COASTAL MANAGEMENT ELEMENT APALACHICOLA
Revised October - 2004

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I. COASTAL AREA BOUNDARY

The coastal area for Apalachicola shall consist of an area designated by the City Zoning Regulations as the special waterfront district (See map 1). This designation serves as the special purpose study area for hurricane evacuation and hazard mitigation purposes and includes the Category 1 Hazard Zone. The special purpose study area for estuarine water quality are these estuarine waters referred to as the Apalachicola River and Bay, East Bay, St. Vincent Sound and adjacent Gulf of Mexico waters.

II. LAND USE IN COASTAL AREA

The existing land uses within the Apalachicola coastal area are identified on Map 1 and inventoried in Table 1. The predominant land uses in the coastal area are conservation, undeveloped and residential. The intense urbanized areas are located along the periphery of the coastal area as indicated by Map

III. WATER-DEPENDENT/WATER-RELATED USE

The following water dependent uses occur in the City: water-dependent recreation fishing piers and boat ramps, commercial fishing facilities and marinas.

TABLE 1
Estimated Coastal Area Land Use

Residential	24.2
Commercial General	5.1
Undeveloped/Vacant	33.4
Conservation	99.0
Public Facilities	4.9
Industrial	.5
Seafood Commercial	6.4
Recreation	9.6
Total	183.1 acres

The following water-related uses occur in the City: commercial resorts, upland support for marinas, upland support for commercial fishing, dry storage and support for parks and recreation. The existing water dependent and water-related uses are shown on Map 3 and inventoried in

Table 2
TABLE 2 WATER DEPENDENT/WATER RELATED USES IN APALACHICOLA
WATER FACULITY DEPENDENT WATER RELATED

Facility		Water Dependent Uses	Water Related
1.	Apalachicola Marine Services		X
2.	Leavins Seafood	X	
3.	Buddy Ward & Son Sfd.	X	
4.	Miller Marine	X	

5.	Rainbow Motel & Marina	X	
6.	Warehouse Storage		X
7.	Frog Level Marine		X
8.	Taranto & Sons Sfd.	X	
9.	City Dock	X	
10.	Raffield Fisheries	X	
11.	Commercial dock facility	X	
12.	City dock	X	
13.	D & G Seafood	X	
14.	13-Mile Seafood	X	
15.	Coast Guard Station	X	
16.	Riverside Seafood & Ice	X	
17.	Commercial docking facility	X	
18.	Bodiford Shrimp Co.	X	
19.	Gander's		X
20.	Gulf Oil Supply		X
21.	Lewis Seafood		X
22.	Upland support for commercial fishing		X
23.	Corky Richard's woodworking		X
24.	Wefing Marine Supply		X
25.	Sizemore's Ace Hardware		X
26.	Apalachicola Building Supply		X
27.	Franklin Shipbuilding		X
28.	Quality Seafood	X	
29.	Bayside Shellfish	X	
30.	Scipio Creek Marina	X	
31.	Harbor Master House		
32.	Apalachicola National Estuarine Research Reserve		X
33.	Dept. of Natural Resources Shellfish Laboratory		X
34.	Upland support for commercial fishing		X
35.	Apalachicola Adventures (Charter fishing)		X
36.	Battery Park and boat basin	X	
37.	Lafayette Park	X	

IV. CONFLICTS IN SHORELINE USE

The existing land use Map 2 and Table 1'shows that the coastal area land use is predominantly conservation. Following conservation, the land use predominances is next split between residential and undeveloped/vacant. As shown on the future land use map 3, conservation still ranks highest and is split next between residential and general commercial. Shoreline access within Apalachicola is limited as per the existing and proposed future land use maps for two major reasons.

Traditional shoreline use (recreational/commercial) is prohibited within the designated residential and conservation area. This leaves the downtown riverfront area along Water Street and the Scipio Creek boat basin at the end of Commerce Street as the only viable commercial shoreline access area within the City limits. Traditionally used for seafood processing, commercial fish unloading docks and water dependent wholesale/retail business, the working waterfront of downtown Apalachicola has been encroached upon, in recent years by a growing tourism industry. Where once seafood processing houses lined Water street, there are now two restaurants, one major marina and plans to construct another marina motel/restaurant and two additional marina facilities along the already busy waterfront.

As recreational boating increase in popularity within Franklin County, (see Table 3) it is expected that this will create demand pressures on both coastal and inland shore resources for additional marina facilities within Apalachicola and create additional conflicts between the traditional commercial fishing use of shoreline property and newer tourism oriented commercial pressures. At some point, the City, through its zoning regulations, may have to restrict future tourism oriented commercial development from further expansion along the riverfront if it expects to maintain a viable working seafood waterfront.

This potential expansion may also come into conflict with environmentally sensitive lands. Since shoreline is essentially fixed in supply, boating and marina expansion may encounter a resource constraint that must be rationed by either the private market (i.e., the price system) and/or government intervention.

The tourism/commercial seafood industry conflict is not the only conflict facing Apalachicola. The City, along with State and Federal (see section on existing State, regional and local regulatory programs) currently have adequate regulations to protect the shoreline. However, any regulations are only as strong as their enforcement and as strong as local government commitment to protection of the resources.

V. RECREATIONAL WATER DEPENDENT FACILITY NEEDS

The following needs analysis is based on information about Franklin County as a whole. No breakdown of information was available relative to the municipalities within the county. The information is relevant to Apalachicola for the following reasons: 54% (7 out of 13) of the existing marinas (as inventoried in the public access section) in the county are found within the incorporated limits of Apalachicola; Apalachicola is located adjacent to easily navigated waters and therefore a prime location for recreational water-dependent facilities; recreational water-dependent facilities are being proposed at the time of this writing for the City's waterfront.

With regard to marina facilities, supply, demand and projected need analysis was determined using a 1984 Department of Natural Resources study titled, "Estimation of the Demand and Supply of Marina Services in the State of Florida." The study bases its projected needs for marina facilities on a number of variables, including boat registration information and population projections for the area. With respect to data sources, boat registrations were obtained from the county by the Florida Department of Natural Resources over the 1965-1981 period. Population and personal income information was obtained from the National U.S. Department of Commerce.

According to the study, Franklin County boat registration is expected to increase from 1990 by approximately 60 boats by the year 1995, from 1033 boats in 1990 to 1092 boat registrations in 1995. By the year 2000, that figure is projected to increase by 106 to a projection of 1139 boat registrations in the year 2000. By the year 2005, projections indicate there will be 1,247 boats registered in the county (see Table 3). Table 4 indicates the total projected increase from 1982-2005 in the number of boats registered in Franklin County as 377 or 43.33 percent.

Table 3
Actual and. Projected Boat Registrations
By State Planning Region and County
For Florida. 1982 to 2005

Region-County	Actual 1982	1985	1990	1995	2000	2005
Calhoun	948	1,047	1,111	1,185	1,232	1,325
Franklin	870	965	1,033	1,092	1,139	1,247
Gadsden	1,452	1,644	1,737	1,827	1,912	2,026
Gulf	1,383	1,404	1,419	1,463	1,493	1,606
Holmes	1,084	1,223	1,348	1,454	1,558	1,670
Jackson	2,473	2,686	2,823	3,050	3,212	3,532
Jefferson	513	544	575	609	642	683
Leon	8,634	9,253	9,853	10,463	11,049	11,563
Liberty	488	499	531	563	584	627
Wakulla	1,448	1,561	1,601	1,656	1,722	1,791
Washington	1,181	1,291	1,413	1,540	1,649	1,786
Total	20.474	22.216	23.444	24.901	26.203	27.857

SOURCE: 1984 Department of Natural Resources

Table 4
Projected Increase in the number of Boats Registered
and the Total Percent Growth in Registered Boats
by Region and County of Florida. 1982-2005

Region-County	Increase in Number of Boats	Total Percent Growth 1982-2005
Calhoun	377	39.77
Franklin	377	43.33
Gadsden	574	39.53
Gulf	223	16.12
Holmes	586	54.06
Jackson	1,059	42.82
Jefferson	170	33.14
Leon	2,929	33.92
Liberty ,	139	28.48
Wakulla	343	23.69

Washington	604	51.10
Region 2	7,384	36.07%
Source: 1984 Department of Natural Resources		

Some assumptions of those projections, as reported in the 1984 study, are as follows:

1. Population forecasts were provided by the University of Florida, Office of Business and Economic Research to the year 2000. It was assumed that for the 2000-2005 period population would continue to grow at the projected growth rates for the 1990-2000 period. For Franklin County, that growth rate is 2.36 percent. (See Future Land Use element)

2. Personal Income Forecasts were also provided by the University of Florida, Office of Business & Economic Research to the year 1990. Personal income for the 1990-2005 period was calculated by assuming that real per capita income would continue to grow at the 1982-1990 rate, then multiplied by the population projections to arrive at real personal income (i.e. personal adjusted for the consumer price index).

3. The Consumer Price Index was forecasted by Data Resources Incorporated for the 1982-2005 period.

4. For those counties in which gas prices were used in the projection equations, projections of gas prices for the 1982-2005 period were provided by the U.S. Department of Energy.

5. Boating expenditures per boat were held constant at the 1982 level. Forecasts were not available. The historical trend was downward. Thus, holding boating expenditures per boat constant may be considered as resulting in conservative predictions if boating expenditures per boat continue to decline over the projection period.

A. The Demand for Marina Service

Marinas usually provide two kinds of basic services to the public. They offer wet slips and dry slips or racks for boat storage. It is important that demand for wet slips or berths be differentiated from the demand for dry berths. First, these are really two different products. Second, dry berths may not interfere with wetlands or other environmentally sensitive lands. Not surprisingly, in every region of the study, wet slips outnumbered dry racks by nearly 2 to 1 for the average marina.

Table 5 indicates the estimated number of pleasure crafts berthed in Franklin County during 1982. Based on those estimates, Table 6 indicates demand for wet slips vs. dry racks during 1982. As a point of comparison. Table 7 indicates the capacity of those wet slips and dry racks located within Franklin County during 1982. As the tables reflect, in 1982, there was more than adequate capacity of wet and dry docking facilities within the County - both wet and dry slips operated at a 77 percent capacity.

Table 5
Estimated Number of Pleasure Crafts

Berthed in Each Region and County
In the State of Florida, 1982*

	Region-County	Number Berthed	Percent of Region
1.	West Florida		
	Bay	1,683	31.28
	Escambia	1,669	31.02
	Okaloosa	1,762	32.74
	Santa Rosa	177	3.29
	Walton	_9JL	1.67
	Region 1	5,381	100.00
2.	Apalachee		
	Franklin	415	30.31
	Gadsden	46	3.36
	Gulf	150	10.96
	Jackson	44	3.21
	Leon	46	3.36
	Wakulla	668	48.80
	Region 2	1,369	100.00
3.	North Central		
	Alachua	140	24.47
	Dixie	236	41.26
	Taylor	12&	34. ?7
	Region 3		100.00
4.	North East		
	Clay	443	10.64
	Duval	2,528	60.72
	Flagler	171	4.11
	Nassau	183	4.40
	Putnam	504	12.11
	St. Johns	ill	8.02
	Region 4	4,163	100.00
5;	Witchlacoochee		
	Citrus	1,350	52.41
	Hernando	99	3.84
	Levy	200	7.76
	Marion	554	21.51
	Sumter	H3.	14.48
	Region 5	2,576	100.00
	Source: DNR, 1984		

Table 6
Demand for Wet Slips and Dry Racks
By Region and County of Florida, 1982

Region-County	Wet Slips	Dry Racks	Total
Apalachee			
Franklin	292	123	415
Gadsden	46	0	46
Gulf	150	0	150
Jackson	44	0	44
Leon Wakulla	46 342	0 326	46 668
Region 2	920	449	1.369
Source: DNA, 1984			

Table 7
Capacity for Wet Slips and Dry Racks
By Region and County of Florida, 1982

Region-County	Wet Slips	Dry Racks	Total
Apalachee			
Franklin	380	160	540
Gadsden	130	0	130
Gulf	250	0	250
Jackson	148	0	148
Leon	66	0	66
Wakulla x	407	388	795
Region 2	1.381	548	1.929
SOURCE: DNR, 1984			

Using that information, plus other methodology information contained in the study such as boat length, number of boats per owner, income of the individual, marine services price. Table 8 calculates the projected demand for berths in Franklin County through year 2005. As indicated in Table 8, 299 berths will be required by 2005 to meet the recreational boating demand in Franklin County. However, because rates of growth in population and per capita income over the 1965-1982 period as demand determinants are not likely to be sustained, the annual percentage increase in boat registrations in all counties in Florida over the 1982-2005 period will largely determine the actual demand for marina services. Because, after all, the demand for recreational boats is really a demand for recreational services. And a demand for recreational boats is determined, to a large degree, on personal income - still relatively low in Franklin County in comparison to other Florida coastal regions.

Table 8
Predicted Number of Berths Demanded In Each Region and County. 1982-2005
Region-Countv 1982 1985 1990 1995 2000 2005
Apalachee

Region-County	1982	1985	1990	1995	2000	2005
Apalachee						
Franklin	415	511	557	604	644	714
Gadsden	46	58	62	67	72	77
Gulf	150	169	174	184	192	209
Jackson	44	53	57	63	68	75
Leon	46	55	59	65	70	74
Wakulla	668	803	857	928	999	1,057
Region 2	1.369	1.650	1.767	1.910	2.044	2.206
SOURCE: DNR, 1984						

Table 9
Projected Growth in Demand for Berthing
By Region and County of Florida, 1982 to 2005

Region-County	Annual Growth Rate	Additional Berths Demanded 1982-2005	Total Percent Growth in Demand 1982-2005
Apalachee			
Franklin	2.16	299	72.05
Gadsden	2.24	31	67.39
Gulf	1.44	59	39.33
Jackson	2.32	31	70.45
Leon	2.07	28	60.87
Wakulla	1.99	389	58.23
Region 2	2.07	837	61.14

To discuss how those projected berthing (i.e. marina) demands will be met, it is important to realize that in the Apalachee Region (comprised of Calhoun, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Liberty, Wakulla, Washington counties), the distribution of berthing demand between private < public marinas is disproportionately split. As indicated in Tab! 10, the private sector provides nearly 94.1 percent of all berthing facilities in the region, while the public sector provides only 5.9 percent. This is accurately reflected in Franklin County, where nearly all docking facilities are privately owned. Table 30 in the Public Access section indicate! the breakdown of Private vs.« Public marinas in the County. It , reasonable to expect that the private sector will provide most, not all, of the projected berthing facilities for Franklin County especially considering such an expenditure is not addressed as < budgeted item in the Capital Improvements element.

Table 10
Distribution of Berthing Demand
Between Private and Public
Marinas By state Planning Region, 1982

Region	Private	Public
Apalachee	94.1	5.9

Source Department of Natural Resources Report 1984

VI. AREAS IN NEED OR REDEVELOPMENT

Most, of the commercial waterfront that falls within the coastal area of Apalachicola could be classified as being in an area needing redevelopment. Many of the buildings are historical structures listed on the National Register. See map 5 for historic district boundaries within the coastal area.

The City of Apalachicola does not currently have a redevelopment program in place. However, the City does administer a one million dollar recycling program through which funds are distributed for the purpose of fostering business redevelopment within the City - most of which has so far happened within the coastal area.

The City relies entirely on grant sources to fund economic redevelopment and does not include such programs in its capital improvements funding.
Economic redevelopment is beginning to happen within the City of Apalachicola however. Individual developers, interested in capitalizing on the City's natural and historical resources, have already purchased, and are currently making plans to redevelop, certain blocks within the coastal area; as have other developers in recent years. It is expected that this trend will continue as the County's population grows and development pressures increase on adjacent St. George Island.

VII. ECONOMIC BASE

Information about Apalachicola's economic base is discussed in greater detail in the Optional Economic Development Element. A synthesis of that information is presented here. The major components of the current economic base of the coastal area are commercial fishing, commercial retail and tourist commercial.

There has been a shift in recent years away from commercial fishing industry toward marine-related commercial tourism. The conflicts between these two land uses are identified elsewhere in this element. The future land use element proposes that the riverfront area be classified as strictly commercial to accommodate both commercial seafood and commercial tourist industry. It is preferable to locate seafood commercial directly adjacent to the river as this industry has traditionally been more water-dependent and is what helped attract tourism to Apalachicola in the first place. The future land use map makes no distinction between the two uses. It will be the City's zoning ordinance which, through its waivers of lot coverage requirements and setbacks for

.seafood commercial, that controls the type of commercial activities to occur along the waterfront. At some point, the City may wish to restrict, through its zoning ordinance, the further expansion of tourism-commercial use directly on the waterfront to preserve the working waterfront.

VIII. NATURAL RESOURCES OF THE COASTAL AREA

The required inventory and analysis of the effect of future land use can be found in the City's conservation element.

IX. HISTORIC AND ARCHAEOLOGICAL RESOURCES OF THE COASTAL AREA

Most of the coastal area falls within Apalachicola's historic district. A list of specific historical structures can be found in the City's Housing Element and optional Historic preservation Element. The district boundaries are marked on map 4,

A. Impact of Future Land Use on Archaeological and Historic Resources

As indicated on Map 5, most of the City's coastal area falls within the historic district. The City's Future Land Use plan is not expected to produce a negative impact on the City's historic resources. The plan does not call for any changes which might increase development pressure in the City's residential and commercial areas. And, as a result of the National Register listing for much of the City, there are strict development standards which must be adhered to for any development. Any new construction or structural alteration of a building (even if it is not a historic structure) must meet certain City building regulations as outlined in the Historic Preservation Element.

If any impact is felt by the Future Land Use plan/ it is expected to be positive. The supply of historic resources in Apalachicola is limited, and as a result makes them more valuable. A growing number of residents are restoring old historic house in the City.
The archaeological and historic sites are also protected to a limited extent by Florida law. Those properties on state-owned or state-owned sovereignty submerged lands receive the highest level of protection. In order for a privately owned site to receive state protection, the proposed project must be a development of regional impact an electrical power plant or a federally-funded project.

X. ESTUARINE POLLUTION

This section of the Coastal Management Element document discusses the water quality status of Apalachicola’s rivers and estuaries, and includes the following waterbodies: Apalachicola Bay and River. The following data and pollution source analysis was in part, excerpted from the DER's 1988 Water Quality Assessment Report and is supplemented with information from a 1983 pollution source study completed by R.J. Livingston, a 1986 DER basin survey, and information provided by the Northwest Florida Water Management District.

A. Apalachicola Bay and River Basin

The City of Apalachicola lies adjacent to much of the Apalachicola Bay Basin, which encompasses approximately 200 square miles of estuary area including St. Vincent Sound, East Bay, Apalachicola Bay and St. George Sound. The bay system is the terminus of a 20,000 square mile basin which extends to a point north of Atlanta, Georgia. The major inflow into the bay is the Apalachicola River with an average flow of 25,000 cfs varying seasonally from less than 15,000 to greater than 40,000 cfs. The basin is primarily the bay water, but also encompasses drainage from Apalachicola and the offshore barrier islands.

The Apalachicola River is formed by the confluence of the Flint and Chattahoochee Rivers at Lake Seminole. In Florida, the Apalachicola River flows 107 miles southward from the Jim Woodruff Dam to the Gulf of Mexico at Apalachicola. Prior to entering Florida, the river system receives numerous discharges from Atlanta and other urbanized areas (textile mills, paper mills, wastewater treatment plants, steam power plants, and a nuclear power plant) along with extensive runoff from agricultural areas of Alabama and Georgia.

Class II water, those used for shellfish propagation or harvesting, include the majority of the brackish water areas in the estuary (map 6). The entire bay system from Alligator Harbor to St. George Sound, Apalachicola Bay, East Bay and tributaries, St. Vincent Sound, and Indian Lagoon are Class II waters with the exception of a two-mile radius near Apalachicola and runoff from Eastpoint. Class II water standards are more stringent concerning bacteriological quality than any class due to the fact that shellfish, oysters and clams that are consumed uncooked by man can concentrate pathogens in quantities significantly higher than the surrounding water. The Florida Department of Natural Resources (DNR) maintains a lab in Apalachicola and conducts surveys to determine water quality in shellfish waters. All Class II waters are additionally classified by DNR as approved, conditionally approved, or prohibited based upon these surveys. As conditions change areas are closed or opened based on bacterial surveys and major rainfall events which increase bacterial levels due to runoff.

All other waters in the Apalachicola River and Bay drainage basin are Class II waters. This includes the Apalachicola and Chipola Rivers, Dead Lake, Lake Wimico, Lake Seminole, and all other creeks, ponds, or surface waters.

1. Specific Water Quality Problems and Pollution Sources Apalachicola Bay Basin

The entire bay as well as the Apalachicola River has been declared an Outstanding Florida Water. It is also the largest National Estuarine Sanctuary. In addition, it is an Area of Critical State Concern which requires more intensive regulation of planning and development in the area. According to the 1988 DER Water Quality Assessment Report, most surface waterbodies around Apalachicola are rated as having good water quality. (See Map 7)

Map 7 indicates overall water quality for the Apalachicola Basin. The numbers on the map correspond to Table 11, and represent monitoring locations tested by DER to determine water quality in the area. As indicated in Table 11, water quality for the three monitoring sites was listed as fair, degraded by urban runoff and inadequate septic systems - a major source of non-point pollution in Apalachicola Bay. In the northern part of the bay, untreated stormwater runoff from the city of Apalachicola and nearby fish-houses has had a localized impact on the bay.

Problems associated with fish-houses include high BOD from fishing wastes and pollutants due to boat traffic, docking and fueling.

Table 12
Water Quality Assessment Report
Screening Level Problems-Trend-Sources-Cleanup
'*" = Problem or Degrading Trent '0' = No Trend '." = No Data
'-' = No Problem or Improving Trend (See Legend)

BEACH NAME	MEETS USE	WQI RANK	WOSS PHIA	BDB D DOAI	CSTT HDMP	AMB MEI	FAB FWL	WQ	TFFT CCUS	BDDT OOSO	CSTT HDMP	TF EL	IM MU	AS GW
*Water Body Type: Estuary														
1.0 Apalachicola Bay Above Gulf of Mex	Unknown	Unkn	….	….	….	.								
13.00 Apalachicola Bay Above Gulf of Mex	Unknown	Unkn	….	….	….	.								
*Water Body Type: Stream														
2.00 East River Above Apalachicola Bay	Unknown	Unkn	….	….	….	.								**
3.00 Apalachicola River Above East River	Yes	Good	*….	….	….	-.-..	*	.						**
4.00 Apalachicola river above Chipola River	Yes	Good	*			-….		.						**
6.00 Florida River Above Apalachicola River	Yes	Unkn	….	….	….	.	**		……	…….	…….	…..		
6.10 Equaloxic Creek Above Apalachicola	Yes	Unkn	….	….	….	.			……	…….	…….	…..		
6.11 Big Gully Creek Above Equaloxic Creek	Yes	Good	….	….	….	..-..		.	……	…….	…….	…..		
7.00 Apalachicola River Above Florida River	Yes	Good	….	….	….	-.*	*	.	……	…….	…….	…..		**
7.10 Ammonia River Slough above Apalachicola	Unknown	Unkn	….	….	….	.			……	…….	…….	…..		
7.20 Sutton Creek Above Apalachicola River	Unknown	Unkn	….	….	….	.			……	…….	…….	…..		
8.00 Apalachicola River Above Stafford	Yes	Poor	*-*-	*-			*	.						**
8.10 Rock Creek Above Apalachicola River	Unknown	Unkn	….	….	….	.			……	…….	…….	…..		
9.00 Rock Creek Above Apalachicola River	Yes	Good	…-.	…-.	….	.		.	……	…….	…….	…..		
10.00 Crooked Creek Above Flat Creek	Unknown	Unkn	….	….	….	.			……	…….	…….	…..		
11.00 Apalachicola River Above Flat Creek	Yes	Good	….	….	….	.		*	…0…	…00	…00….	00		
11.10 South Mosquito Creek above flat Creek	Partial	Good	…*	……	…….	-.*	*	.					*	*
12.00 Stafford Creek Above Apalachicola	Yes	Unkn	….	….	….	.			……	…….	…….	…..		

14.00 Apalachicola River Above Apalachicola	Yes	Good	…*.	….	….	.	*		……	…….	…….	…..		*
14.10 Scipio Creek Above Apalachicola River	Partial	Good	…*.	….	….	.	***		……	…….	…….	…..	*	*
15.00 Apalachicola River Above Jackson River	Yes	Unkn	….	….	….	.	*	0	…0…	…00	…00….	00		*
16.00 Apalachicola River Above Brothers River	Yes	Unkn	….	….	….	.	*		……	…….	…….	…..		*
17.00 Brothers River Above Apalachicola R.	Yes	Good	….*	….	….	.		.	……	…….	…….	…..		
18.00 Jackson River above Apalachicola River	Yes	Good	….*	….	….	.		.	……	…….	…….	…..		
18.10 Clark Creek Above Indian Swamp	Yes	Good	….*	….	….	.		.	……	…….	…….	…..		
18.20 Murphy Creek Above Indian Swamp	Yes	Good	….	….	….	.		.	……	…….	…….	…..		
19.00 Lake Wimico Above Jackson River	Yes	Good	….	….	….	.		.	……	…….	…….	…..		
19.10 Depot Creek Above Lake Wimico	Unknown	Unkn	….	….	….	.		.	……	…….	…….	…..		
19.20 Cypress Creek Above Lake Wimico	Yes	Poor	…-.*	….	….	.		.	……	…….	…….	…..		*
20.00 ICWW Above Lake Wimico	Unknown	Unkn	….	….	….	.		.	……	…….	…….	…..		
21.00 Flat Creek Above Cooked Creek	Yes	Fair	….*	….*	….	.		.	……	…….	…….	…..		
USGS HYDROLOGICAL UNIT CODE: 03130014 Apalachicola B														
*Water Body Type: Estuary														
1.00 Apalachicola Bay Above Gulf of Mexico	Yes	Fair	….	….	….	-*..		0	…0…	…00	…00….	00		**
2.00 St. Vincent Island Above Apalachicola	Yes	Fair	….*	….	….	.		.	……	…….	…….	…..		
3.00 St. George Sound/Island Above Apalachicola	Yes	Fair	….*	….	….	.		.	……	…….	…….	…..		*

In the southern bay area, there has been rapid development of St. George Island, and there is concern over septic tank drainage into the bay. In 1987, the Department of Health and Rehabilitative Services recently conducted a study of septic tanks on the island and found that 23% of the 724 tanks were failing, and that many of them were located poorly with respect to

water tables and required setbacks. On St. George Island, there is a boat basin connected with the bay that receives runoff from. a shopping area and wastes associated with the mooring, fueling and off-loading activities of oyster boats.

The most extensive damage to the bay recently has been through the action of Hurricane Elena and Hurricane Kate in 1985 which decreased both water quality and habitat necessary for shellfish harvesting.

Water quality in the majority of the Apalachicola River Basin is very good. It is, together with the Bay, an Outstanding Florida Water and a National Estuarine Sanctuary. Map 8 indicates water quality for the basin. The Apalachicola River basin has very good water quality except for two upstream tributaries which are impacted by domestic discharge, and Scipio Creek at the mouth of the river which is impacted by shrimping and marina activities and historic wastewater loading. Table 12 is an assessment of those monitoring points shown on Map 8. (1988 DER Water Quality Assessment.

a) Point Source Pollution

The only DER-permitted point pollution source within the City limits is the existing wastewater treatment plant which has design capacity of 1.0 mgd, with plant hydraulic design based on peak flows rates of 2.8 mgd.

There are no hazardous waste point sources of pollution within Apalachicola.

b) Non point Source pollution

As referenced in the Public Facilities element, Apalachicola's nonpoint source pollution consists of storm drainage from man-made ditches following property lines with conduits under driveways. Relatively high annual rainfall, low topography, proximity to river and coastal bay systems and area's high water table are all important considerations when dealing with the City's drainage situation. Large volumes of stormwater are carried into East Bay, Apalachicola Bay and St. George Sound through both natural and man-made facilities.

Northwest portions of Apalachicola drain northward through small local tributary streams to Turtle Harbor, Scipio Creek and Apalachicola River. Southwestern parts of the city drain Southwest to the Apalachicola Bay. Older, eastern portions of the City drain over land or through storm drainage systems more or less directly to the Apalachicola River and Bay.

The predominant soil associated found in Apalachicola other than marsh is the Leon-Scranton-Orie association which is characterized as sandy and wet. The fact that most areas are low, have low water tables and for the most part drain directly into surface waters is a potential pollution problem. The initial flushing action of urban runoff carries significant amounts of pollutants into

the natural water bodies. Without treatment (i.e. retention ponds, wastewater treatment plants) these pollutants quickly reach either groundwater or productive shellfish areas.

As a mechanism for improving the stormwater management situation in Apalachicola, a plan of action is currently being developed. The first step in such a course of action is the development of a data base sufficient to formulate a master stormwater management plan for the City of Apalachicola and adjacent areas west of the Apalachicola River.

Work is now under way by the United States Department of Agriculture Soil Conservation Service to map natural watersheds in these areas. This will be the first phase in a four-phase program that will eventually provide recommendations and non-structural controls of stormwater within each of the identified watersheds.

This project will focus on providing information critical to developing a master stormwater management plan for the City of Apalachicola and adjacent areas west of the Apalachicola River. The project will be conducted over a three-year period. During the next three to five years, it is anticipated that this project will lead to development of a master stormwater management and an implementation program. The project will be phased as follows:

Phase I - Problem identification and collection of watershed data.
Phase II - Watershed model development and evaluation of alternatives.
Phase III - Stormwater Master Plan development and refinement, remedial action plans.
Phase IV - Implementation.

The work to be completed under this project is essential to any long-range planning efforts towards providing adequate stormwater drainage facilities.

2. SWIM Point and Non-Point Pollution Project

The Northwest Florida Water Management District, through the 1987 Surface Water Improvement and Management Act, is also currently compiling a comprehensive list of point and non-point assessment for the Apalachicola River basin. The project, which was initiated in mid-1989, involves systematically listing the pollutant dischargers in the Apalachicola River basin, briefly describing their operation and permit requirements and a history of their regulatory contacts (permit applications, field inspections, lab audits, enforcement actions, etc.). This report will serve as the basis for a program intended to bring all DER-permitted point source pollutant facilities into compliance with state water quality laws.

3. Additional Water Quality Information

A 1983 study completed by Robert J. Livingston and associates from the Florida State University confirms the DER report findings. Livingston conducted a comprehensive analysis concerning water and sediment quality and biological structure at 55 stations in the Apalachicola River and

Bay system from July through October in 1983. This analysis was designed to identify, using chemical and biological indicators, sources of pollution that could affect the oyster industry in the lower Apalachicola drainage system. The study was performed before, during, and after the summer-early fall peak of local rainfall to maximize the possibility pointing local sources of pollution to the system and is presented in identification and analysis of sources of pollution in the Apalachicola River and Bay system. According to the study, municipal drainages contribute significantly to the pollution burden of the Apalachicola River-Bay area. Scipio Creek (Apalachicola), Eagle Creek (Eastpoint), and runoff from Eastpoint into near shore areas of St. George Sound were all found to be affected by a combination of a high BOD and C.O.D., low dissolved oxygen, and heavy metal contamination of sediments. Areas of northern Apalachicola Bay that receive runoff from the City of Apalachicola also showed signs of low water quality. The dredged canals of St. George Island are polluted. The boat basins at St. George Island and Apalachicola were contaminated with organic input and heavy metals in the sediments. The lowest dissolved oxygen in the entire system was noted at the St. George boat basin during periods of high summer rainfall and overland runoff. At all of the noted sites in the study, the biological indices indicated high to moderate biological stress during the study period. All of the areas could serve as sources of fecal coliform bacteria to the bay system. (Livingston, 1983)

Other major sources of pollutants were located in areas receiving drainage from agricultural operations (Murphy Creek and dark's Creek from the MK Ranch site and West Bayou in East Bay from the Tate's Hell Swamp). Aerial reconnaissance of the study area indicates that extensive areas of the Tate's Hell Swamp have been drained by forestry interests into East Bayou and West Bayou in eastern portions of East Bay. High organic input and heavy metal contamination of the sediments were noted in the areas of the drainage system receiving agricultural runoff. Biological indices indicated severe stress, and these areas could also be sources of fecal coliform bacteria to the Apalachicola Bay system (Livingston, 1983).

4. Impact of Proposed Land Uses and Facilities on Estuaries

The general Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element proposes no new facilities using surface water discharge. Exact locations of new package plants cannot be determined; however, it is reasonable to expect that they will be associated with the higher densities of residential land use and the commercial areas as shown on the Future Land Use map.

Insufficient information on the type and specific location of new industries is available to project new industrial point sources of pollution. Each of the new marina site could be viewed as a point source of estuarine pollution due to past problems marinas have had with spills of petroleum products, disposal of untreated sewage, and concentrations of heavy metals in bottom sediments. The water-dependent use section of this element estimates a need for about 300 new boat slips by the year 2005, and typically this would require 4 new marinas, assuming a statewide average of 75 boat slips per marina stays the same.

Another group of point sources which can be expected are discharges from stormwater treatment facilities. It is assumed that each new major development will have stormwater treatment facilities and that most of these will have provisions for discharges to surface water; however, if the facility is functioning properly, most of the pollutants which would have entered the estuary as non-point sources will have been removed by the stormwater treatment facility.

5. Increases in Estuarine Pollution From Non-point Sources

As there are no projected increases in urban land use countywide, and because there is not significant population increase projected, non-point source pollution increase estimates for the county will depend on the amount of infill that occurs in underground areas.

The City's current stormwater management provisions require stormwater management of the first 1.5 inches of rainfall designed in accordance with 17-25 F.A.C. Adopted as part of the Area of Critical State Concern Program, the stormwater management provisions require two separate elements: 1) that a State Stormwater Management permit be obtained for all new development except for the construction of residential dwelling units; and 2) for those types of development exempted from state permitting, the city provisions require that stormwater impacts be minimized by using site-suitable best management practices. Drafted by DER, the provisions are considered to be the most effective regulations for dealing with non-point source pollution

6. Changes To Estuarine Circulation Patterns Due To Proposed Future Land Use And Facilities
This comprehensive plan proposes no new facilities that will alter the circulation patterns of the estuary. Maintenance dredging of the Apalachicola River will have the most significant influence on circulation in the estuary.

a). Contaminants In The Sediment From Proposed Future Land Uses And Facilities
The amount of contaminants being added to the estuary's sediments from Apalachicola agriculture use is not expected to increase because the Future Land Use map does not indicate any agricultural land within the city. Agricultural-related sediment contaminants from sources upriver which flow downward to the bay cannot be determined.

The estuary bottom under marinas can continue to expect to suffer additional contamination from hydrocarbons and heavy metals

Effluent from industrial operations may contribute to sediment contamination. However, since the types and exact location of new industries locating in the county are unknown, it is not possible to assess the specific impacts.

b). Analysis of Needed Remedial Action

Wastewater treatment plants with histories of operation problems need to be repaired or replaced. Plants with a history of problems include Apalachicola's. Consideration should be given to

disposing of effluent by means other than surface water outfall when building or repairing wastewater treatment plants. New surface .water outfalls should be prohibited in the Apalachicola vicinity to prevent contamination of approved or conditionally approved shellfish harvesting areas.
Marinas are another source of pollution to the estuaries. Marinas should be designed to allow the maximum flushing of the boat basin. The use of dry storage should be encouraged, as this reduces the amount of heavy metals and petroleum products released to the estuary. The water of the marina and surrounding waters should be of sufficient depth to allow the operation of boats without stirring up bottom sediments.

As the amount of urbanized land in the city increases, the amount of non-point source pollution entering the estuary will increase, despite the stormwater management ordinance. To help combat non-point source pollution entering the estuaries by way of the drainage canals, modification of the canals to divert all or part of their flow into the wetlands should be studied. This strategy may also prevent unacceptable quantities of fresh water from flowing into the estuary during heavy rainfall events.

There needs to be a stronger connection between the city and State government agencies with regard to the monitoring and assessment programs and the regulatory and permitting programs. In practice, the permitting process follows guidelines for individual facilities or projects without major consideration given to their effect on the whole basin, or to the city goals. Basin assessment monitoring programs have been established by the state, however, they are not closely tied in with the permitting process, and are not shared with local government. An effective intergovernmental program should be implemented in the City.

Finally, many polls have indicated that residents are highly concerned over environmental issues. However, the City has taken a very small role in public environmental education. This task currently rests with the press, several special interest private environmental groups, and state-promulgated brochures. A better awareness of both the environmental rules and the ecological reasons for which they were developed would increase compliance, augment enforcement and provide for stronger political support. The production and dissemination of easy-to-read case studies of water quality improvements should be beneficial to the city.

7. Analysis Of Impact

Overall, the Apalachicola River-Bay system remains relatively pollution-free. However, reports clearly show that wherever there are concentrations of people or changes in the natural drainage system tied to human activities, the water and sediment quality and biological integrity of the water and sediment quality and biological integrity of the receiving area are adversely affected as compared to unpolluted or otherwise unaffected areas. Because of the relatively low population levels in the region, such polluted areas remain rather localized at present. However, as population increases, and development continues to infill those currently undeveloped areas, a certain amount of water quality degradation can be expected. Several City and State regulatory

programs have been put in place to mitigate much of the effects of development and it is hoped that the City's zoning code which requires adequate stormwater management practices be implemented into all development - even that exempt from state stormwater permitting requirements, will mitigate those effects. There local regulations, combined with state dredge and fill, stormwater management and coastal construction regulations is intended to limit the effects of non-point source pollution in the coastal area. For those permitted point source discharge facilities that currently are not in compliance with state water quality laws, it is expected that the SWIM project will help to coordinate efforts necessary for bringing the pollution sources into compliance.

B. State, Regional And Local Regulatory Programs To Reduce Estuarine Pollution

1. Department of Environmental Regulation (FDER)

State pollution regulation is largely vested in the Florida Department of Environmental Regulation (FDER). The FDER regulates dredge and fill of waters of the state and adjacent wetlands. Dredge and fill permitting is done in accordance with similar federal permitting by the U.S. Army Corps of Engineers. FDER also regulates discharges of pollutants into natural or artificial bodies of water. FDER establishes waster quality standards, sets minimum treatment requirements, issues permits, licenses operations of wastewater treatment plants, administers construction grants for sewage treatment plants and regulates discharges of stormwater. A special permit program can be used to obtain long term permits for dredging deep water ports.

FDER, as a result of the Area of Critical State Concern designation, operates a local field office in Apalachicola to administer dredge and fill and stormwater management permitting within the City. FDER will continue to maintain a local permitting office within the city after designation ends.

FDER and the Northwest Florida Water Management District regulate the withdrawal, diversion, storage and consumption of water, with the water management district responsible for roost of the permitting and operational aspects.

In 1979, the State of Florida designated the lower Apalachicola River an Outstanding Florida Water and included the upper river in 1983. The OFW designation was put in place to preserve the ambient water quality at the time of designation and would not allow any degradation. Stringent standards are applied regarding proposed alterations or potentially damaging activities planned for these waters.

2. Department Of Health And Rehabilitation Services (HRS)

HRS, through the regulations found in FAC 10D.6, administers septic tank installation in the City. HRS also locally administers the Superfund Program to check wells for groundwater contamination.

3. Department of Natural Resources (FDNR)

The department of Natural Resources (FDNR) is also involved in controlling estuarine pollution. The FDNR is responsible for selling or leasing state-owned submerge lands if the sale or lease is "not contrary to the public interest." The proposed use of the conveyed or leased submerged land must not "interfere with the conservation of fish, marine or wildlife, or other natural resources." Deeds or leases may contain restrictions on dredging and filling.

The FDNR is responsible for managing the Apalachicola Bay Aquatic Preserve, established in 1969 by the State. Special requirements pertaining to the sale or lease of state-owned submerged land with the aquatic preserve and all development proposed for the preserve must meet strict state land and water use restrictions. A management plan for the Apalachicola Bay Preserve has been created.

4. Department Of Community Affairs (DCA)

In 1985 the State of Florida declared much of Franklin County, including all of Apalachicola an Area of Critical State Concern due to the development pressures being exerted. The ACSC designation, which is administered by a local DCA field office, requires that the City adopt various land use ordinances designed to promote strict growth management practices.

5. Local Government

The City of Apalachicola has passed several new ordinances and updated others in order to comply with the provisions of the above mentioned act. To date, the city has adopted, among others a subdivision ordinance which regulates subdivisions in an environmentally responsible manner, a septic tank abatement ordinance which outlines procedures for correcting faulty septic systems and which requires connection to the1 sanitary sewer system when it is made available.

The City of Apalachicola has also incorporated into its land Development Code a "Site Plan Review and Stormwater Management Plan". The ordinance requires a Chapter 17-25 stormwater permit prior to issuance of a local building permit. Within the Special Waterfront District, all development requires a stormwater management plan even if exempt from a Chapter 17-25 permit. The Special Waterfront District is coterminous with the coastal area.

6. An Analysis

The framework for managing the water and land resources in Franklin County and the City of Apalachicola has, over the years, evolved into a complex network of local, state, regional and federal regulations directed by several regulatory agencies which have rules that often overlap and sometime are in conflict with each other. In addition to the conflicts in regulations, there has been very little coordination between local government and the state regulatory agencies with

regard to permitting. This has resulted in situations where state government permits a project in violation of the local government land use or flood hazard regulations. Or in some instances, local approval is obtained for a project that violates state water quality or submerged land lease regulations. Situations like this have resulted in frustration on the part of the city for state regulatory agencies and has in many more instances resulted in confusing and distrust on the part of residents for important environmental and land use regulations. Frustration with the lack of coordination between the agencies and local government has often resulted in a lack or regard on the part of some developers for any of the laws. This adds to the resentment of those citizens who comply and are delayed by the bureaucratic maze of permitting requirements.
It is recommended that an intergovernmental program be established within the City to coordinate state, federal and local regulatory programs and permits.

XI. Natural Disaster Planning

Apalachicola does not currently have a local peace time emergency plan. The requirements of this element will be met by analyzing the Franklin County plan, and on the 1984 Hurricane Evacuation Plan prepared by the Apalachee Regional Planning Council.

For the purpose of this element, the hurricane vulnerability zone represented on (map 10) consists of the category 3 storm surge zone. This boundary will be used in this section to identify the hurricane evacuation routes and projected evacuation route needs. The regional planning council's storm surge zones (B=Category 3,4 & 5) will be used in identifying population evacuations, evacuation shelter needs and transportation needs.

The Coastal High Hazard Area is identified on map 9. As required pursuant to chapter 9J-S.O03 F.A.C. this area comprises all land in Apalachicola which falls: 1. Seaward of the Coastal Construction Control Line established by the Florida Department of Natural Resources and Federal Emergency Management Agency designated V zones. These areas include all areas within Apalachicola's jurisdiction where public facilities have been damaged or undermined by coastal storms.

The following inventory and analysis of natural disaster planning concerns is organized as follows:

1. Vulnerability Analysis
2. Population evacuation
3. Shelter inventory and demand
4. Transportation analysis
5. Special need groups
6. Population projection impacts on natural disaster planning
7. Measures to maintain reduce evacuation times
8. Intergovernmental Coordination

1. Vulnerability Analysis

An analysis of the storm surge vulnerability for the B zone (Category 3) is as follows:

Category 3: The presence of a well developed barrier island system will provide protection to the coast of Apalachicola during a Category 3. The SPLASH II model does not carry storm surge characteristics past the point of landfall. Because of this limitation, it is difficult to predict the effects of open water, such as the Apalachicola Bay, on the storm surge. However, some flooding is likely in low-lying areas south of Highway 98, including waterfront areas in the City of Apalachicola. Low points in roads are susceptible to washout.

The effects of a Category 3 storm would be
similar to a Category 1 or 2 hurricane. Low-lying areas in Apalachicola are in the Category 3 Hazard Zone.
Storm surge adverse affects could be experienced from 2. 5 to 11.O hours prior to landfall. Duration times for storm surge flooding vary from two hours to twelve hours. Gale force winds continue to batter the area for up to 13 hours.

1. Population Evacuation

The most recent countywide hurricane evacuation study was prepared by the regional planning council in 1984 and in many Instances does not break down information by municipality. Following the summation of the latest study, the impacts of future population growth on hurricane evacuation will be projected.

Using the SPLASH computer model, the RPC projected storm surges for the "category one" through "category five" hurricanes. Within the hurricane vulnerability for category 3, there are 2,52O people.

Franklin County's vulnerable population based on the five hurricane categories is shown in Table 13. Within the region, Franklin County has one of the largest population vulnerable to hurricanes. For a category 3 storm, approximately 2,520 persons will need to evacuate, Including all mobile home residents in the City and all areas adjacent to U.S. Highway 98 and the low lying areas of Apalachicola.

Table 13: HURRICANE VULNERABLE POPULATION IN FRANKLIN COUNTY AND APALACHICOLA

	Category 1	Category 2	Category 3	Category 4	Category 5
FRANKLIN	6, 29O	7,498	7,559	7,573	9,982
APALACHICOLA*	2,093	2,499	2,520	2,524	3,327

Source: 1984 Regional Planning Council, Hurricane Evacuation Study
*Estimated as a percentage of Franklin County.

Two special need groups should be mentioned. The first group is the elderly. A large proportion of the 65 and over age group require assistance in evacuating potential flood areas usually because of restriction on their operation of automobiles.

The other special need group is patients of medical institutions. There is one hospital and a nursing home in the city. Weems Memorial Hospital and the nursing home are located in the hurricane vulnerability zone. None of the buildings are vulnerable to storm surge since all of the buildings are above the predicted flood heights; however, the area surrounding these facilities may flood resulting in the disruption of road access and utilities.

In the past. Franklin County District school buses have been used to evacuate hospital patients and nursing home residents to nearby less vulnerable facilities. This action has primarily been handled by the county's disaster planning staff. There is need for a more specific plan and coordination with Franklin County and the Franklin County School District.

2. Shelter Inventory And Demand

Evacuees have several options available when departing a hazard area. Often they choose to stay in the homes of friends and relatives. Some evacuees would be expected to register at hotels or motels in areas away from the severe effects of the storms. In the cases of tourists, two common responses were (1) to either return home or (2) travel to a less weather battered area. This section, however, focuses on the evacuees choosing to seek shelter in public buildings.

A behavioral survey was conducted by the RFC to provide some indication of shelter types which could be utilized during a hurricane. The percentage of persons Intending to use public shelter is reproduced below in Table 14.

Table 14 Persons Seeking Public Shelter (percents)

	St. Marks/Panacea	Alligator Pt./Carrabelle	St. Geo./Eastpoint/ Apalachicola	Port St. Joe		
	(N=72)	(N=85)	(N=121)	(N=9O)		
Public Shelter	28% +11	21% +9	21%+7	38 +10		

These figures, used in combination with the vulnerable population figures found in Table 15 provide the estimated number of persons needing shelter. Table 15 estimates the number of persons requiring shelter during a hurricane for Hazard/Evacuation Category 3.

Table 15
Persons requiring Shelters in Franklin County
(including Apalachicola) based on Hazard/Evacuation Category 3 Hurricane.

County	Total vulnerable	% Who Would	Those	Those needing

	Population	Evacuate (Approx.)	Evacuating	shelter
Franklin	7,559	80%	6, 047	1, 512
Apalachicola	2,520	80%	2, 016	504

Facilities - General

Franklin county has identified several shelters which could be used in the event of natural or nuclear disaster. Most of the shelters are located in Apalachicola. The requirements of natural disaster shelters are somewhat more flexible than the more stringent protection needs of nuclear events. However, in areas closest to the hazard area, shelters' must be elevated above the storm surge level and in all cases must be able to resist the forces of high winds.

Of the shelters listed in Table 16 and Map 11 for Apalachicola, the following primary shelters were found to be in the, surge vulnerable areas for the specified vulnerability level:

Vulnerability Level A
Franklin County Courthouse
U.S. Post Office, Apalachicola
Red Cross Center

Vulnerability Level B
Apalachicola High School
Chapman Elementary School
Old Chapman Auditorium

The hurricane evacuation study identified six primary shelters in the City. These six shelters have a total capacity of -1,725 people, assuming 40 square feet per person. As is indicated by Table 15, this number of shelters is technically sufficient to meet the evacuate needs of the entire County. However, most of the evacuation centers are located within the two storm surge vulnerability areas.

Vulnerability to winds disqualifies many rooms in commonly used public shelters due to large expanses of windows often present in many public buildings. Most civil defense directors in the region agree that public schools are not an ideal shelter type. An excessive amount of window area is the primary reason for this opinion. However, during a natural disaster event it is often the case that schools have not been severely affected by the storm. As a result, school should be allowed to continue as usual. However, if the school was to be used as a shelter, it would be difficult to continue conducting classes while evacuees are occupying the halls, gymnasiums and cafeterias, identification of alternative shelters should be an important goal of Civil Defense Directors and others in the field of providing shelter to the public.

Another factor affecting the shelter provisions of the sites in Franklin County is the hospitality of the area's churches and homes. Churches generally have kitchen facilities and thus provide suitable locations for temporarily sheltering evacuees. The pastor of the church and local church volunteers are eager to work as shelter personnel.

In past hurricane events in the region, it has been the experience of the civil defense directors of the Apalachee Regional Planning Council member counties that the majority of the evacuees seeking shelter tend .to go to the non-coastal Counties, specifically Leon, Gadsden, Liberty and Calhoun. This is likely to be expected during future hurricane events as indicated in the behavioral survey conducted by the Regional Planning Council. Nearly 46 percent of those saying they would evacuate indicated they would evacuate to destinations in either Leon, Gadsden, Liberty, Calhoun, or Jackson. Over 25 percent chose Tallahassee as their probable destination. These figures are not disaggregated, however, to indicate the selection of public shelter destinations as opposed to other, non-public destinations.

Table 16: Shelter Inventory - Apalachicola

Name of Shelter-Location	Elevation	40 Sq. Ft. per person capacity
Red Cross 89 - 11 Street Apalachicola	10 ft.	550
Apalachicola High School 190 - 14 Street Apalachicola (Frank Stephens contact person) Location S-T-R 3 or 10-9S-8W	10 ft.	200
Franklin County Courthouse Apalachicola (Lee Rivers - contact person) Location S-T-R 16-9S-8W	10 ft.	400
Chapman Elementary School 155 Ave. E Apalachicola (Rose McCoy - contact person) Location S-T-R 3 or 10-9S-8W	10 ft.	200
U.S. Post Office Commerce Street Apalachicola (Judy Hall - contact person) Location S-T-R 16-9S-8W	10 ft. 9000 (estimated usable sq. feet)	225
Old Chapman Auditorium Apalachicola	10 ft.	150
	Total	2,045

Source: Regional Planning Council, Hurricane Evacuation Study ,1984

3. Transportation Analysis

During a hurricane evacuation effort, it is widely recognized that a significant number of vehicles have to move across a road network in a relatively short period of time. This number of vehicles can be large for densely populated areas and varies depending on the storm intensity and direction of approach to the region. Vehicles leave the road network depending on both the planned destination of evacuees and the availability of acceptable destinations (number of Red Cross shelters, hotel/motel units and population in non-flooded areas). Vehicles move across the road network at a rate relative to the demand for various roadway segments and the ability of the segments to handle a certain volume of vehicles per hour.

a). Transportation & Evacuations Constraints

Franklin County is traversed by a limited number of rural two-lane county and state roads that would carry vehicular traffic during an evacuation. Roadways providing northward access away from the coastal areas are extremely important to the safe evacuation the surge vulnerable population. These roadways include State Roads 65 and 67. In addition to these roadways, US 319 and US 98 are major arterials running primarily east and west through the county. State Road 20, US 231 and 1-10 would carry the majority of inter-regional traffic.

Field surveys conducted (in inclement weather by the Regional Planning Council) revealed that many critical evacuation roadways are low in elevation, in substandard condition, and subject to poor drainage. Due to surrounding marshes, roadway shoulders are soft and not suited to vehicular movements. Lateral clearances (distance between edge of roadway lane and nearest obstruction) on several bridge structures are extremely limited. Evacuation should be completed before the arrival of gale force winds and heavy rains to allow use of the region's limited roadway network. US 98, SR 65 and SR 67 throughout Franklin County should be monitored for flooding conditions as a hurricane approaches. Map 12 shows the principle evacuation routes.

In the past, damage to the roads have occurred on US 98, GIA, and SR 370 in Franklin County. Nearly all of US 98 in Franklin County is subject to flooding based on the 100 year storm calculated for the Federal Emergency Management Agency's Flood Insurance Studies (i.e., FIRM, et.). State Road 65 is likely to be used to transport persons away from the coast, however, "it is susceptible to storm surge at its southern portion. Both State Road 65 and State Road 67 are likely to experience flooding due to excessive rains.

Table 17
Roadway Vulnerability Analysis Franklin County

Highway	S-T-R	Approximate Location	Elevation	Source
US 98/10	14-9S-10W	Gulf County/Franklin County boundary	8 feet	USGS
	8-9S-9W	Between Thirteen mile and Eleven mile	6 feet	USGS
	9-9S-8W	West of Apalachicola	8 feet	USGS
	10-9S-8W	Two miles at Carls creek	8 feet	Local

	31-8S-6W	Eastpoint	5 feet	USGS/DOT
	22-8S-6W	Green Point	9 feet	USGS/DOT
	23-8S-6W	Between Green Point and Marsh Point	7 feet	USGS/DOT
	4-8S-5W	East of Royal Bluff	9 feet	USGS/DOT
	36-7S-5W	Carrabelle Lighthouse	9 feet	USGS
	30-7S-4W	Carrabelle Beach	8 feet	USGS
	14-7S-4W	SW of Camp Gordon Johnson and Lanark V.	9 feet	USGS
	8-7S-3W	East of Lanark Village	2.3 meters	USGS/DOT
	35-6S-3W	FSU Marine Laboratory	2.4 meters	USGS/DOT
	30-6S-2W	West of St. Teresa	2.0 meters	USGS
	26-6S-2W	East of St. Teresa	2.7 meters	USGS
US98/A30		With exception of the area from Gulf County -Franklin County boundary east to just east of Hwy 385 and west of Apalachicola Airport nearly all of Hwy 98 is in the 100 year flood zone	-	FIRM
SR 65	34-7S-6W	Cash Creek	3 feet	USGS/DOT
	32-7S-6W	West of Sandbank Creek	9 feet	USGS
	31-7S-6W	East of Whisky George Creek	7 feet	USGS/DOT
	36-7S-7W	Wiskey George Creek	6 feet	USGS/DOT
SR 319 to Sopchoppy	24-6S-3W	South of St. James Fire Tower	-	FIRM
SR 65		With the exception of occasional stretches on Hwy 65 most of the Hwy is in the 100 year flood zone	-	FIRM
GIA	T9S-R6W	Road to bridge at Eastpointe in 100 year flood zone		DOT/FIRM
CR370		Alligator Point		DOT
SR 319	T6S-R3R			DOT

Sources: USGS - W.S., Geological Survey 7.5 minute Quadrangle Topographic Maps.
FIRM - Federal Emergency Management Agency, flood Insurance Studies, flood Insurance Rate Maps.
DOT - Regional maintenance supervisor.
Local- County and Municipal staff.

Road areas below ten feet in elevation are identified in Table 17. Table 17 also lists inland roads which would be flooded during a 100 year storm event. Basically, the area west of Apalachicola

Airport westward to the Franklin County-Gulf County boundary is the only stretch of US 98 in Franklin County exempt from the 100 year storm.

As a result of the heavy reliance on US 98 and the low bridge access between Apalachicola and Eastpoint on the John Gorrie Bridge and between St. George Island and Eastpoint on GIA it is imperative that evacuation from these areas occur in the early stages of the warning process.

b) Evacuation Routes

In order to determine the routing of evacuations traffic in Franklin County, a representation of the evacuation network roadway system was developed by the Regional Planning Council. A traditional "link node" system was developed to identify roadway sections. Nodes are used to identify the intersection of two roadways or changes in roadway characteristics. Links are the roadway segments as defined by the nodes when connected. Each link is identified by a pair of node numbers. Another type of node, represented by an open circle, identifies the geographic center of activity within an evacuation zone. When connected to the evacuation network by a dashed line, these points indicate where evacuating vehicles enter the network by a dashed line, these points indicate where evacuating vehicles enter the network.

RPC used to calculate the assigned volumes by link and service volumes (capacities) developed by link, a series of volume to capacity ratios for each vulnerability level. Those links with the highest volume to capacity ratio were then identified as the critical links for Franklin County. Critical links are those roadway segments having the greatest travel demand during a hurricane evacuation relative to the segments' ability to handle a certain number of vehicles per hour. The critical links by vulnerability level for Franklin County areas follows:

Franklin County: John Gorrie Bridge (flooding level A)
SR 65 south of Liberty County line (flooding level B)

Map 14 illustrates the critical links described above for Franklin County as well as the other counties on the RFC study area. Since critical links are the most constrictive points in the evacuation network, traffic must be metered through these segments to estimate clearance times.

c) . Evacuation Times

Performing an analysis at Franklin County's critical links for each vulnerability level produced on estimated clearance time for Franklin County of between 5 to 11 hours. Table 18 provides all calculated clearance times.

Table 18
CALCULATED CLEARANCE TIME
Franklin County

Response Curve	**A**	**B**

A Quick Response	5	5 1/2
B Quick Response	8	7 1/2
C Slow Response	11	10 1/2

Use of Clearance Times in Issuance of an Evacuation Order

Clearance time is one of two major time components involved in issuing an evacuation order. Clearance time must be added to pre-landfall hazard time to ensure that the evacuees can reach safety before the arrival of hazardous conditions Tables 19 through 23 depicts the relation of clearance time and pre-landfall hazard time for areas in Franklin County. The Regional Planning Council combined the results of the transportation analysis and the hazard analysis data to arrive at evacuation order time for each County for particular storm situations. The direction the storm travels has a large effect on the pre-landfall times, the tables which follow specify storm direction.

Table 19
Hurricane Evacuation Order Times for Vulnerability Level A For Hurricanes Moving to the North

Representative Cities and Towns	Pre-Landfall Hazard Time		Clearance Time based on Response Curve		Time needed for Evacuation (Range)
Apalachicola	10	5	8	11	15-21

Table 20
Hurricane Evacuation Order Times for Vulnerability Level A for Hurricanes Moving to the Northwest

Representative Cities and Towns	Pre-Landfall Hazard Time		Clearance Time based on Response Curve		Time needed for Evacuation (Range)
Apalachicola	12.5	5	8	11	17.5-23.5

Table 21
Hurricane Evacuation Order Times for Vulnerability Level A for Hurricanes Moving to the Northeast

Representative Cities and Towns	Pre-Landfall Hazard Time		Clearance Time based on Response Curve		Time needed for Evacuation (Range)
Apalachicola	8.5	5	8	11	13.5-19.5

Table 22
Hurricane Evacuation Order Times for Vulnerability Level A for Hurricanes Moving to the West

Representative Cities and Towns	Pre-Landfall Hazard Time		Clearance Time based on Response Curve		Time needed for Evacuation (Range)
Apalachicola	9	5	8	11	14-20

Table 23
Hurricane Evacuation Order Times for Vulnerability Level A for Hurricanes Moving to the East

Representative Cities and Towns	Pre-Landfall Hazard Time		Clearance Time based on Response Curve		Time needed for Evacuation (Range)
Apalachicola	8	5	8	11	13-19

d). Evacuation Analysis.

Evacuees from surge vulnerable zones should use the nearest logical north-south corridor to leave the area at risk regardless of whether going to a Red Cross shelter or some other destination. Population at-risk living in western Franklin County should use SR 65 and avoid traveling through Gulf County to SR 71. Shelters agreements should be arranged between Calhoun and Franklin County residents in Blountstown. This structuring of traffic movement will ensure the use of manually controllable intersections and reduce traffic conflict at many north-south arterial intersections. This arrangement will also take pressure off the US 319 route into Wakulla County.

4. Special Needs Groups

Two special need groups should be mentioned. The first group ii the elderly. A large proportion of the 65 and over age group (primarily located in the Lanark Retirement Village in eastern Franklin County) require assistance in evacuating potential flood areas usually because of restriction on their operation of automobiles. In 1986, 13.9 percent (1,185) of the county's population was estimated to be 65 and older.

The other special need group includes patients of medical institutions. There are several hospitals and nursing homes in the County. Weems Memorial Hospital in Apalachicola and three nursing

homes (one in Apalachicola) are located in the hurricane vulnerability zone. None of the building are vulnerable to storm surge since all of the buildings are elevated above the predicted flood heights; however, the area surrounding these facilities may flood resulting in the disruption of road access and utilities.

5. Population Projection Impacts On Natural Planning

a). Evacuation Population

This comprehensive plan is based on Census-based projected resident population of 9,400 in 1995 and 9,600 in 2000. However for the purpose of determining population projections in the vulnerable areas of Franklin County, housing unit data as opposed to census division data will be used. This method was chosen, as mentioned earlier in this section, so as to provide better estimates of the maximum population which would need to be evacuated prior to arrival of a hurricane. Using housing information accounts for seasonal population. The future land use element indicates that past trends in growth will continue throughout the forecast period. Therefore, the population increases were assigned to the evacuation districts based upon the current proportion of the population contained within each evacuation district and is multiplied by an annual growth rate of 1.9 percent (see Land Use Element).

Table 24
Projections of Population Requiring Evacuation of Franklin County

Storm Surge Category	1990	2000
1	7,611	9,209
2	9,073	10,978
3	9,146	11,067
4	9,163	11,087
5	12,084	14,622

b.) Shelters

Table 25 gives the number of evacuees requiring public shelters in 1900 and 2000. These projections were developed using the number of projected evacuees in Table 24 and applying the Regional Planning Council's formula (21 sq. x 7). The table assumed no change in the percentages evacuees leaving the county and of the remaining evacuees expected to use public shelters.

Table 25
Projection of Public Shelter use for Franklin County,
1990 and 2000

Storm Surge Category	1990	2000
A	1,912	2,313

B	2,545	3,078

In order to accommodate the additional people requiring public shelter by 2000 for an A storm surge an additional 588 spaces will be needed.

c). Clearance Times

Hurricane evacuation times will increase as population increases. It is reasonable to assume that the time needed for evacuation through 2000 will fall within the range given for each area and conditions listed in Table 19 through 23. This is assuming that the distribution of new residents will be the same as existing residents.

d). Special Needs

The major population group requiring special assistance in a hurricane evacuation will continue to be the elderly.

6. Local Government Measures To Maintain/Reduce Evacuation Times

The 1988 completion of the John Gorrie (U.S. 98) River & Causeway bridge, which span the Apalachicola River and Bay, represented a significant improvement to the road evacuation network in Apalachicola. The bridges were constructed such that the road ends connecting to it are elevated higher than the original design to alleviate flooding potentials. The bridges are wider than the original which will help expedite the evacuation process as well.

Additionally, the State Department of Transportation is currently constructing rock retentions along the shoreline of U.S. 98 between Eastpoint and Carrabelle to reinforce the highway against future storm damage. Although this is not within the City limits, it is a measure that will help reduce evacuation times countywide and represents a measure to reduce road flooding potential.

As the roads in Apalachicola are not projected to exceed accepted LOS capacity, the Traffic Circulation Element proposes no improvements to the road network which could effect hurricane evacuation. However, there are several road modification options available to the City for improving hurricane evacuation. They are as follows:

1) Bay Avenue, which runs parallel to Apalachicola Bay from 6th to 13th Street is probably the most vulnerable flood-zone road within the City. Measures should be taken to block traffic from traveling this road, directing traffic instead up each street to Avenue B or Avenue C for evacuation purposes.
2) Traffic should be discouraged also from traveling along Water Street which runs parallel along the Apalachicola River.
3) The use of traffic barriers/ and lane usage modifications should be used as necessary to restrict traffic from these two roads in a hurricane evacuation

situation. Physical barriers should be used primarily to supplement manual efforts to discourage long through movements on US 98 as well. Physical barriers should be used to channel traffic and prevent unnecessary turning conflicts. Lane usage modifications must involve close coordination between civil defense staff and local agencies involved in traffic control. Generally, because of the complex and intricate interrelation of each roadway continued in the evacuation network, it is difficult to realize a savings in clearance time by changing flow direction on roadway lanes. This lack of savings in clearance times is due to traffic operations problems, the need for additional manpower that is already scarce, and the need to allow emergency vehicles to travel against the main flow of traffic.

Additional measures could include the following:

1. Prioritize roadway maintenance and construction projects on the identified critical links and on major evacuation routes.

2. Require all new mobile home parks in the City that are located outside the hurricane vulnerability areas to construct and maintain a private shelter for residents of that park. This will significantly lessen the demand for public shelter spaces and reduce the number of vehicles on the regional roadway network.

3. Assist the Red Cross in identifying more public shelters within Apalachicola to reduce the number of vehicles traveling through Apalachicola as they attempt to leave the region.

4. Evaluate any zoning changes in evacuation level A that would increase the residential densities in those areas for their impact upon evacuation ability.

5. Implement the State's Hurricane Preparedness Rule (9J-2.0256) which assesses the public shelter impact of large-scale development.

Implementation of these measures may maintain or reduce current evacuation (clearance) times. Close coordination between all involved in the evacuation process is essential for any regional evacuation procedure.

7. Intergovernmental Coordination

Intergovernmental coordination is more important in hurricane evacuation planning and operations than it is in perhaps any other facet of planning. By their very nature, hurricane evacuation planning and operations are regional procedures thereby requiring a close association between the Franklin County municipalities, planning agencies and service organizations. Below is a list of the primary participants in hurricane evacuation planning and operations.

a) County Municipalities, Planning Agencies And Service Organizations

1. National Hurricane Center (NHC)

The NHC forwards information on the characteristics of the tropical disturbance to offices and emergency response agencies throughout the Tampa Bay Region.

2. National Weather Service (NWS). Apalachicola Area Office

Located in Apalachicola Florida, this office receives statements from National Hurricane Center and issues more specific information on local weather conditions to emergency response agencies.

3. Governor of Florida

The Authority to order an evacuation from an approaching hurricane is conferred to the Governor by subsection 252.36 (5) 9e) Florida Statues stating that the Governor may: "Direct and compel the evacuation of all or part of the population from any stricken or threatened area within the state...."

4. Florida Division of Emergency Management (DEM)

This division of the Department of Community Affairs is responsible for directing and coordinating disaster mitigation, preparedness, response and recovery activities of the state.

5. Franklin County Department of Civil Emergency Services

The same power to order and evacuation is delegated to each political subdivision by the state as described in subsection 252.38 (6)(e) and Executive Order 180-29. County evacuation orders are based on decisions and plans produced by the County department.

6. American Red Cross

This agency identifies and operates the public shelters and related relief efforts.

7. Apalachicola Regional Planning Council (ARPC)

This agency is responsible for producing the HURRICANE! public information tabloids distributed throughout the region and the Regional Hurricane Evacuation Plan. The Regional Emergency Management Committee, of which the County is a member, meets to review/ and coordinate local emergency operations.

8. City of Apalachicola

The City coordinates all City departments to respond to evacuation and recovery procedures.

9. Television. Radio and Print Media

The media disseminate pertinent planning, evacuation and recovery procedures.

10. Law Enforcement Agencies

They assist in conducting evacuations, controlling access, patrolling secure areas and maintaining traffic flow.

XII. Hazard Mitigation

Hazard mitigation measures are in place to reduce the probability of exposure to hazards. Included are guidelines to manage development and protect life and property through building codes, land use, flood prevention, hurricane evacuation planning and other activities. These activities fall into two government functions, emergency management which is operations oriented and development management which focuses on longer-term development conditions.

Emergency management operations are described in the Franklin County Emergency Operations Plan. The plan is used whenever the City must prepare for and/or react to any natural or man-made disaster. It is oriented to the disaster. It is oriented to the disasters which the City is most susceptible to, namely hurricanes, flooding and tornadoes.

Management of development generally relies upon floodplain management measures contained in zoning, subdivision regulations, building codes, environmental permitting and City policy to reduce the risk of storm damage. Construction is regulated under the Standard Building Code and requirements of the National Flood Insurance Program {NFIP).

A. Apalachicola Building Code

The Flood Damage Prevention ordinance, contained in the Apalachicola Land Development Code, regulates coastal construction in all areas of special flood hazard, consistent with Chapter 161 F.S. and the National Flood Insurance Program (NFIP). The ordinance refers to the FEMA maps in defining the coastal high hazard area as-the velocity zone and the area of special flood hazard as the 100 year flood zone, which includes all of the area in Evacuation Level A. Special construction standards are required for new service areas vulnerable to flooding. The standards are intended to minimize impacts on natural features and allow structures to withstand the forces of the 100 year storm.

Variances to the flood requirements are approved by the Board of Adjustment, subject to certain qualifying conditions that justify the request for variance. The City maintains a record of all appeal actions and reports any variances to the FEMA, upon request. The City's level of compliance with the NFIP criteria was last audited by FEMA in 1968. Based on their audit,

FEMA reported that the City was doing an acceptable job of flood plain management. Failure to substantially comply with the NFIP can result in a community being put on probation, with the liability of being suspended form the program if deficiencies remain uncorrected.

The City began regulating the construction and alteration of seawalls in 1987, with passage of riverfront construction requirements contained in the City code. A permit from the applicable State agencies prior to the issuance of a City permit is required.

B. Zoning Regulations

The zoning classification regulate the character of development and thus the potential for large scale damage. First, the type of uses permitted correspond with the level of risk. Heavy industrial uses with a high risk for hazardous substances or activities are not located in the area susceptible to a Category 1 hurricane. Secondly, the density of residential uses is considered.. Low density uses are the predominant zoning classification in the Level A area.

The zoning ordinance also provides for bringing non-conforming structures and uses of land into compliance with zoning requirements. However, zoning policy governing non-conforming activities do not cover restrictions on flood elevations. Compliance with the zoning ordinance is limited to restrictions on area, lot coverage, height or other characteristics of the zoning district. Thus only when substantial improvements occur, under the provisions of the building code, are structures elevated, flood-proofed or certain uses eliminated reducing the potential for damage and providing conformance with coastal construction standards.

C. Subdivision Regulation

Subdivision regulations contained in the City code reduce the risk of flood damage by requiring plat information for review of marshes, preservation areas and other conditions affecting the development potential of the site.

D. Environmental Programs

Protection of coastal vegetation minimizes flood and erosion hazards and helps buffer development from the direct impact of storms. Setbacks for waterfront development and preservation of coastal vegetation are required under the zoning, site plan process, and State and Federal environmental permitting.

XIII. Post-Disaster Redevelopment

The purpose of a local post-disaster redevelopment plan is to outline procedures which can be used following a natural disaster. After a disaster, reconstruction roust occur quickly and leave the community safer from future hazards. Information and issues that will need to be looked at regard repair and reconstruction policies and potential sources of disaster assistance funds.

Following Hurricane Kate in 1985 the FEMA paid approximately $400,000 to repair or replace damaged public property. Private losses were substantially greater.
Many federal, state and regional laws and policies govern post disaster redevelopment. The following Florida statutes and terms defined therein do not apply to the coastal zone of Apalachicola: Section 161.052 F.S.(fifty foot setback); S. 161.053 (Coastal construction control line - CCCL and thirty year erosion control line), S.161.58, F.S. (CCL); S. 380.26 F.S. (coastal building zone); s. 380.27 (coastal barrier island).

Structures constructed below required flood elevations and those located in the velocity zone have the highest potential for damage. Because of their susceptibility to hurricane force winds, mobile homes are also at high risk of storm damage. Standards for anchoring and blocking mobile homes are contained in the City's Flood Hazard Ordinance. Further, the flood ordinance prohibits the placement of mobile homes in the velocity zone.

A. Structures Below Base Flood Elevation

Most of the damage from hurricanes occur in areas with structures built prior to, and not in conformance with, present local, state and federal standards. Waterfront homes constructed on grades below base flood elevation were built before the 1977 flood insurance rate map (FIRM) in which areas of special flood hazard in the City were identified by the Federal Emergency Management Agency.

In accordance with the flood prevention ordinance, these structures could be re-built to pre-disaster conditions provided that the cumulative cost of modifications during any one year do not exceed 50% of current market value. Improvements exceeding the 50% threshold are termed substantial improvements and would necessitate conformance with more recent and stricter building standards approved in 1983 and amended in 1988.

The substantial improvements criteria was .not in place until 1988 and therefore its usefulness in upgrading properties has not been tested by hurricanes. However, based on the number of residential permits for reconstruction after Kate, local building officials suggest that the criteria would have had minimal impact in upgrading structures and thereby mitigating flood impacts. Except for seawalls, most of the private property damaged from Kate was to interior contents and yards rather than structural damage. The substantial improvements criteria only applies to structural damage, so that even homes that had interior flooding of one (1) foot or more by tidal water would not have been required to be flood-proofed or elevated to base flood elevations.

Residential areas of Apalachicola south of Bay Avenue are at risk to storm damage due to overall low elevations and susceptibility to coastal flooding. As discussed in the section on historical damages, Bay Avenue has some the lowest residential elevations in the City.

B. Land Acquisition

There are two federal programs that provide funds for acquisition of insured properties that have been seriously damaged by flooding or undermined by erosion, so as to be in imminent danger of collapse or subsidence. Section 1362 of the National Flood Insurance Act empowers the Federal Insurance Administration (FIA) to purchase insured properties, move the damaged structure and transfer the land as open space to a state or local government agency. The Housing and Community Development Act of 1987 provides for claim payments to relocate or demolish buildings subject to "imminent collapse or subsidence" as a result of erosion.

Federal assistance under both programs is limited and reserved for special situations where damage are severe or imminent and the property owner and local government agree to participate. Certain properties in Apalachicola that have a history of damage may be appropriate for purchase in a post disaster situation. Of the two federal programs, Section 1362 may offer the greatest potential in terms of qualifying under the community selection criteria. Records of interior flooding should be noted on building plans to control added investment in flood prone locations and to establish a historic record of flood damage. The records could be used as additional criteria for defining substantial improvements, reviewing variances and in ranking properties for purchase.

The removal of purchased properties from the tax rolls would have an economic impact on the City that will need to be considered as part of any acquisition program.

C. Structures in the Velocity Zone

The Land Use Plan assigns low density residential (less than 6 units per acre) to a majority of the area that would be affected by a Category 1 & 2 hurricane, referred to as the Level A zone. High density development (up to 16 units per acre) does not exist , within the CHHA.

Other than a 20 foot setback from mean high water along the bay^ and a 10 foot setback from the river required in the City's land development regulations, the City does not have any reconstruction policy which would prohibit the re-building of structures. Reconstruction in the V zone after a disaster would follow the provisions of the flood ordinance (i.e., conformance with building standards) and be permitted at the residential densities allowed by the land use plan.

Economic issues, such as the removal of certain property from the tax rolls, would need examination prior to rezoning after a disaster. Social issues would involve the displacement of residential populations. The supply of comparable rental property would also influence relocation. Regardless of the redevelopment policy, substantially damaged structures are likely to be uninhabitable producing a need for alternative housing.

The municipal liability in establishing alternative zoning after a disaster will also need to be examined. Downzonings are the most common source of legal challenge to a community's zoning ordinance, sometimes involving a request by developers for monetary damages.

However, according to some legal experts in the field of natural hazards, municipal liability is also incurred where scientific data clearly indicates a natural hazard may be liable due to a failure to adopt land use regulations that would prevent or mitigate losses by the property owner. (Zoning News, American Planning Association, March, 1986). It may be arguable that information from the federal flood insurance rate maps and hurricane studies application of stricter land use regulations, particularly in the aftermath of a disaster.

XIV. Coastal High Hazard, Inventory And Analysis

The Coastal High Hazard Area is defined under 9J-5 FAC to be those areas which have historically experienced destruction or severe damage or are scientifically predicted to experience damage from rapidly moving or storm driven water.

The coastal high hazard boundary for Apalachicola extends south from the John Gorrie Bridge along Water Street, around Battery Park and west along Bay Avenue to 13th Street. This area includes the velocity zones that fall within the City and includes most of the area which have experienced historical storm damage. (See map 9)

A. Historical Damages

The damage survey reports prepared by the City for the FEMA are the most complete documentation of historical damages to public properties resulting from storms. Hurricane Kate is the only storm for which the City has applied for disaster assistance to repair damaged public facilities.

Damage to infrastructure from hurricane Kate's storm driven water resulted in municipal repairs to repair fishing piers at Battery Park and Layfette Park, repairs to the little league ballpark, finger piers at Battery Park Marina, and a dock at Marina Point. Flood damages occurred to the interior contents of the City Fire Station, City Hall and the Public Library. (Damage Summary Report, City of Apalachicola, 1988)

Private damage was also extensive. According to FEMA records, Apalachicola suffered in damage to private business and residences.

B. Projected Conditions

The predictive modeling and hazards associated with each category storm are described in the hurricane evacuation planning section.

C. Vulnerability Analysis

Lined by the barrier islands (St. George & Little St. George), the sheltered bay shoreline in the City is not subject to the direct wave action and erosion present on the open coast. Therefore,

Apalachicola does not have a coastal construction control line (CCCL) nor the construction standards established to regulate the more vulnerable development of the barrier islands.

Because of protected features, the velocity zone or area with velocity wave action, (referenced in the future land use map series) encompasses limited urban land with the exception of Battery Park Municipal Pier & Marina and residential sites along Bay Avenues.

D. Infrastructure Within The Coastal High-Hazard Area

Growth in Coastal High Hazard Areas puts public infrastructure as well as the residential population at risk. Public expenditures for roads, sewers, water and other infrastructure subsidizes growth and increases vulnerability to storm events.

The City estimates that more than $400,000 worth of damage occurred during hurricane Kate to public facilities. Much of the requests for assistance were to fund the repair or replacement of public structures within what is currently being proposed as the CHHA.

The demand upon, and capacity of transportation, utility and drainage facilities are inventoried within the respective elements. The plan elements further analyze future needs and fiscal impacts related to necessary improvements detailed within the Capital Improvements Element. The following generally describes the systems, planned improvement and vulnerability of infrastructures in the Coastal High Hazard Area.

E. Transportation

The roads within the Coastal High Hazard Area of Apalachicola includes Bay Avenue (2.7 miles), 6th Street (partial: approximately 400 feet), Avenue B (partial; approximately 300 feet) . The Traffic Circulation Element identifies levels of service, existing deficiencies and roadway improvements planned. Measures that would upgrade conditions for hurricane evacuation are identified in the Hurricane Hazards section under Transportation and Hazards Constraints.

F. Sanitary Sewer Facilities (Wastewater treatment plants, lift stations, collection systems)

There is one wastewater treatment plant in Apalachicola. The capacity of the plant and projected demands are presented in the utilities element. None of these facilities are located in the Coastal High Hazard Area, sewer lines run along Bay Avenue to serve residences within the CHHA, although no damage was reported to those facilities during the hurricane Kate. The City purposes no plan to relocate these sewer facilities.

While not in the CHHA, the treatment plant and several of the lift stations are located within the level A storm surge zone. While damages to the treatment plant could be expensive and cause sanitary problems, there are no plans to relocate the plant. The plant was not affected by

hurricanes Elena or Kate. Relocation of the lift stations which are typically located in low areas is not practical.

G. Potable Water System

Potable water well fields and treatment facilities are inventoried in the Potable Water sub-element. There are no wellfields or treatment plants within the CHHA, although water lines are in place along Bay Avenue and service existing residences within the CHHA. There was no damage to the facility during hurricane Kate, and the City proposes no relocation of the lines. An elevated storage tank, located outside the CHHA but within the hurricane vulnerability zone was destroyed during hurricane Kate. It has been replaced at a location outside the hurricane vulnerability zone.

F. Drainage Facilities

The City topography consists of low coastal plains varying from sea level to 20 feet. Natural channels and man-made canals are the principal outlets for drainage. All the drainage facilities are gravity systems. Within the CHHA there are a number of drainage pipes that run north/south under Bay Avenue opening into culverts on the south side of the Avenue. Four of the five drainage pipes are 12" pipes with drop boxes and one is a 48" pipe that runs directly into the Bay. At the foot of the Gorrie bridge, there is an extensive stormwater 48" drainage pipe system with several drop boxes and culverts opening into the bay that the base of the bridge.

The stormwater system is old and in need of rehabilitation in many areas of the City. Existing deficiencies include undersize pipes and the infiltration of water, sand and soil into the system which could lead to subsidence of surface structures and costly repairs. Flooding as a result of these deficiencies is a present danger to like and property. Relocation of the system outside of flood hazard locations would not resolve the flood problem. There is a crucial need for new infrastructure or expanded capacities to alleviate flooding in areas not capable of handling runoff from an average summer rainfall.

H. Public Shore Protection Structures (seawalls, bulkheads)

The seawalls and bulkheads or retaining walls that border public properties are the only public shore protection structures. More massive shore protection facilities are not generally needed nor present in the sheltered bay shoreline where large waves do not occur.
Except for maintenance, there are no plans to relocate or modify any of the public seawalls or bulkheads.

I. Public Buildings

There are no municipal buildings within the Coastal High Hazard Area. However, damages to public buildings and facilities have occurred as a result of saltwater effects, including flooding

and corrosion. Those buildings which have suffered damage from hurricane Kate include City Hall, City Fire Station and the Public Library.

XV. Beaches and Dune Systems

The state Department of Natural Resources does not identify beaches or dunes within the incorporated limits of the City of Apalachicola. The shoreline of Apalachicola consists of fresh and saltwater marsh. There are no swimming areas at either of the City's two waterfront parks and it is not advisable to create any due to commercial boat traffic at one park and marshy snake and alligator habitation at the other. This planning requirement is therefore not applicable.

XVI. Public Access

A. Inventory of Existing Facilities

According to the Department of Natural Resources figures (1988 Statewide Supply of Outdoor Recreation Resources and Facilities) , there are 54,415 acres of public outdoor recreation land in Franklin County. Of that, the Federal government controls 34,229 acres; the State, 20,154 acres; the County, 14 acres and municipal governments, 17 acres. Private or commercial interests control 6,757 acres of recreational land in the County.

There no are public saltwater beach areas in the City of Apalachicola .

Table 26 inventories those sites within the Apalachicola coastal area which offer public access to river and saltwater shorelines. The list includes private commercial marinas and docking facilities. It does not include traditional shoreline fishing site because the City does not encourage the uses of there sites because they are either private property or a traffic hazard (in the instance of bridge fishing) The location of these facilities is shown on Map 3. Most of the information for Table 30 was gathered from the 1988 DNR Statewide Supply of Outdoor Recreation Resources Inventory.

Table 26
PUBLIC ACCESS FACILITIES

NAME	ACCESS FACILITY TYPE	AVAILABLE PARKING
Lafayette Park/ Fishing Pier	Neighborhood park 900 ft. Saltwater pier	90
Battery Park/Marina	Neighborhood park,1000 ft. saltwater pier,1 saltwater ramp	300
Apalachicola Marine Works (private)	Docking facilities	
Rainbow Marina (private)	Marina	
Randolph Marina (private)	Marina	
Apalachicola City Docks (private)	Dock	
Scipio Creek Marina (private)	Marina	20
Standard Oil Dock (private)	Dock	64
Gulf Oil Corp. (private)	Dock	

Source: DNR 1988 Statewide Supply of Outdoor Recreation Resources and Facilities by Major Suppliers in Florida; Field Observation; City office

Table 27: SUMMARY OF COASTAL RECREATION FACILITY SUPPLY

TYPE	PUBLIC	PRIVATE	TOTAL
Saltwater Fishing Piers (linear feet)(2 sites)	1,900	0	1,900
Saltwater Catwalks(linear feet) (1 site)	0	250	250
Saltwater Boat Ramp Lanes (1 sites)	3	0	3
Saltwater Marinas	3	5	8
Saltwater slips/moorings	0	184	184
Saltwater Dry Storage(slips)	0	0	0
Scenic Facilities or Roads	1	0	1

SOURCE: DNR. 1988 Statewide Supply of Outdoor Recreation Resources and Facilities by Major Supplier in Florida and Field Observation

Tables 26 and 27 indicate that Apalachicola is well supplied with access to coastal resources. The access is supplied by both the public and private sector, except that the majority of marinas are provided by the private sector.

B. Future Needs

DNR projects that current supply will meet regional needs for saltwater boat ramps through 1995. (Table 28)

The need for marina slips was based on estimates contained in a 1985 DNR study, "Estimates of the Demand and Supply of Marina Services in the State of Florida.: Most marina slips will be supplied by the private sector. See the coastal land use analysis for a discussion of marina siting and wet/dry slip demand.

Scenic facility use and the scenic value of certain roads is largely intangible. While the prediction of surpluses or deficits for scenic roads or facilities is not possible, protection of the scenic view is possible. The view from these areas should be protected by maintaining native vegetation, limiting building densities, maximizing space between buildings, preventing the construction or planting of obstructing accessory structures or landscaping, or ownership of the land between the facility/road and the water.

Table 28 Estimate of Needs by Year for the Region

Facility	1985	1990	1995	
Saltwater Beach(miles)	0	0	0	
Saltwater Non-boat Fishing (linear feet)	2,695	2,940	3,125	
Saltwater Boat Ramps	0	0	0	

Source: DNR 1987 - State Recreation Plan. Note: Franklin County currently exceeds the DNR estimated County need for non-boat fishing facilities through 1995. The DNR 1995 estimated need is 187 linear feet (calculated by multiplying the regional need by 6%, since the County's population is 6% of the region's total).

XV. Coastal Area Infrastructure

The following summarizes the existing and needed infrastructure serving the coastal area. This information is analyzed in greater detail in the Traffic Circulation Element; General Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Ground Aquifer Recharge Element; and earlier sections of this element.

A. Existing Facilities

The network of arterial and collector roads serving the coastal area are shown on Map 12. Table 31 gives the capacity and average daily trips peak season for the arterials and major collectors. The City uses level of service standard C (9,400) as the off-peak and on peak service standards.

As can be seen from the table, all arterial roads in the coastal area fall within the adopted level of service standards.

The following collector and arterial routes serve the Apalachicola Coastal area and are an adopted level of service standard C or better.

Avenue E (U.S. 98, SR 30) is an arterial road with a level of service standard "C" or better. The road is a two lane undivided road with a General level of Service Standard for traffic of less than 5,000.

North Market Street serves as a collector of traffic from the Research Reserve, various seafood industries and the Botanical Gardens area along Water Street. The level of service standard is C or better.

1. Sanitary Sewer Facilities

There is one operational public sewer facility serving the coastal area. Map 16 shows .the areas within the coastal area which are served by sewer.

Table 29: Existing Sewage Treatment Plants in the Coastal Area

Name	Capacity	Demand
City of Apalachicola	1.0 MGD	2,800 Pop.

Source: 1989 DER Groundwater Management System - Bureau of Information

2. Potable Water Facilities

Much of the coastal area relies on the public water supply system for water. As shown in Table 30, all the facilities have adequate capacity to service current demand.

3. Man-Made Drainage Facilities

The man-made drainage facilities within Apalachicola's ' coastal area are shown on map 17. The map was created by the USDA Soil Conservation Service after a survey was completed in 1988. According to the Soil Conservation Service, Apalachicola's stormwater facilities are inadequate. Many of the outlets are stopped up with trash or dirt and some manholes could not be located because the City had paved over them. There are drainage ditches throughout the Scipio Creek Area that have grown up with bushes, trees and water plants that stop the flow of water to their respective outlets. Most ditches have been cleaned out by the use of backhoes or excavators to the point that the bottom of the ditches are well below the flow line of culverts under the roads and driveways which leaves standing water. It is recommended that the stormwater outlets should be cleaned out and a plan made to keep them clean. The open ditches would serve a more useful purpose if pipe were placed in them with suitable outlets.

4. Coastal or Shore Protection Structure and Beach Renourishment Projects

The City does not own nor maintain coastal or shore protection structures. Since the city has no financial responsibility for these facilities, the will not be discussed further. The City also has no plans for beach renourishment projects.

B. Future Needs 1. Roads

The Traffic Circulation Element presents projected traffic volumes for the arterials and major collectors through the year 2000. All roads are projected to be within their projected levels of service standard.

The Florida Department of Transportation, in their Five Year Construction Plan, FY 1986/87-1990/91, have outlined their improvements as shown in the Traffic Circulation element. No capacity improvements for facilities within the Coastal Area were identified in that report. As also reported in the Traffic Circulation element, no future capacity improvements have been identified as necessary by the City.

2. Sanitary Sewer Facilities

The improvement plans identified for the Apalachicola facility are discussed in the General Sanitary Sewer Element.

3. Potable Water Facilities
The General Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element proposes no new potable water facilities to service the coastal area.

4. Coastal or Shore Protection Structures and Beach Renourishment Projects

No City funded coastal or shore protection structures are proposed.

Table 30: WATER FACILITIES APALACHICOLA COASTAL AREA

FACILITY/SERVICE AREA(OWNER)	DESIGN CAPACITY	CURRENT AVERAGE DEMAND
City of Apalachicola	19,44,000 gpd (NWFWMD consumptive use allocation 1,150,000 gpd)	582,600 gpd

Source: General Sanitary Sewer, Solid Waste Drainage, Potable water, and Natural Groundwater Aquifer Recharge Element.

Table 31: CAPACITY ANALYSIS OF EXISTING ROADWAY SYSTEM (1989 Traffic Volumes)

Street	Class	Lanes	Peak Hour Volume	Hourly Capacity Use	V/C Ratio	LOS
12th St. (CR-384)	Collector	2	357	1,290	.28	A
Ave . E (US 98 E.)	Arterial	2	468	1,570	.30	A
Ave. E(US 98 W.)	Arterial	2	455	1,570	.48	B
Market St. (US 98)	Arterial	2	1040	1,570	.66	C

SOURCE: Traffic Circulation Element

XVIII. GOALS, OBJECTIVES AND POLICIES

GOAL I BALANCING GROWTH AND COASTAL RESOURCES - THE NATURAL AND HISTORIC RESOURCES OF THE COASTAL AREA SHALL BE PRESERVED, PROTECTED OR ENHANCED AS THE DEVELOPMENT PROPOSED IN THE FUTURE LAND USE ELEMENT OCCURS. 9J5.012 3(a)

OBJECTIVE 1 The wetlands of Apalachicola shall be conserved and protected such that no net loss (after mitigation) shall occur through the year 2000. 9J5.012 (b)l,(2)

POLICY 1.1 The City will prohibit dredge and fill of the Wetlands without prior approval of State and Federal officials and then only after mitigate agreement is finalized pursuant to Policy 1.2C. [9J5.012-3(c)l]

POLICY 1.2 Through 2020 Apalachicola shall continue to enforce its city Land Development Regulations to ensure that:
a), site plans for new development identify the location and extent of wetlands located on and adjacent to the property;
b) subdivision and commercial site plans provide measures to guarantee that normal flows and quality of water will be assured to maintain wetlands development;
c) where alterations of wetlands are necessary in order to allow reasonable use of property, either the restoration of the disturbed wetlands will be provided or additional wetlands will be created at a 4:1 ratio to mitigate any wetland destruction. All approved mitigation shall be required to demonstrate, through appropriate monitoring and reporting by the project's developer, at least an 85% planting survival rate for wetland areas created/augmented during mitigation, for a period at

least two years for herbaceous wetland communities, and for at least five years for forested wetland communities.

POLICY 1.3 Apalachicola shall oppose through formal resolution further depositing of dredge material in the floodplain of the Apalachicola River, other than those already approved spoil sites.

POLICY 1.4 Upland areas of native vegetation larger than 40 acres and all wetlands impoundments are designated either the lowest density residential, conservation or low intensity commercial on the Future Land Use map, and all marine wetlands are designated as such on the map series. No development will be permitted in coastal wetlands.

POLICY 1.5 No new subdivision will be approved unless all of the lots proposed for development contain uplands large enough to contain the proposed activity and all required buffers and preservation areas.

POLICY 1.6 No habitable development shall occur within 2O feet of the waters or wetlands of the state unless located within the riverfront district and then only after a stormwater management plan has been submitted an approved by the State Department of Environmental Regulation, if applicable, and the local planning board. Docks, pervious walkways / and elevated walkways may be permitted to allow I access to the water.

POLICY 1.7 Pilings, not fill, shall be used to elevate structures in native vegetation areas.

OBJECTIVE 2: The City will support the conservation and protection of native vegetation, ecological communities, fish and wildlife habitat to the extent that between 2004 and 2020, the City will prohibit development which can be proved to damage the City's natural resources.

POLICY 2.1 The City will cooperate, whenever possible, with the Apalachicola National Estuarine Research Reserve in their efforts to maintain a comprehensive inventory of ecological communities which shall include species, population, habitat conditions, occurrences and alternations.

POLICY 2.2 The City's land use regulations shall prohibit high density development adjacent to sensitive wetlands areas, and shall prohibit destruction of wetlands vegetation without mitigation.

POLICY 2.3: The City land development regulations shall prohibit the development and disturbance of endangered species nesting areas.

POLICY 2.4 The City shall, through its land use regulation, encourage the use of natural vegetation erosion control structures along the coastal area by reducing the side boundary setback when natural vegetation is used.

POLICY 2.5 The City shall prohibit the use of habitat destroying vertical seawalls without rip rap reinforcement along natural water body shorelines. The City will encourage the removal of existing seawalls when the opportunity presents itself. Restoration will be accomplished by replacing existing, deteriorating seawalls with sloped shorelines or rip rap which will be vegetated where technically feasible. When properly done, such vegetated areas will recreate habitat and also provide greater storm protection to upland areas.

POLICY 2.6 Deleted

POLICY 2.7: The City shall prohibit the alteration, other than approved maintenance, of mosquito ditches.

POLICY 2.8: The City shall encourage the use of native vegetation over exotic vegetation.

OBJECTIVE 3: The City shall maintain the estuarine water quality surrounding Apalachicola's coastal resources such that there shall be no loss of any approved shellfish harvesting classifications through the year 2020.

POLICY 3.1: The City will continue to implement the Septic Tank Abatement Program, Ordinance 89-4, which is designed to correct any onsite sewage disposal systems that might endanger the Apalachicola Bay.

POLICY 3.2: The City shall require all owners and users of onsite sewage disposal systems in Apalachicola to connect to a central sewerage system when it is available for use pursuant to s. 380.0555 (11) (h), F. S.

POLICY 3.3: The City shall, through its land development regulations, require developers of new subdivisions with lots of less than one acre to connect to a public wastewater system and provide sewers to each lot in the subdivision.

POLICY 3.4 The City shall, through its land development regulations, require all new construction within the coastal area boundary to install a stormwater management system that will provide for the treatment of runoff to applicable State standards.

OBJECTIVE 4: Estuarine Water Quality - Through the year 2O20, the water quality of Apalachicola Bay and River shall remain classified as "good".

POLICY 4.1 No new point sources shell be permitted to discharge into Apalachicola Bay, River, St. Vincent Sound or into ditches on canals that flow into the above named waterbodies.

POLICY 4.2 In order to reduce the impact of effluent from sewage treatment plants on the Bay, sewage treatment facilities with a history of treatment standards violations shall have highest priority in connecting to new or improved facilities.

POLICY 4.3 New boat basins shall be prohibited, marinas and other multi-slip docking facilities shall use docks extending out to water no less than four feet deep at mean low tide, and dredging for marinas or multi-slip docking facilities shall be restricted to limited channels for launching boats.

POLICY 4.4 Dredging at the mouth of the Apalachicola River shall be prohibited, unless a detailed study of contaminates in the sediments is performed and adequate safeguards to prevent release of any contaminates are provided. All contaminated dredged materials shall be disposed of at safe upland sites.

POLICY 4.5 Structures which constrict water circulation in the Bay shall be prohibited.

POLICY 4.6 All development in the coastal area will be required to provide a stormwater management plan sufficient to meet state stormwater management requirements. Where state stormwater requirements are exempt e stormwater management plan as required by the city's land development code will be required as a part of the required site plan.

POLICY 4.7 In order to reduce non-point source pollutant loadings and improve the functioning of the county's drainage system, dumping of debris of any kind, including yard clippings and trimmings, into drainage ditches and stormwater control structures is prohibited. The City shall utilize fines, and initiate a public information program to help discourage future illegal dumping in drainage facilities.

POLICY 4.6The City shall establish periodic inspection programs for storm water control structures to Insure their proper functioning and maintenance.

POLICY 4.9 The following requirements shall apply within approved or conditionally approved shellfish harvesting areas, within class 1 or 2 resource protection areas of the aquatic preserve, within Outstanding Florida Waters or on lands adjacent to the above:
1) A 20-foot buffer of native vegetation shall separate the developed part of the site from wetlands and/or deepwater habitats; except with the riverfront district where there shall be a 10-foot setback.
2) Reasonable access to the water on wetlands shall be allowed as described in 1.1.03;
3) Dredge-and-fill activities shall be prohibited unless there is overriding public interest;
4) Septic tanks and drainfields, percolation ponds, or polishing ponds shall be set back 75 feet from the shoreline or wetlands.

OBJECTIVE 5 By 2020, the City shall, adopt a floodplain drainage basin program which will address development restrictions for floodplain drainage areas, a work plan for correcting

drainage facility deficiencies and the creation of a stormwater manual outlining stormwater systems appropriate for use with the coastal area.

POLICY 5.1 The City shall, through its land development regulations, require all development within the City's areas of special flood hazard to be elevated or floodproofed in accordance with Federal Flood Hazard Regulations.

POLICY 5.2 The City shall maintain its drainage facilities through regular cleaning and debris removal.

POLICY 5.3 The City shall apply annually for grants available through DER, DCA, EPA and the Northwest Florida Water Management District for the repair and construction of new drainage facilities within the City.

POLICY 5.4 The City shall adopt, and provide developers with at the time of development application, a stormwater manual which outlines State accepted methods for treating stormwater runoff.

OBJECTIVE 6 Through the 2020 planning period, By 1991, the City shall continue to enforce existing land use -laws which give priority to the siting and development of water-dependent uses within the Coastal Area, as compared with other shoreline uses.

POLICY 6.1: It shall be the policy of the City to utilize the following priority list in reviewing applications for shoreline uses, so as to provide increased priority for water-dependent uses. Uses listed first shall generally be given the highest priority of all uses that may be proposed along the shoreline, with other, uses listed in the order of declining priority. Uses listed under (6) shall be given the least preference for location along the shoreline.

1) Water-dependent uses such as fish, and shellfish production;
2) Water-dependent recreation and commercial uses such as ports, marina-type uses, and navigation;
3) Water-related uses such as certain utilities and commercial;
4) Water-enhanced uses such as certain recreational and commercial uses;
5) Non-water dependent or related activities such as residential uses; and
6) Non-water dependent and non-water enhanced uses which result in an irretrievable commitment of coastal resources.

OBJECTIVE 7 Water Dependent/Water Related Land Uses - The City shall prohibit any water dependent or water related land-use which will lower the water quality standards below State water quality standards for River and Bay. 9J5.012(3)(b)(3)

POLICY 7.1 Through the planning period 2020, the City shall require sewage pump-out facilities for all new marina facilities along the riverfront and by 2020 continue to enforce existing regulations requiring marinas to install such facilities.

POLICY 7.2 The City shall provide sewage pump out facilities at all city-owned and maintained marinas.

POLICY 7.3 New marinas and multi-slip docking facilities shall conform to the following criteria:
a) public use marinas shall be allowed only in commercial zoning districts;

b) non-public use marinas or multi-slip docking
facilities shall be allowed only In medium density residential zoning districts and then only If use of docking facilities are limited to use by residents;
c) marinas and multi-slip docking facilities must provide vehicular parking.
d) all parking, dry storage, and non-water dependent facilities must be built on existing uplands;
e) marinas and multi-slip docking facilities shall prepare hurricane plans which describe measures to be taken to minimize damage to marina sites, neighboring properties, and the environment; this hurricane plan shall be reviewed and approved by the Emergency Management Director and the Planning Director;
f) marina or multi-slip docking facilities shall comply with the other policies of this plan; marinas or multi-slip docking facilities which propose to disturb or destroy wetlands or grassbeds shall create new wetlands in compliance with other policies of this plan.
g)marinas or multi-slip docking facilities which propose to disturb or destroy wetlands or grassbeds shall create new wetlands in compliance with other policies of this plan;
h) dry slip use shall be maximized in order to minimize impacts on water quality, and minimize the areas extent of disturbance of the estuary; and
1) fueling facilities associated with marinas shall be designed to contain spills from on-land equipment and shall be prepared to contain spills in the water.

GOAL II: REDUCING VULNERABLILITY TO HURRICANES. PEOPLE AND PROPERTY IN APALACHICOLA WILL BE PROTECTED FROM THE EFFECTS OF HURRICANE STORM DAMAGE. PUBLIC EXPENDITURES SHALL BE LIMITED.

OBJECTIVE 8: Hazard Mitigation and Coastal High-Hazard Areas. Through the 2020 planning period the City shall continue to enforceLand Development Regulations to restrict development within coastal high-hazard areas and budget policies shall restrict public funding for facilities within coastal high-hazard areas.

POLICY 8.1: City-funded public facilities shall not be bull in the coastal high-hazard area, unless the facility is for public access or resource restoration.

POLICY 8.2: : The City shall establish a lower priority for the expenditure of City funds for public infrastructure within the Coastal High Hazard Area (CHHA) as compared with expenditures within other non-CHHA areas, except where expenditures are necessary to meet a "crucial need". A "crucial need" finding must be arrived at by the City to authorize public expenditures within the CHHA, and shall establish that the expenditure is necessary to alleviate dangerously overcrowded or otherwise hazardous roads, to replace or construct wastewater facilities to alleviate or prevent potential violations of potable water quality standards or water quality standards applicable to surface waters, or to construct recreational facilities unique to coastal sites. Furthermore, a "crucial need* may only be established after consideration has been given to hazard mitigation standards, including floodproofing and evacuation. Furthermore, a "crucial need* shall not be generated as a result of development approvals within the Coastal High Hazard Area of unincorporated Franklin county after adoption of this Comprehensive Plan.

POLICY 8.3: The City shall through its land development regulations restrict density of the City's CHHA areas to the lowest level of service establishment for the respective land use categories.

POLICY 8.4: The City's Floodplain Management Ordinance shall reference the building elevations of the Flood Insurance Rate Maps, the building requirements of the National Flood Insurance program, provide for detention of rain from, a 25 year - 24 hour rainfall event, and restrict discharge of rainwater into ditches which may flood evacuation routes.

POLICY 8.5 New sanitary sewer facilities in the hurricane vulnerability zone shall be flood proofed, raw sewage shall not leak from sanitary sewer facilities during flood events.

POLICY 8.6 The Coastal High Hazard Area shall, at a minimum, be consistent with the definition found in Rule 9J5-..03(17) FAC. which reads as follows: “Coastal High Hazard Area means the evacuation zone for a Category 1 hurricane as established in the regional hurricane evacuation study...” The City’s CHHA shall further encompass the velocity zones as identified on the Flood Insurance Rate Maps, the areas seaward of the coastal construction control line and where public facilities have been damaged or undermined by coastal storms. (Map 9).

POLICY 8.7 The City shall adopt most recent amendments to the 1985 edition of Southern Standard Building Code.

OBJECTIVE 9 DEVELOPMENT DENSITY AND INTENSITY: By 199O, the City shall through its Land Development Regulations, limit development density and intensity within the Coastal High Hazard Area and direct it outside of the Coastal High Hazard Area, to mitigate the impact of natural hazards in this area. 9J5.O12 (3)<b)(6)

POLICY 9.1 It shall be the policy of Apalachicola to require that all land development applications within the Coastal High Hazard Area be planned and obtain approval pursuant to a

site plan review process, to ensure that development is compatible with site characteristics. Applications will be reviewed according to pertinent sections of the National Flood Insurance Program, and will be reviewed for compliance with all other applicable flood control regulations.

POLICY 9.2 Apalachicola shall limit the density of new residential development within the FEMA Velocity-Zone of the Coastal High Hazard Area to a maximum of five dwelling units per gross acres, i.e., the maximum density associated with the low intensity residential category described in the Land Use Element. No other uses are in the coastal high hazard area.

POLICY 9.3 Promote, through Land Development Regulations in instances where a proposed project is located entirely within the CHHA, the clustering of uses. Such clustering will be used to limit the acreage within the CHHA, that will be affected by the proposed development, and will serve to limit the amount of infrastructure provided within the CHHA. Net density limits that are otherwise applicable to future land use categories may be waived for purposes of implementing the clustering concept identified in this policy.

POLICY 9.4 The City shall prohibit the approval of new development orders for mobile home projects within the CHHA of the Coastal Area for protection of the public health, safety, and welfare.

POLICY 9.5 The City shall prohibit the siting of new acute care medical facilities within the Coastal High Hazard Area. Furthermore, existing medical facilities within the Coastal Area shall be discouraged from locating new facilities or expanding existing facilities. Medical facilities, as defined in this proposed policy, shall be limited to those regulated by Chapter 464, F. S. ^___

OBJECTIVE 10 Hurricane Evacuation - The City's hurricane evacuation time for a Level A storm shall be the minimum of the range as identified else where in this plan (Tables 19 thru 23). 9J5.012(3)(b)(7)

POLICY 10.1 In order to prevent unnecessary evacuees crowding roads and shelters, the city shall, prior to hurricane season, notify each household of their need to evacuate at various threat levels; hotels and motels shall post this notification conspicuously in each unit. Each new dwelling unit shall be provided with this information when the certificate of occupancy is issued, and this information shall be passed on to the new residents.

POLICY 10.2 New or replacement bridges spanning the Intracoastal Waterway shall not be draw bridges.

POLICY 10.3 The City shall coordinate with the County in implementing this hurricane evacuation plan.

POLICY 10.4 All future improvements to roads along the evacuation routes shall include remedies for flooding problems.

POLICY 10.5: To reduce existing evacuation deficiencies the City shall restrict traffic from traveling along Bay Avenue from 6th to 13th Street and along Water Street in times of hurricane evacuation. Traffic barriers and lane usage modifications should be used as necessary to restrict traffic from traveling these two roads in a hurricane evacuation situation.

OBJECTIVE 11: Post-Disaster Redevelopment. By 1995, the City shall adopt a post-disaster response and cleanup assistance, procedures for redevelopment permitting and hazard mitigation measures. In the mean time, the current county emergency plan will be utilized and modified as indicated. 9J5.O12 (3)(b)(8)

POLICY 11.1: The City shall amend where necessary the natural disaster preparedness technical data, as well as the Goals, Objectives and Policies of the Coastal Management Element to be consistent with an updated version of the Regional Planning Council's Hurricane Preparedness Plan when it becomes available.

POLICY 11.2: The City shall work with the county to modify the current Local Peacetime Emergency Plan to comply with the policies under this objective, and shall contain step-by-step details for post-disaster recovery operations.

POLICY 11.3: After a hurricane but prior to re-entry of the population into evacuated areas, the City Commission shall meet to hear preliminary damage assessments, appoint, in cooperation with the County, a Recovery Task Force, and consider a temporary moratorium on building activities not necessary for the public health, safety, and welfare. The Recovery Task Force shall include the Planning Director, County Emergency Management Director, Public Works Director, and other members as directed by the City Commission. Staff shall be provided by the departments whose directors sit on the Task Force. The Task Force shall be terminated after implementing its responsibility under Policy 11.5.

POLICY 11.4: The City shall prioritize immediate repair and cleanup actions and permitting activities following a natural disaster. Immediate repair and cleanup actions needed to protect the public health and safety will be given first priority. Those priorities may include repairs to potable water, waste water, and power facilities; removal of debris; stabilization or removal of structures about to collapse; and minimal repairs to make dwelling habitable. These actions shall receive first priority in permitting decisions. Long term redevelopment activities shall be postponed until the Recovery Task Force has completed its tasks.

POLICY 11.5 The Recovery Task Force shall propose comprehensive plan amendments to City officials which reflect the recommendations in any interagency hazard mitigation reports or other reports prepared pursuant to Section 406 of the Disaster Relief Act of 1974 (PL 93-288) .

POLICY 11.6 In coastal areas needing redevelopment after a disaster, structures which were nonconforming in terms of flood elevation or land use and which suffered damage in excess of fifty percent of their appraised value shall be rebuilt to meet all current requirements, including those enacted since construction of the structure.

POLICY 11.7 The City shall coordinate with the county to develop and adopt prior to the 1995 hurricane season a formal decision making process to evaluate options for damaged public facilities in the CHHA including abandonment, repair in place, relocation, and reconstruction with structural modifications. This process shall consider these options in light of factors such as cost to construct, cost to maintain, recurring damage, impacts on land use, impacts on the environment, and public safety.

POLICY 11.8 The City shall work with the county to identify structures in the coastal high-hazard area, inventory their assessed value, judge the utility of the land for public access, and make recommendations for acquisition when post-disaster opportunities arise.

OBJECTIVE 12 Public Access - The amount of public access to coastal resources shall be maintained and not decreased between 2004 and 2020.

POLICY 12.1 Existing access for the public to the river and bay shall be maintained by new development. New riverfront development shall show on their site plans existing riverfront access ways and the proposed development shall continue that access way, relocate it on the site, or donate it to the City.

POLICY 12.2 : All public access facilities shall include parking facilities and access to a State or County road.

POLICY 12.3: The City shall accept donations of shoreline lands suitable for use as public access facilities.

OBJECTIVE 13: Historic Resources – By 2020, the City will complete an updated survey of all historic resources within the coastal area and continue to enforce development standards for the protection, preservation and sensitive reuse of historic resources throughout the City.

POLICY 13.1: Historic Resources - City land development regulations shall prohibit the destruction of historic resources as referenced in the data & analysis section of this element on City owned property and require that historic resources on private property shall protected, preserved or used in a manner that will allow their continued existence.

POLICY 13.2: Historic and archaeological sites shall be incorporated into required setbacks, buffer strips, or open spaces up to the maximum area required by the development regulations. The city shall establish waivers for non-safety related setback requirements and site planning

requirements in order to accommodate historic structures or sites within a proposed development.

POLICY 13.3: As an alternative to preserving historic or archaeological sites, the owner may allow excavation of the site by the Division of Historic Resources or their approved alternate prior to development. Should a site be scientifically excavated, then development may proceed without preserving the site.

POLICY 13.4: In the case of historic or archaeological sites, vegetation removal shall not be permitted unless the vegetation to be removed is a part of a bonafide scientific excavation, or is a part of an approved development plan.

POLICY 13.5: The City shall accept donations of historic or archaeological sites.

POLICY 13.6: The City building official shall refer all development proposals within the designated historic district to the City Planning & Zoning Board for review of appropriateness.

POLICY 13.7: The City shall, through its land development regulation, prohibit the demolition of historic structures unless such building classified ac historic is incapable or earning an economic return on its value, as appraised by a qualified real estate appraiser. The city shall, instead, work with developers to secure federally-subsidized grants to renovate/restore historic structures.

OBJECTIVE 14: Maintaining Scenic routes. By 2020, the City will establish a scenic road program in order to help preserve the area's natural beauty.

POLICY 14.1: U.S. Highway 98 within the City, Water Street, and Bay Avenue shall be designated scenic roads.

POLICY 14.2: Properties between designated scenic roads and wetlands or open water shall be zoned the lowest density allowed for their respective future land use categories.

POLICY 14.3: Site plan requirements for areas between
designated scenic roads and wetlands or open water shall require the use of native vegetation in landscaping, separation of buildings by at least 50 feet along the axis of the road, and the avoidance of fencing or landscaping that would obstruct views of wetlands or open water.

GOAL III: INFRASTRUCTURE - PUBLIC FACILITIES SHALL BE
ADEQUATE AKD AVAILABLE TO SERVE THE RESIDENTS AND VISITORIS TO THE CITY'S COASTAL AREA.

OBJECTIVE 15: Levels of Service - The level of service standards adopted elsewhere in this Comprehensive Plan for facilities in the coastal area and the additional standards under this objective shall be applied whenever development orders or permits are requested. The evacuation times established by objective 10 shall also be considered levels of service standards for roads. 9J5.012 (3)(b)(11)

POLICY 15.1: Service areas shall be established for water, sewer, roads and bridge facilities. Development within these service areas shall be limited to the capacity of the respective facilities to supply the appropriate service as established by the level of service standard adopted in this comprehensive plan. Funding for such facilities will be phased to coincide with the impacts generated by development or redevelopment.

OBJECTIVE 16: Required Improvements, Timing, and Funding. All public facilities shall be available at least by the time they are needed to serve new development.

POLICY 16.1: Improvements to the Apalachicola sewage treatment plant serving the Apalachicola area shall be constructed by 2000 and shall be funded by grant funds.

POLICY 16.2: Developments which would impact existing facilities by reducing the level of service below adopted levels, and which are to be built prior to the availability of scheduled facility improvements shall pay for such impacts or shall provide their own facilities constructed to city standards.

POLICY 16.3: New or improved roads in the coastal area shall include paved areas which can be used to increase the number of traffic lanes for hurricane evacuation.

GOAL IV: INTERGOVERNMENTAL COORDINATION TO PROTECT COASTAL RESOURCES. COASTAL RESOURCE MANAGEMENT KILL ADDRESS NATURAL SYSTEMS ON A SYSTEMSIDE BASIS REGARDLESS OF POLITICAL BOUNDARIES.

OBJECTIVE 17: Coordinating with Other Local Governments - By 2020, a intergovernmental coordination program shall be established in order to manage coastal resources affecting or affected by governments other than the City.

POLICY 17.1: The City shall review the comprehensive plans of Carrabelle and the county to determine consistency.

POLICY 17.2 The City shall develop joint planning and management programs with the County for hurricane evacuation, provision of public access, provision of infrastructure, providing-water dependent use sites, controlling stormwater, reducing wastewater treatment plant discharges, protection of living marine resources reduction of exposure to natural hazards.

POLICY 17.3 The City shall develop a joint program with the County to combat non-point source pollution in the Apalachicola Bay basin.

POLICY 17.4 The City shall forward copies of development proposals within the coastal area to the County for review and comment.

POLICY 17.5 Prior to the adoption of any land development regulations developed pursuant to 163.3202, F.S. the City shall review and incorporate, where appropriate, policies recommended in the Apalachicola Bay Aquatic Preserve Management Flan, the National Estuarine Research Reserve Management Plan, the Northwest Florida Water Management District's Surface Water & Improvement Management Plan and the Lower Apalachicola River: Environmentally Endangered Lands Management Plan.