designed to achieve adopted LOS, to the extent possible, in proscribed development areas.

The role of monitoring and evaluation is vital to the effectiveness of any planning program and particularly for a Capital Improvement Element or a Capital Improvement Budget. This is largely because revenue and expenditure streams are subject to fluctuations in the market and in the economy. It is the behavior of these streams which is used to predict the fiscal trends in order to maintain the City's adopted levels of service or expected needs in all areas of government operations dealing with public facilities. Therefore a continuous program for monitoring and evaluation is required for both a capital improvement element as well as a capital improvement budget on an annual basis to ensure that the required fiscal resources are available to implement these development programs.

An annual review should be the responsibility of the local planning agency supported by a local planning staff. A designated staff member should be assigned to collaborate with the finance Director in undertaking this analysis for the planning body charged with implementing the

Comprehensive Plan. The Local Planning Authority (LPA) shall also participate in Budget Workshops when they are convened for the purpose of formulating the next year's budget. Once the findings have been evaluated, the local agency's recommendations should be presented to the governing body at a public meeting. The governing body will then direct the appropriate staff to take action deemed to be required based on the LPA findings and recommendations.

### **Monitoring and Evaluation**

The monitoring should include the following considerations coupled with an annual review of these same considerations to determine their validity:

1. any corrections, updates, and modifications of the element or capital improvement program concerning: costs, revenue sources, acceptance of facilities pursuant to dedications which are consistent with the element or program; and the dates of construction of any facility in the schedule; among the items to be considered are:
2. programmatic elements should be consistent with all the elements in Comprehensive Plan and their support of the Future Land Use Element;
3. the City's ability to provide public facilities and services within its jurisdiction in order to determine any need for boundary modification or adjustments to urban service areas, reserve areas and the like.
4. the priority assignment of existing public facility deficiencies or other components in the capital improvement program;
5. the City's progress in meeting those needs determined to be existing deficiencies;
6. the criteria used to evaluate programmatic elements in order to ensure the projects are being ranked in their appropriate order of priority; the categories includes:

Priority A - projects currently underway for which the City is fully committed and/or are so urgently needed that implementation cannot be delayed. Only essential projects should be so classified.

Priority B - projects needed to maintain the department or function at the current level of service.

Priority C - projects needed as soon as funds can reasonably be made available, or projects which are desirable but needing further study.

Priority D - projects needed but can be safely deferred beyond the third year of the five year projection.

7. the City's effectiveness in maintaining the adopted LOS standards;
8. the City's effectiveness in reviewing the impacts of plans and programs of state agencies and water management districts that provide public facilities within the town's jurisdiction;
9. the ratio of outstanding indebtedness to the property tax base;
10. efforts made to secure grants or private funds, whenever available, to finance the capital improvements;
11. the criteria used to evaluate proposed plan amendments and requests for new development or redevelopment;
12. capital improvements needed for the latter part of the planning period, for inclusion in the 5 Year Schedule of Improvements; and
13. an assessment of the Capital Improvements Element and project listing in terms of its effectiveness of carrying out the goals, objectives and policies of the Comprehensive Plan.

### **Implementation**

To implement the statutory concurrency provisions of Chapter 9J-5, F.A.C. requires local governments to adopt policies and implementation strategies to assure that public facilities and services which meet the adopted level of service standards are available concurrent with the impacts of development, and that no development order will be issued which results in a reduction in the levels of service below the adopted standards. To achieve these mandates in a reasonable manner, the Comprehensive Plan directs the City to adopt land development regulations which:

1. provide for the review of applications for those types of development orders which would impact the adopted levels of service;
2. assure that no development order will be issued which results in a reduction of the level of service below that permitted by the Comprehensive Plan;
3. provide that for purposes of determining whether sufficient capacity of public facilities will be available concurrent with the impacts of permitted development, the review of applications for preliminary development orders shall provide that the preliminary development order shall be conditioned upon and subject to findings of adequate public facility capacity prior to the issuance of any final development order for the subject property.

4. provide for a review of applications for final development orders to assure that no final order or permit will be issued unless there will be sufficient capacity of public facilities to meet the adopted level of service standards at the time of issuance of the building permit in the case of water, sewer, and solid waste facilities, and in the 12-month period following the issuance of the certificate of occupancy for roads, parks, and drainage;
5. provide for prioritization of competing applications for public facility capacity as follows:
  - a. previously approved development orders permitting redevelopment;
  - b. previously approved development orders permitting new development;
  - c. new development orders permitting redevelopment;
  - d. new development orders permitting new development.
6. provide for deferral or rereview of applications, in the event of inadequate public facility capacity, on the basis of rational criteria;
7. provide that development shall commence within a specified reasonable period of time after issuance of a development order or that the development order shall expire, and provide criteria for reasonable extensions of time; and
8. allow a developer to provide the necessary public facilities at the developer's own expense, provided the public facilities are consistent with the schedule of capital improvements in the Plan and that the City and the developer enter into an enforceable agreement which shall provide, at a minimum, a schedule for construction of the necessary public facilities and mechanisms for monitoring so that the public facilities will be available concurrent with the impacts of the development or the development will not be allowed to proceed.

### Capital Improvements Schedule and Location

The following table lists the schedule and location of capital improvements as identified in all of the elements.

Table H-15.  
Capital Improvements Identified in Plan Elements

| Project  | Target Year | Cost      |
|--|-------------|-----------|
| 1. Replace older 2-inch water lines with 6-inch lines and other component upgrades<br>(Revenue Bond)   | 1992        | \$314,000 |
| 2. Implement bikeways as part of future traffic circulation plan<br>(16,700 LF @ \$8.65)<br>(1 pedestrian bridge \$10,000)<br>(General Fund) | 1995        | \$154,500 |