North Carolina Coastal Zone Management Program

COUNTY OF CHOWAN, N.C.

CHOWAN COUNTY

CAMA LAND USE PLAN

JUN 1987

1986 UPDATE

COASTAL ZONE
INFORMATION CENTER

PREPARED BY:

TALBERT, COX & ASSOCIATES, INC.

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CHOWAN COUNTY, NORTH CAROLINA
LAND USE PLAN: 1986 UPDATE

PREPARED FOR

CHOWAN COUNTY, NORTH CAROLINA

CHOWAN COUNTY BOARD OF COMMISSIONERS

Alton G. Elmore, Chairman
Clara Boswell
C. A. Phillips
Joe Hollowell
Wayne Goodwin

PREPARED BY CHOWAN COUNTY PLANNING BOARD

Tony Webb
Percy White
Anthony Hathaway, Jr.
James D. Ward
Richard Bunch
Barbara Burroughs
Jack Evans

AND

CHOWAN COUNTY MANAGER'S OFFICE
Luther C. Copeland, County Manager
Nancy B. Morgan, Administrative Assistant

PLANNING ASSISTANCE PROVIDED
BY

Kenneth Weeden, AICP — Project Manager
Talbert, Cox & Associates, Inc.

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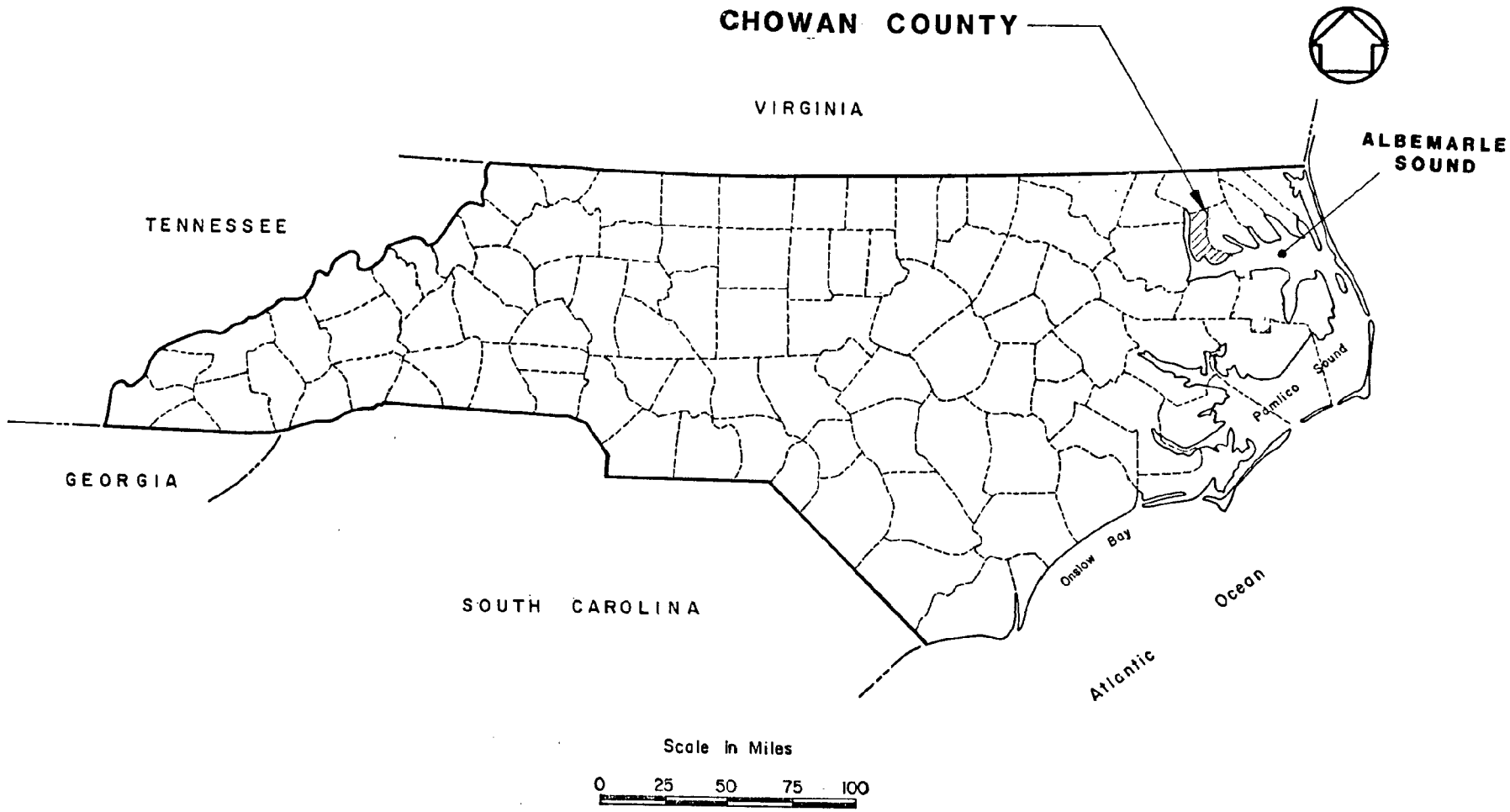

MAP 1
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CHOWAN COUNTY, NORTH CAROLINA
LAND USE PLAN: 1986 UPDATE

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PREFACE

CHOWAN COUNTY
LAND USE PLAN UPDATE, 1986
Analysis of 1981 Policy Statements/Implementation Actions

The CAMA Land Use Plan for coastal communities is essentially a policy document aimed at guiding localities toward sound growth management. Because circumstances, conditions, and issues change over time, the Coastal Resources Commission, under State law, requires the local land use plans to be updated every five years in order to "take a second look" at old policies for their relevance as well as examine newly emerging trends and concerns. The Commission is also requiring in all 1986 updates an assessment of the previous policy statements and implementation steps taken to effectuate them. This summary analysis of the 1981 policies is being presented here as a "Preface" to the 1986 Plan Update of Chowan County's Plan. Note that in the 1981 Plan, Chowan County's Policy Statements were presented as "Development Issues."

DEVELOPMENT ISSUES

Policy/Implementation	Status/Relevancy Actions
1. POLICY STATEMENT - It shall be the policy of Chowan County to encourage the State of North Carolina to widen U.S. 17 from 2 to 4 lanes, from Virginia to South Carolina, but does not consider it a high priority issue. The County will, as part of this policy, support adequate local planning in order to guide and control the types and locations of future development which will result from this project. IMPLEMENTATION - Close coordination will be maintained between the County Manager's office and the NCDOT to ensure prior knowledge of any decision to 4-lane U.S. 17 through Chowan County. In the interim, the County Planning Board will seek CAMA planning grant funds within the next 2 years to study each intersection which may be impacted by such a project and determine the optimum land use types and locations most desirable. Within the next five years, the County will study the possibility of preparing a County-wide zoning ordinance which would include zoning recommendations for the subject intersections.	1. Ongoing concern. Partly implemented. According to the State Transportation Improvement Program, 2 new intersections with the U.S. 17 Bypass around Edenton will be constructed, i.e., one each at Albemarle Street and Paradise Road. Also, the feasibility of a County-wide zoning ordinance was explored, but such an ordinance was determined to be unnecessary at the time.

Policy/Implementation	Status/Relevancy Actions
2. POLICY STATEMENT - It shall be the policy of Chowan County, along the waterfronts, to informally acknowledge second home and other types of residential developments, as long as they meet all the requirements of the County's subdivision regulations and other ordinances and policies in effect at the time of their development. IMPLEMENTATION - The County will continue to enforce its subdivision regulations, and will, in the next 2-4 years, investigate the need for a County-wide zoning ordinance.	2. Second-home development is no longer considered to be a problem. In 1985, the County adopted a partial zoning ordinance covering only the Cape Colony-Country Club area near the Edenton Municipal Airport; however, broader zoning is still an issue as other parts of the County develop.
3. POLICY STATEMENT - It has been and shall continue to be a policy of Chowan County to participate with all concerned units of local governments and state and federal agencies to seek a resolution of the problems of pollution of the Chowan River in order to increase its value to Chowan County as a natural recreational and commercial fishing resource. Chowan County considers the pollution of the Chowan River a top priority. IMPLEMENTATION - The County Manager or his representative will attend intergovernmental and/or interagency meetings in which progress on the problem is to be discussed.	3. Ongoing concern, continuing implementation.
4. Natural Hazard Areas - Excessive Erosion Areas - Estuarine and River Erodible Areas - To ensure that development occurring within these areas is compatible with the dynamic nature of the erodible lands, thus minimizing the likelihood of significant loss of property. IMPLEMENTATION - Chowan County will, as it has in the past, ensure that future developments will not negatively affect the County's fragile	4. Partially implemented, although public access to waterways is still an ongoing concern.

Policy/Implementation	Status/Relevancy Actions
cultural and natural resources. Through locally adopted plans, regulations, and ordinances, the County will ensure compatibility with state and federal statutes applicable to these areas, thus preserving and protecting them, and access to them for all the citizens of Chowan County. Land uses permitted within these areas are listed in the definition of the "conservation" land classification in Chapter VI of this plan update (1981).	
5. POLICY STATEMENT - It is considered to be in the best interest of Chowan County to encourage cluster types of residential development in areas already being developed for that purpose. It shall, therefore, be the policy of Chowan County to encourage cluster residential development and the development of service-oriented commercial establishments in these same areas in locations such that they do not become incompatible with the residential developments.	5. This policy was not implemented through ordinances. Since 1981, however, a partial zoning ordinance and a mobile home ordinance has been adopted by the County. Both ordinances are geared toward relatively low-density development.
IMPLEMENTATION - Encouragement of these types of development will be made through locally adopted plans, regulations, and ordinances in effect at the present time and through those which may be enacted in the future. The Tax Supervisor has and will have the responsibility of enforcing the subdivision regulations. As other ordinances are adopted, responsibility of enforcement will be assigned as appropriate.	
6. POLICY STATEMENT - The County shall evaluate in 1981-82 the recreational needs of Chowan County on a periodic basis, and shall include in those evaluations a determination of actual need for more public access points and facilities. As such access points and facilities are shown to be needed, the County will seek technical assistance and funding to see that said facilities	6. Not implemented. Public access is still an issue in Chowan County.

Policy/Implementation	Status/Relevancy Actions
are made available to the citizens of Chowan County. Water access in new shoreline developments is covered in the subdivision regulations.	
7. POLICY STATEMENT - It shall be the policy of Chowan County to cooperate with the Town of Edenton and the local Chamber of Commerce in seeking new industries, which substantially meet the industry type of "light manufacturing and assembly operations," and/or which do not require large amounts of water for their processing, to locate in either the Edenton Industrial Park or on land near the Airport, which is considered suitable for industrial purposes. Further, it shall be the policy of Chowan County not to exclude other types of industries locating in Chowan County, except that any new industry must not require large amounts of public water, nor will it be of an industrial type which inherently has the potential of disturbing the environment of Chowan County.	7. Active, ongoing concern. The County did correspond with the Edenton Chamber of Commerce.
IMPLEMENTATION - The County Board of Commissioners, through its regular contacts with and participation in the local Chamber of Commerce, will make known the above-stated policy. As evidence of this policy, the County Manager will write a letter to that organization stating this and other policies contained in this plan which relate either directly or indirectly to industrial development within Chowan County.	
8. POLICY STATEMENT - Because of existing sanitary problems in the Cape Colony area, and because of the potential of new industrial development on land near the airport, it shall be the policy of Chowan County to investigate means of organizing a sanitary sewer district in the area generally in the vicinity of the airport.	8. Presently being implemented. Funds from the State, the Town of Edenton, and Chowan County, combined, will finance this feasibility study (to be completed in 1987).

Policy/Implementation	Status/Relevancy Actions
IMPLEMENTATION - The County will apply to the appropriate state/federal agency for funds to be used to prepare a preliminary study of the feasibility of installing sewer lines in existing developed areas in the vicinity of the airport. Further, this study will address the feasibility of installing lines of sufficient size to accommodate industries as described in the "Edenton Industrial Park Feasibility Study" as noted in this plan. Either as part of this study or as a separate study, the County shall investigate state statutes applicable to the formation of an independent sanitary sewer district in this area to determine if all statutes could be met. These studies will be prepared within the next two years.	
9. POLICY STATEMENT - It shall be the policy of Chowan County to attempt to identify any concentrations of substandard housing conditions within the County. Further, it shall be the policy of the County to seek assistance from state and federal agencies to determine the most appropriate course of action toward improving such conditions.	9. Not implemented, but still an ongoing concern.
IMPLEMENTATION - Upon publication of the 1980 Census, the County will apply to appropriate state and/or federal agencies for a planning grant for the preparation of a County-wide housing study which should identify specific areas which may meet funding criteria of the appropriate state and/or federal agencies for the redevelopment of those areas.	
10. POLICY STATEMENT - It shall be the policy of Chowan County to continue its commitment to state and federal programs (i.e., highway improvements, dredge and fill operations, erosion control, etc.) where and when applicable to Chowan County.	10. Implemented. Ongoing concern.

Policy/Implementation	Status/Relevancy Actions
11. POLICY STATEMENT - It shall be the policy of Chowan County to actively solicit input from the citizens of Chowan County into the planning process on a regular basis. IMPLEMENTATION - The County Manager's office will place a notice in a newspaper with local distribution stating the time, place, and subjects to be discussed of each County Planning Board meeting. Such notice shall be so made one week prior to each Planning Board meeting date.	11. Ongoing concern. The newspaper notice concept was not implemented.

SECTION I :
Analysis of Existing Conditions
and
Projected Demand

CHOWAN COUNTY LAND USE PLAN

A. ESTABLISHMENT OF INFORMATION BASE

This 1986 Land Use Plan Update for Chowan County has been prepared in accordance with requirements of the North Carolina Coastal Area Management Act (CAMA). Specifically, this document complies with Subchapter 7B, "Land Use Planning Guidelines," of the North Carolina Administrative Code, as amended, June 1985.

The initial CAMA Land Use Plan was prepared jointly for Chowan County and the Town of Edenton in 1976, and the first update in 1981. The 1981 Update did not include the Town of Edenton, but was a separate plan for Chowan County. According to the Land Use Planning Guidelines, the major purpose of periodic updating of local land use plans is to identify and analyze newly emerging community issues and problems. An additional element which was not required in either the 1976 Plan or the 1981 Update is a "Storm Hazard Mitigation, Post-Disaster Recovery, and Hurricane Evacuation Plan," and is required to be included in the 1986 Update. This element is designed to help local governments coordinate effective policies and actions relating to the impact of hurricanes or other severe storms.

The guidelines further give the following objectives the update should meet:

- to further define and refine local policies and issues;
- to further examine and refine the land classification system and the land classification map;
- to assess the effectiveness of the existing land use plan and its implementation;
- to further explore implementation procedures, and;
- to promote a better understanding of the land use planning process.

Both the 1976 Land Use Plan and the 1981 Update provided some of the needed information base for this most recent update. However, in many cases, new information had to be developed. A number of data sources were tapped during the preparation of this plan in order to prepare updated analyses of population, housing, economics, (including agriculture, fisheries, and forestry), and existing land uses. Most of the data came from primary and secondary sources in the form of direct contacts with representatives of various state and federal agencies and/or previously published documents or reports. Also, "windshield" surveys were conducted to obtain data on existing land use patterns. Interviews were conducted with various County officials. Efforts were made to obtain data that was as up to date and accurate as possible.

The data analysis showed that in most cases, the changes since 1981 (the last update year) have not been dramatic, while in other cases, some trends appear to be emerging. Some major conclusions of the updated land use plan are:

- Chowan County's population grew between 1970 and 1980, reversing a twenty-year-old trend of population losses. Population growth is projected to continue through 1995, with some notable shifts in age ratios, i.e., decline in school-age population, increase in the elderly population. The Edenton and Middle Townships are projected to receive most of the growth.

- The economic importance of agriculture is firmly established and will remain so in the County throughout the next 10 years. However, manufacturing, service, and tourism are all increasing in economic importance.

- The overall land development pattern, being one with a predominantly rural, scattered character, will likely continue in most parts of the County. Areas with the greatest potential for urbanization are those areas currently urbanizing, i.e., Arrowhead, Chowan Beach, and the Cape Colony Country Club areas.

Some of the data sources utilized in preparing this document include:

- U. S. Census of Population and Housing, 1980, U. S. Department of Commerce.

- N. C. Office of State Budget and Management, Demographic Section.

- 1981 Chowan County Land Use Plan.

- Before the Storm: Managing Development To Reduce Hurricane Damages, McElyea, Brower, & Godschalk, 1982.

B. PRESENT CONDITIONS

1. Population

Chowan County, located in predominantly rural Northeast North Carolina on the north side of the Albemarle Sound, has one of the smaller county populations of the State's 100 counties. Notice Table 1, below, which shows the decennial population of Chowan County from 1950 to 1980, with 1985 estimates and projections to 1990 and 1995.

TABLE 1: Chowan County Population: 1950-1980, With Projections to 1995

Year	Population	Num. Change	Pct. Change
1950	12,540	--	--
1960	11,729	-811	- 6.5
1970	10,764	-965	- 8.2
1980	12,558	+1,794	+16.7
*1985	12,960	+ 402	+ 3.2
*1990	13,497	+ 537	+ 4.1
*1995	13,808	+ 311	+ 2.3

Source: U. S. Census (Provided by Albemarle Commission)

* Projections by the N. C. Office of State Budget & Management

The population trends in Chowan County showed a strong, steady decline from 1950 to 1970, as Table 1 shows. From 1950 to 1970, the County lost a total of 1,776 persons or 14.2% over the 20-year period, with the strongest decrease occurring between 1960 and 1970. However, beginning with the 1980 Census, the County appears to be in a significant growth pattern, gaining more people within that one decade than it lost during the previous two. This pattern of increasing population within Chowan County is supported by recent projections made by the North Carolina Office of State Budget and Management. Growth, though moderating, continued from 1980 to 1985, and is projected to continue through 1995.

a. Composition

TABLE 2: Historical & Projected Racial Composition
Chowan County

	White		Total (%)	Non-White		Total (%)
Year	M	F		M	F	
1970	3,035	3,192	6,227 (58%)	2,227	2,310	4,537 (42%)
1980	3,501	3,793	7,294 (58%)	2,408	2,856	5,264 (42%)
*1985	3,550	3,908	7,458 (57.5%)	2,464	3,038	5,502 (42.5%)
*1990	3,675	4,055	7,730 (57%)	2,528	3,239	5,767 (43%)
*1995	3,714	4,173	7,887 (57%)	2,526	3,395	5,921 (43%)

Sources: U. S. Census; N. C. Office of State Budget & Management; State Data Center; Albemarle Commission

*Projections by Office of State Budget & Management

The racial composition of Chowan County's population has remained fairly constant since 1970. Both whites and non-whites in Chowan are projected to experience steady, but moderate population increases through 1995. The proportion of whites to non-whites is also projected to remain about the same throughout the period. This trend may indicate that more younger people in the County are choosing to remain in Chowan County, narrowing the previous flow of out migration.

The following Tables 3, 4, and 5, which depict the projected population of Chowan County for 1985, 1990, and 1995 by age, race and sex, show that females will continue to outnumber males in the County at a gradually increasing rate through the planning period (i.e., through 1995). The percent of females will grow from about 51% in 1970 to nearly 55% by 1995. This is partially due to the somewhat longer average lifespan for females than males, resulting in more widows.

These tables show also that the relationship between the overall age groups in Chowan County are not projected to change significantly. In general, the trend appears that Chowan County's older population (60 and over) is gradually increasing as a percent of the total population, while the middle and perhaps more productive age groups of from 20 to 59, will remain about the same, percentage-wise.

CHOWAN

ESTIMATED POPULATION, JULY 1, 1985, BY AGE, RACE, AND SEX

AGE	TOTAL	WHITE			OTHER		
		TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
TOTAL	12960	7458	3550	3908	5502	2464	3038
0-4	909	413	202	211	496	244	252
5-9	989	450	221	229	539	257	282
10-14	950	496	259	237	454	211	243
15-19	873	426	223	203	447	174	273
20-24	996	497	261	236	499	228	271
25-29	984	518	259	259	466	187	279
30-34	960	483	241	242	477	221	256
35-39	891	534	268	266	357	163	194
40-44	670	437	198	239	233	104	129
45-49	614	422	200	222	192	89	103
50-54	653	440	207	233	213	94	119
55-59	708	484	226	258	224	99	125
60-64	767	529	251	278	238	109	129
65-69	620	418	191	227	202	88	114
70-74	536	348	159	189	188	82	106
75-79	380	256	96	160	124	52	72
80-84	253	179	52	127	74	30	44
85&UP	207	128	36	92	79	32	47

PERCENT OF COLUMN TOTAL

0-4	7.01	5.54	5.69	5.40	9.01	9.90	8.29
5-9	7.63	6.03	6.23	5.86	9.80	10.43	9.28
10-14	7.33	6.65	7.30	6.06	8.25	8.56	8.00
15-19	6.74	5.71	6.28	5.19	8.12	7.06	8.99
20-24	7.69	6.66	7.35	6.04	9.07	9.25	8.92
25-29	7.59	6.95	7.30	6.63	8.47	7.59	9.18
30-34	7.41	6.48	6.79	6.19	8.67	8.97	8.43
35-39	6.87	7.16	7.55	6.81	6.49	6.62	6.39
40-44	5.17	5.86	5.58	6.12	4.23	4.22	4.25
45-49	4.74	5.66	5.63	5.68	3.49	3.61	3.39
50-54	5.04	5.90	5.83	5.96	3.87	3.81	3.92
55-59	5.46	6.49	6.37	6.60	4.07	4.02	4.11
60-64	5.92	7.09	7.07	7.11	4.33	4.42	4.25
65-69	4.78	5.60	5.38	5.81	3.67	3.57	3.75
70-74	4.14	4.67	4.48	4.84	3.42	3.33	3.49
75-79	2.93	3.43	2.70	4.09	2.25	2.11	2.37
80-84	1.95	2.40	1.46	3.25	1.34	1.22	1.45
85&UP	1.60	1.72	1.01	2.35	1.44	1.30	1.55

SOURCE - NORTH CAROLINA OFFICE OF STATE BUDGET & MANAGEMENT

BASED ON 70-80 CENSUS DATA
PREPARED MAY 9, 1985

CHOWAN

PROJECTED POPULATION, APRIL 1, 1990, BY AGE, RACE, AND SEX

AGE	TOTAL	WHITE			OTHER		
		TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
TOTAL	13497	7730	3675	4055	5767	2528	3239
0-4	916	412	203	209	504	249	255
5-9	863	420	226	194	443	209	234
10-14	1088	484	235	249	604	280	324
15-19	970	507	258	249	463	212	251
20-24	749	365	192	173	384	124	260
25-29	894	466	242	224	428	184	244
30-34	1037	557	282	275	480	183	297
35-39	975	482	231	251	493	230	263
40-44	921	570	289	281	351	159	192
45-49	681	455	206	249	226	97	129
50-54	636	443	209	234	193	90	103
55-59	704	485	226	259	219	96	123
60-64	716	507	234	273	209	93	116
65-69	785	538	253	285	247	111	136
70-74	581	388	172	216	193	82	111
75-79	452	296	122	174	156	65	91
80-84	283	196	56	140	87	32	55
85&UP	246	159	39	120	87	32	55
			PERCENT OF COLUMN TOTAL				
0-4	6.79	5.33	5.52	5.15	8.74	9.85	7.87
5-9	6.39	5.43	6.15	4.78	7.68	8.27	7.22
10-14	8.06	6.26	6.39	6.14	10.47	11.08	10.00
15-19	7.19	6.56	7.02	6.14	8.03	8.39	7.75
20-24	5.55	4.72	5.22	4.27	6.66	4.91	8.03
25-29	6.62	6.03	6.59	5.52	7.42	7.28	7.53
30-34	7.68	7.21	7.67	6.78	8.32	7.24	9.17
35-39	7.22	6.24	6.29	6.19	8.55	9.10	8.12
40-44	6.82	7.37	7.86	6.93	6.09	6.29	5.93
45-49	5.05	5.89	5.61	6.14	3.92	3.84	3.98
50-54	4.71	5.73	5.69	5.77	3.35	3.56	3.18
55-59	5.22	6.27	6.15	6.39	3.80	3.80	3.80
60-64	5.30	6.56	6.37	6.73	3.62	3.68	3.58
65-69	5.82	6.96	6.88	7.03	4.28	4.39	4.20
70-74	4.30	5.02	4.68	5.33	3.35	3.24	3.43
75-79	3.35	3.83	3.32	4.29	2.71	2.57	2.81
80-84	2.10	2.54	1.52	3.45	1.51	1.27	1.70
85&UP	1.82	2.06	1.06	2.96	1.51	1.27	1.70

SOURCE - NORTH CAROLINA OFFICE OF
STATE BUDGET & MANAGEMENT

PREPARED MAY 9, 1985

CHOWAN

PROJECTED POPULATION, JULY 1, 1995, BY AGE, RACE, AND SEX

AGE	TOTAL	WHITE			OTHER		
		TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
TOTAL	13808	7887	3714	4173	5921	2526	3395
0-4	862	383	189	194	479	237	242
5-9	987	436	214	222	551	263	288
10-14	877	431	224	207	446	207	239
15-19	932	425	207	218	507	211	296
20-24	863	465	233	232	398	171	227
25-29	792	401	213	188	391	121	270
30-34	900	468	234	234	432	181	251
35-39	1052	584	296	288	468	175	293
40-44	988	514	247	267	474	210	264
45-49	925	582	291	291	343	150	193
50-54	731	501	227	274	230	96	134
55-59	648	470	217	253	178	81	97
60-64	718	497	230	267	221	94	127
65-69	684	482	216	266	202	87	115
70-74	684	473	208	265	211	91	120
75-79	485	327	127	200	158	63	95
80-84	353	239	80	159	114	44	70
85&UP	327	209	61	148	118	44	74

PERCENT OF COLUMN TOTAL

0-4	6.24	4.86	5.09	4.65	8.09	9.38	7.13
5-9	7.15	5.53	5.76	5.32	9.31	10.41	8.48
10-14	6.35	5.46	6.03	4.96	7.53	8.19	7.04
15-19	6.75	5.39	5.57	5.22	8.56	8.35	8.72
20-24	6.25	5.90	6.27	5.56	6.72	6.77	6.69
25-29	5.74	5.08	5.74	4.51	6.60	4.79	7.95
30-34	6.52	5.93	6.30	5.61	7.30	7.17	7.39
35-39	7.62	7.40	7.97	6.90	7.90	6.93	8.63
40-44	7.16	6.52	6.65	6.40	8.01	8.31	7.78
45-49	6.70	7.38	7.84	6.97	5.79	5.94	5.68
50-54	5.29	6.35	6.11	6.57	3.88	3.80	3.95
55-59	4.69	5.96	5.84	6.06	3.01	3.21	2.86
60-64	5.20	6.30	6.19	6.40	3.73	3.72	3.74
65-69	4.95	6.11	5.82	6.37	3.41	3.44	3.39
70-74	4.95	6.00	5.60	6.35	3.56	3.60	3.53
75-79	3.51	4.15	3.42	4.79	2.67	2.49	2.80
80-84	2.56	3.03	2.15	3.81	1.93	1.74	2.06
85&UP	2.37	2.65	1.64	3.55	1.99	1.74	2.18

SOURCE - NORTH CAROLINA OFFICE OF STATE BUDGET & MANAGEMENT

BASED ON 70-80 CENSUS DATA
PREPARED MAY 9, 1985

However, it is quite interesting to note that from 1985 to 1990, the school-age population in the County (from 5-19) is projected to increase by 109 persons, but decline by 125 between 1990 and 1995, yielding a net 10-year loss of 16 potential students. Chowan County has a declining school-age population (see Table 6, below).

TABLE 6: Selected Age Group Summary: 1985-1995

Selected Age Group	1985	% Total Pop.	1990	Num. Change (85-90)	1995	Num. Change (90-95)	Total Change 85-95
5-19	2,812	21.7	2,921	109	2,796	-125	- 16
20-59	6,476	49.9	6,597	121	6,899	302	423
60+	2,763	21.3	3,063	300	3,251	188	488

Source: N.C. State Data Center, Office of State Budget and Management

b. Dispersal

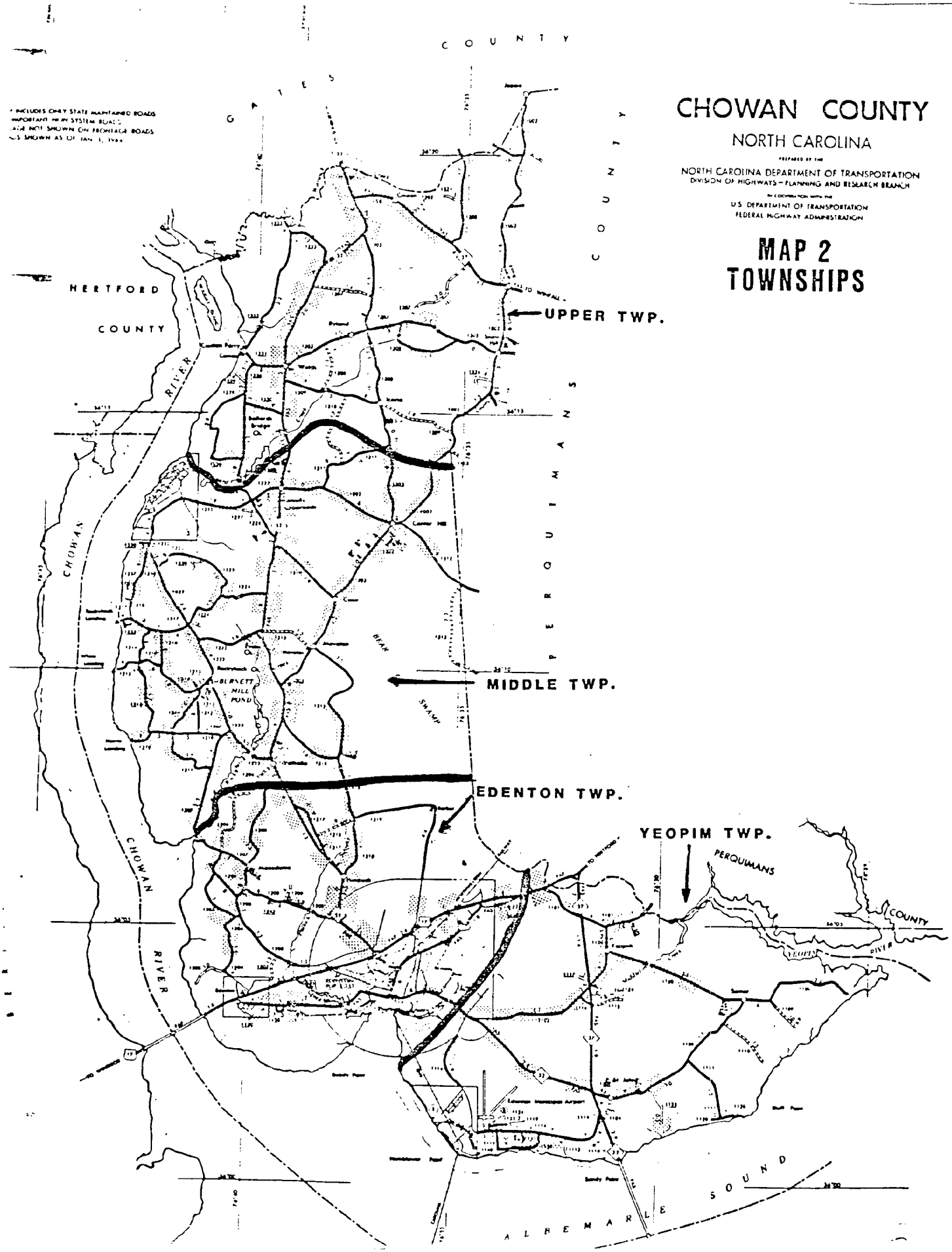
There are four (4) Townships in Chowan County, as Map 2, page 9 shows. The County's population is dispersed throughout the Townships, with the largest concentrations being in the Edenton and Middle Townships. The Town of Edenton is included in the Edenton Township, and two large subdivisions, Arrowhead and Chowan Beaches, are located in the Middle Township. Most of the rest of the population is located in rural communities at crossroads intersections with major highways or paved secondary routes in areas such as Rockyhock, Valhalla, Smalls Crossroads, Welch, and Center Hill. Table 7, below, shows the population within each township from 1950 to 1980.

TABLE 7: Chowan County Township Population: 1950-80

Township	1950	1960	1970	1980	Pct./Num. Change 70/80	
Edenton	7,508	7,294	6,814	7,790	+976	(+14.3)
Edenton	(4,468)	(4,458)	4,766	(5,357)	+591	(+12.4)
Middle	2,232	2,244	1,840	2,557	+717	(+39.0)
Upper	1,499	1,449	1,278	1,294	+ 16	(+ 1.3)
Yeopim	1,301	762	832	917	+ 85	(+10.2)

Sources: U. S. Census; Albemarle Commission

Edenton Township, which includes the Town of Edenton, gained 976 persons between 1970 and 1980, with the Town gaining 591 of those persons during the period. This is perhaps indicative of new residences being developed, both inside and outside, but near


CHOWAN COUNTY
NORTH CAROLINA
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS — PLANNING AND RESEARCH BRANCH
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
MAP 2
TOWNSHIPS
UPPER TWP.
MIDDLE TWP.
EDENTON TWP.
YEOPIM TWP.
HERTFORD COUNTY
GATES COUNTY
PERQUIMANS COUNTY
CHOWAN RIVER
PERQUIMANS
BEAR SWAMP
BURNETT MILL POND
ALBEMARLE SOUND

the Town limits of Edenton. It appears that the growth trend of the Edenton Township will likely continue. While all four Townships experienced population gains from 1970-80, the Middle Township grew at the fastest rate--39.0%. In the northwest section of this Township, soils are more suitable for placement of septic tanks, which is important because of the absence of a centralized sewer system in the County. Additional significant growth is forecast for the Middle Township throughout this planning period.

c. Seasonal Population

There appears to be a growing number of "second homes" being developed or mobile homes being placed along the Albemarle Sound and Chowan River, contributing to some seasonal population changes. Also, "Historic Edenton," one of the earliest settlements in colonial North Carolina, continues to be a tourist attraction in Chowan County and contributes to some seasonal population increases. Unlike some other coastal areas, however, currently there are no major fluctuations in the population which would exert undue pressures on the provision of public facilities or services.

d. Population Summary

The analysis of existing and projected population in Chowan County suggests the following trends:

(1) A three-decade-old trend of population losses ended in 1980 and has been replaced by a gradual growth trend, projected through 1995. The racial composition of the County has remained stable and is projected to continue, with non-whites composing about 43% of the population. Also, females will continue to outnumber males and increase in overall percentages throughout the planning period.

(2) Overall, the older segment of the population (60 and over), is projected to increase as a percent of the total population, while the percent of the middle age-ranges (from 20-59) will increase in numbers, but remain fairly stable as a percent of the total population through 1995. Since the older population is projected to increase somewhat, there is suggested a need for more elderly care facilities.

(3) There should be no "major" shifts in the school-age population throughout the planning period, except for a slight decrease in the number of potential pupils. Therefore, it is suggested that there will be no need for expanded educational facilities on the basis of increased population.

(4) The increased population growth from 1985 to 1995 will likely concentrate in the Edenton and Middle Townships, with some increase also in the Yeopim Township (Cape Colony - Country Club area). A total of 848 additional persons are projected for Chowan during the period. At an average household size of 2.5 persons (which is slightly smaller than the 1980 Census average of 2.85, but consistent with national trends), this would translate into 339 additional households.

2. Economic Analysis

a. General

The economic picture for Chowan County has steadily been improving. The County's economic base continues to be primarily agricultural, but with increasing diversification. Other significant elements of Chowan County's economy include manufacturing, commercial forestry, and commercial fishing. Existing economic conditions are discussed in more detail, below.

b. Agricultural

Total farm income has fluctuated since the 1981 Land Use Plan Update, as Table 8, page 12 shows. Between 1983 and 1984, regular farm income actually decreased by nearly 3 million dollars in 1983. Even when government payments, particularly the Payment-in-Kind (PIK) program, which was a one-year program in 1983, are taken into account, total farm income in 1983 was still 5% less than that for 1982. However, there was some slight overall gain in 1983. Field crops and vegetables, most notably peanuts, soybeans, corn, cotton, tobacco, sweet potatoes, and watermelons, produce the most farm income. Livestock production, mostly hogs, accounts for the majority of the rest of farm income. Income from hog production and from beef production declined during the period 1982-1984.

It is interesting to note that, perhaps consistent with national trends, the number of farms and total farm acreage in Chowan County is declining. According to the 1982 U.S. Census of Agriculture: Preliminary Report, between 1978 and 1982, the total number of farms declined from 302 to 259 during the period. This decrease by 53 farms represents a total decrease of 17%, or about four farms per year. However, it appears that some smaller farms became part of larger ones, since although the number of farms declined, the average size of each farm rose from 184 acres in 1978 to 211 acres in 1982. This trend of fewer, but larger farms in Chowan County is significant.

TABLE 8: Chowan County Agricultural Income: 1982-84

Agricultural Income (000's)

	Field Crops	1982	1983	1984
1.	Peanuts	4.724	4.566	5.764
2.	Soybeans	3.163	2.895	2.731
3.	Corn (for grain)	3.217	2.156	2.795
4.	Cotton (lint)	1.974	1.007	2.208
5.	Tobacco, Flue-cured	1.371	.943	1.126
6.	Cotton seed	.184	.239	.652
7.	Wheat	.300	.189	.242
8.	Other (rye, grain, sorghum, oats, etc.)	.169	.289	.103
	Subtotal	15.102	12.284	15.621
	*Vegetables and berries	2.910	3.364	3.960
	Nursery & Greenhouse	.360	.550	.550
	Livestock			
	Hogs	4.578	3.347	3.347
	Beef	.384	.379	.378
	Poultry	1.855	2.490	1.818
	Honey	.117	.063	.063
	Subtotal	10.204	10.193	10.116
	Total Regular Income	25.306	22.477	25.737
	*Government Payments	-0-	1.481	.188
	TOTAL	25.306	23.958	25.925

Source: N.C. Agricultural Extension Service - Annual Estimate of Cash Farm Income

* Includes Payment-in-Kind (PIK) Program Income

c. Commercial Forestry

TABLE 9: Chowan County Forestry Income, 1982 - 1984

	1982	1983	1984
Pulpwood	$ 29,790	$ 570,200	$ 16,000
Lumber	42,255	2,280,800	534,432
Total	$ 72,045	$2,851,000	$ 550,432

Source: N. C. Agricultural Extension Service, Annual Estimates of Cash Farm Income

Overall forestry income in the County was low in 1982, increased substantially in 1983, and again fell sharply in 1984. Forestry income has been quite irregular. Of the County's 114,800 land acreage (excluding water acres), approximately 64,700 acres are in forestlands. This is nearly 60% of the total land acreage. Most of the commercial forestlands in the County are owned by large, corporate landholders. The most significant among these are Weyerhauser, Union Camp, and Champion International, Inc.

d. Commercial Fishing

Nearly a third of the area within Chowan County's jurisdiction consists of water, i.e., portions of the Chowan River and Albemarle Sound. A substantial amount of commercial fishing occurs both in the Albemarle Sound and in the Chowan River. However, for many years, serious pollution of the Chowan River has adversely affected fish landings in the County. Recent state and local efforts to improve water quality, however, may be contributing to increasing landings and income. According to the North Carolina Division of Marine Fisheries, the commercial catches steadily increased from 1981 through 1985, with 1982 and 1985 being exceptional years. Notice Table 10, below:

TABLE 10: Chowan County Commercial Fishery Income, 1982-1985

	1982		1983		1984		1985		% Pound Change
	Pounds	$ Value	Pounds	$ Value	Pounds	$ Value	Pounds	$ Value	82 - 85
Total Catch	7,089,979	727,144	4,911,080	519,941	5,282,063	666,679	9,622,835	991,933	+35.7%

Source: N.C. Division of Marine Fisheries

For the years 1982 and 1983, Chowan catches ranked fifth among the State's 21 coastal counties, and fourth for 1985.

e. Manufacturing and Commercial Activity

Other major income sources for Chowan County include income from manufacturing as well as from wholesale and retail trade and services. According to the U. S. Bureau of the Census' County Business Patterns, 1983, the annual business payroll increased steadily from 1980 throuth 1983. Notice Table 11, below:

TABLE 11: Chowan County: Establishments & Payroll, 1980-83

	1980	1981	1982	1983
No. Establishments	252	245	250	288
Annual Payroll (000's)	31,354	34,767	35,427	38,148

Source: County Business Patterns, 1980, 1981, 1982, and 1983, U.S. Bureau of the Census

As Table 11 shows, income from businesses, including manufacturing, wholesale-retail trade, and services, steadily increased in Chowan County from 1980 through 1983, despite a slight decline in the number of establishments between 1980 and 1981. Overall, however, within the three-year period, 36 additional establishments were noted, and annual payroll increased by 6.8 million dollars (not accounting for inflation). This is a significant economic trend for Chowan County.

f. Tourism

Income from tourism has been on the rise in Chowan County and has a substantial impact upon the County's economy. Historic Edenton is an appealing waterfront community, stocked with colonial legend and lore and beautiful historic homes. The friendly shops and stores, pleasant restaurants, and exceptional "bed-and-breakfast inns" accommodations are attracting more and more people each year. Notice Table 12.

TABLE 12: Chowan County Tourism Income 1981-84

Year	Expenditures (Millions)
1981	1.68
1982	2.03
1983	2.59
1984	3.74

Source: N.C. Travel and Tourism Division, Department of Commerce

g. Employment and Income

(1) Employment: Overall employment in Chowan County has been declining since 1979, even in the face of a slightly expanding labor force. However, in 1984, both the labor force and employment levels increased. Notice Table 13, below, which shows the general employment pattern from 1979 through 1983.

TABLE 13: Chowan County Unemployment Rate, 1979-83

	1981	1982	1983	1984	Change 1981-84
Civil. Labor Force	5,060	4,460	5,020	5,230	170
No. Employed	4,770	4,549	4,640	4,930	160
No. Unemployed	290	420	380	300	10
Unemployment Rate	5.7	8.5	7.6	5.7	0
N. C. Unemp. Rate	6.4	9.0	8.9	6.8	0.4

Source: N. C. Employment Security Commission

As the data in Table 13 shows, Chowan County's average annual unemployment rate, from 1981 through 1984, has been favorable when compared to the rate for North Carolina. From 1981 to 1984, the County's labor force increased by a net of 170 persons, or by 3.4%. However, during the same period, the number of unemployed increased by only 10 persons, impacting favorably overall on employment conditions in the County, relative to other counties and the state as a whole. In 1984 (the latest year for annual statistics), Chowan County had an unemployment rate substantially lower than that for North Carolina. Statistics for 1985 are expected to show continued improvement in the local employment picture.

In 1980, the largest occupational categories of the civilian labor force, according to the N. C. Employment Security Commission, Bureau of Labor Market Research, were operators and fabricators (1,157/22.7%); managerial and professional speciality occupations (757/14.8%); precision production, craft, and repair occupations (639/12.5%); service occupations (571/11.2%); and administrative support occupations, including clerical (543/10.6%).

(2) Income: Although the income picture in Chowan County has been improving, there are still a number of families and individuals below the poverty income level. The 1980 U. S. Census data showed that 685 (or 19.8%) of the County's 3,466 families (enumerated in 1979) had below poverty incomes.

TABLE 14: Chowan County: Families Below Poverty Level, 1969-79

	1969		1979	
	No.	Percent	No.	Percent
Chowan County	-	-	685	19.8
N. C.	-	16.3	-	11.6

Source: U. S. Census, 1970, 1980

According to the 1980 Census, Chowan County's percentage of families with below poverty incomes is significantly higher than the state's percentage. Likewise, this was true for individuals with incomes below the poverty level, as noted in Table 15, below:

TABLE 15: Chowan County: Persons With Incomes Below Poverty Level, 1969-79

	1969		1979	
	No.	Percent	No.	Percent
Chowan County	-	-	2,972	23.7
N. C.	-	20.3	-	14.8

Source: U. S. Census, 1970, 1980

Percentage-wise, the improvement in Chowan County was greater than for the state as a whole. Another measure of local income posture is growth in per capita personal income. Notice Table 16, below:

TABLE 16: Chowan County: Per Capita Personal Income, 1979-83

Year	Chowan County	N.C.	U.S.	Chowan's Pct. of N.C.	Chowan's Pct. of U.S.
1979	5,825	7,104	8,651	82%	67%
1980	6,276	7,774	9,494	81%	66%
1981	7,522	8,655	10,544	87%	71%
1982	7,663	9,148	11,113	84%	70%
1983	8,049	9,805	11,687	82%	69%

Source: U.S. Bureau of Economic Analysis

Per capita income has been increasing in Chowan County. The County's per capita personal income is significantly below that of the state as a whole and substantially less than the U.S. per capita income.

h. Local Government Revenue Summary

Local government revenues, most notably from property taxes, also can be indicative of local economic trends. Notice Table 17, below. From 1981 to 1982, prior to revaluation, assessed values rose by nearly $10 million in one year, which is quite substantial.

TABLE 17: Property Tax Values Chowan County 1981-1984

Year	Assessed Value (Millions)	Tax Rate/100
1981	$149,856	1.04
1982	159,554	1.10
1983*	278,283*	.58*
1984	284,087	.605

Source: Chowan County Manager's Office
*Year of Revaluation

i. Economic Summary

The analysis of current economic conditions indicates the following trends:

(1) Agriculture is and will remain a dominate force in the County's economic base. However, other income sources, notably manufacturing, commercial fishing, forestry, and tourism, are increasing in importance.

(2) Overall, income increased in Chowan between 1970 and 1980. Nevertheless, it appears that additional economic activity will be needed during the next 10 years if previous income gains are to be maintained.

3. Housing

The provision of adequate housing to shelter a population is always an important consideration for any jurisdiction. The issue of housing and residential trends was briefly mentioned in the 1981 Plan Update. However, final 1980 Census information on housing was not then available. Notice the summary below in Table 18:

TABLE 18: 1980 Census Chowan County Housing Summary

Item	No
Total Units	5,265
Vacant, Seasonal, Migratory	466
Year-Round Units	4,799
Vacant Year-Round Units	449
Occupied Year-Round Units	4,350
Persons in Occupied Units	12,413
Average Household Size	2.85

Source; U. S. Census, 1980.

The average household size declined from 3.3 persons in 1970 to 2.85 according to the 1980 Census. It appears that Chowan County has a significant vacancy rate, i.e., 9.3% of all year-round units in 1980. However, a number of these units may be considered "substandard" since only 181 were reported to be either "for sale" or "for rent" or "held for occasional use," and 268 listed as "other vacant," according to the Census. Although the Census does not have specific measures for "substandard" or "standard," the number of units lacking complete indoor plumbing for exclusive use provides some indication. The 1980 Census reported that 488 (10.1%) of the County's 4,799 year-round units lacked complete indoor plumbing for exclusive use, with 301 of the units being occupied and 187 vacant. Of the 301 occupied units in this category, two-thirds (202) are renter-occupied.

During land use surveys conducted in late 1985, it was noted that there was a significant number of units which appeared to be substandard scattered around the County. Most new construction appears to be taking place in the Edenton Township and in the Middle Township.

Another notable housing trend is the continuing growth of mobile homes in the County. The 1980 Census reported a total of 456 mobile home units. However, between 1982 and 1984, according to records in the County Building Inspector's office, permits were issued for the placement of 175 additional mobile homes. This trend will likely continue somewhat, as mobile homes become more and more a viable standard housing alternative for Chowan County citizens.

C. EXISTING LAND USE ANALYSIS

1. General Patterns

The general land use pattern has changed little since the 1981 Update. Notice Table 19, below, which was compiled from data contained in the Profile of North Carolina Counties, 1981, and the U.S. Census of Agriculture, 1982.

TABLE 19: Major Land Uses in Chowan County 1985 Estimate

Category	Acres	% of Total
Land	114,800	76.0
- Farms	-54,749	-47.7
- Urban & Built-up	- 4,400	- 3.8
- Forestland	-55,651	-48.5
Water	37,100	24.0
Total	151,900	100.0

Sources: U.S. Census of Agriculture, and Profile of North Carolina Counties, 1981

According to the U.S. Census of Agriculture, the amount of land in farms (including croplands, pasturelands, home sites, and woodlands) was 57,502 acres in 1978, which was 2,753 acres more than the current 1985 estimate. This loss of farm acreage is perhaps not only an indication of fewer but larger farms in the County, but also a modest conversion trend of farmland being used for non-farm or "urban" uses. The majority of the land area in Chowan County is covered with forests and there does not appear to be any strong trend of substantial conversion of forestland into other uses.

The primary "urban and built up" area in the County is the Town of Edenton, which is the only incorporated municipality in the County. As noted in both the 1976 Plan and 1981 Update, the potential for significant urbanized development (mostly residential) outside of Edenton exists in the Chowan Beach-Arrowhead Beach areas, and in the Cape Colony-Country Club area near the airport. Since the 1981 Plan Update, moderate development has continually taken place in these areas--almost exclusively residential. Additional information on existing land uses is presented in the following discussions. (See Map 3, Existing Land Use Map, attached.)

a. Residential Land Use

The primary concentration of residential land uses outside of Edenton is located along the shorelines and bank of the Chowan River and the Albemarle Sound in Chowan Beach-Arrowhead Beach, and

Cape Colony-Country Club. (See Maps 4-5, pages 22-23.) Additional unincorporated "crossroads" communities, usually consisting of a cluster of houses, one or two stores, a church, etc., are found along several of the major highways and secondary routes in the County. The most notable include Valhalla, Rockyhock, Smalls Crossroads, Welch, Riverton, and Tyner.

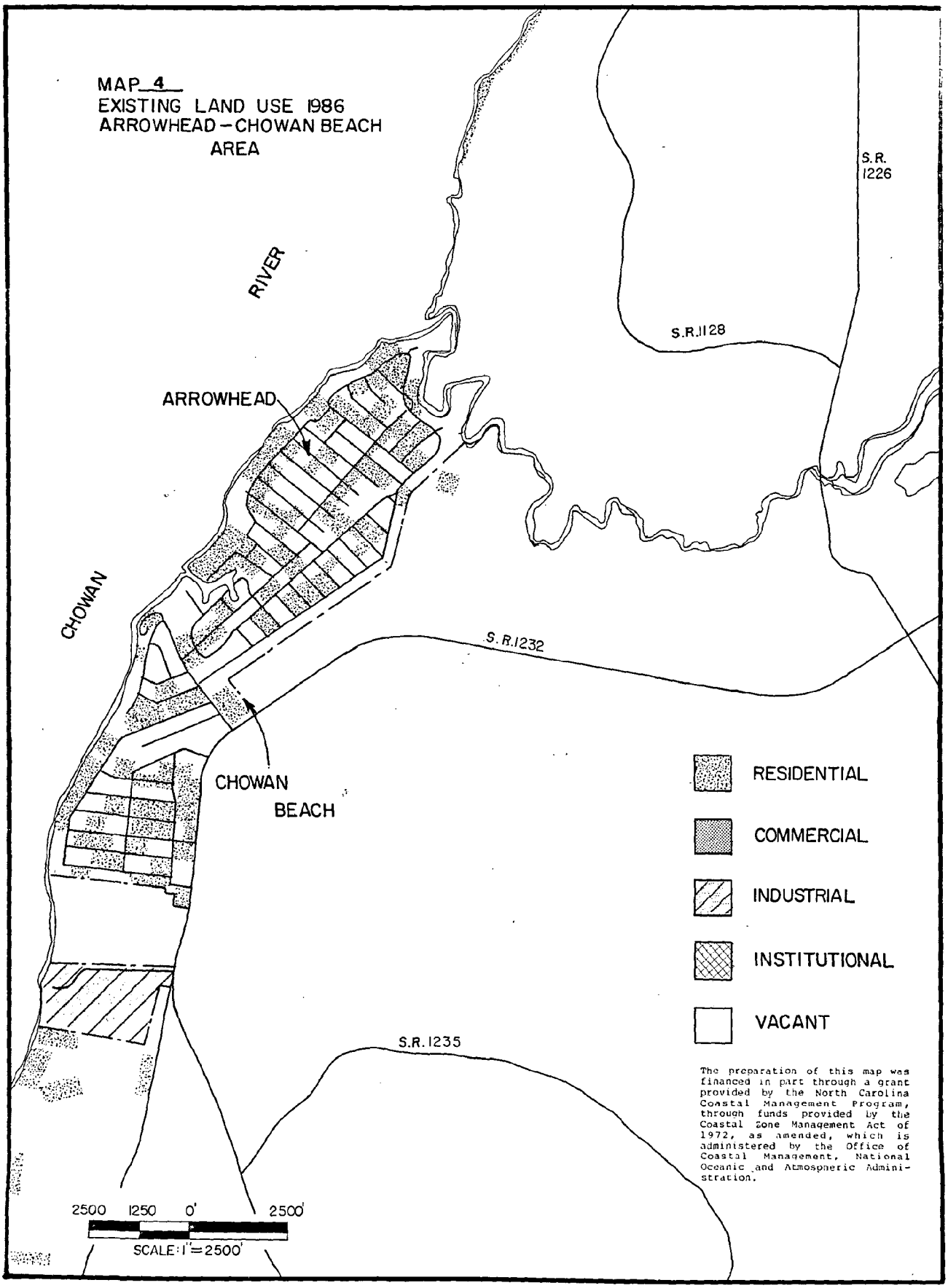
As noted in the 1981 Update, residential lots in the Cape Colony, Arrowhead Beach, and Chowan Beach Subdivisions were sold prior to the County's adoption of subdivision regulations and many are relatively small with 50-foot-wide lots. The Country Club area, however, was developed under the County's subdivision regulations and generally consists of larger, more spacious lots. Prior to August 1985, Chowan County did not enforce zoning controls anywhere in the County. However, effective August 1, 1985, a partial zoning ordinance covering the Cape Colony-Country Club area was enacted. This ordinance, which includes regulations on the placement of mobile homes and single-family homes, will have some impact on future single-family development in these areas. It should be noted that for the years 1982 through 1984, a total of 133 permits were granted for the construction of new conventional single-family dwellings, and 175 permits for mobile homes. This is a three-year combined total of 308 residential units. The annual average for conventional "stick-built" units during the period was 44 units, and 58 mobile home units per year, for a combined average of 102 units per year. There appears to be a trend of continuing residential development in the County.

b. Commercial Land Uses

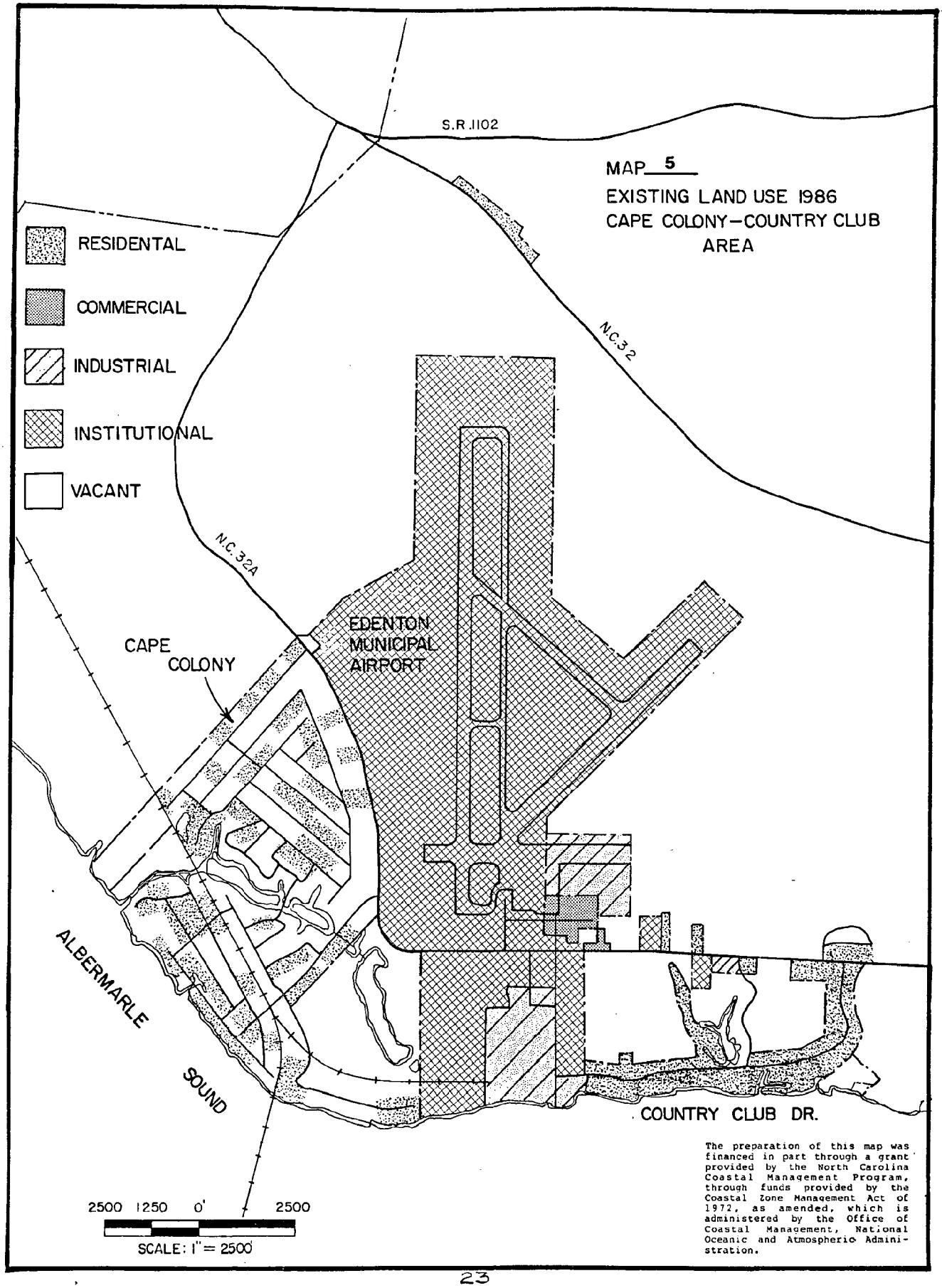
The majority of commerical land uses is concentrated within the Town of Edenton, in the Central Business District, shopping centers, or the immediate environs around the Town. Out in the County, however, commercial land uses are mostly scattered, with few concentrations. However, there is a concentration of commercial activity near Edenton Municipal Airport, along S.R 1114, between the Cape Colony and Country Club Subdivisions. Included within this area are two trucking companies and a community store and gasoline station. In other areas of the County, especially at crossroads communities, it is common to find small grocery stores with gasoline service pumps along major thoroughfares, such as U.S. Highway 17 and N.C. Highways 32 and 37.

c. Industrial Land Use

Outside of Edenton and its immediate environs, industrial land uses are located near the Airport and south of the Chowan Beach area near the Chowan River. Industrial tracts range in size from 4 acres to 54 acres. Below is a list of the significant industries located out in the County, along with approximate acreages. (See Existing Land Use Map, attached.)



The preparation of this map was financed in part through a grant provided by the North Carolina Coastal Management Program, through funds provided by the Coastal Zone Management Act of 1972, as amended, which is administered by the Office of Coastal Management, National Oceanic and Atmospheric Administration.



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° Fiberform (boats, luxury cruisers)	54 ac.
° United Piece Dye Works	49 ac.
° Atlantic Forest Products	37 ac.
° Tee-Luck Concrete	9 ac.
° Union Camp - Wood Storage	5 ac.
° Murray Nixon Seafood Processing	4 ac.

d. Institutional Land Uses

Institutional land uses generally consist of government uses, such as schools, or churches, cemeteries, or public recreational areas. The most significant tract of government-owned land beyond the immediate environs of Edenton is the Municipal Airport, which consists of 717 acres. Another significant tract is the Edenton Sewage Treatment Plant, consisting of 27 acres and located northwest of the Cape Colony Subdivision near the Albemarle Sound.

e. Land Use Summary

The land use changes in Chowan County since the 1981 Land Use Plan Update have not been dramatic, but are moving along previously identified trends, i.e., increasing residential development in the Chowan Beach-Arrowhead Beach areas, as well as the Cape Colony-Country Club area. However, informal proposals have been discussed concerning the development of a sizeable residential subdivision in the Macedonia area, which is also in the Edenton Township. Plans have also been presented concerning a substantial expansion of both the golf course and residential areas of Country Club. Also, it appears that the most likely areas for significant industrial development outside of Edenton is in the environs around the Airport. Mobile home placement has become a significant factor over the past few years in the County. This is partly an economic factor, i.e., mobile homes represent a less expensive alternative for viable, adequate housing for many of the County's rural residents. Although there has been some conversion of farmland into non-farm uses, the amount of lands involved are not overwhelmingly substantial and do not appear to indicate a major trend. Generally, existing land use patterns, as discussed above, are projected to continue throughout the period covered by this 1986 Plan Update, i.e., 5-10 years. However, other factors affecting land use, such as the absence of centralized sewer and septic tank limitations, introduction of zoning and other control devices, and continuing water quality concerns, will be addressed in other parts of this plan.

2. Significant Land Compatibility Problems

In the conventional application of the concept, there are few significant land compatibility problems in Chowan County. A land compatibility problem is generally identified when two or more land use types are adjacent to each other and one is somehow

restricted from expansion because of adverse conditions caused by the other, thus discouraging additional investment. In the 1981 Plan Update, there were four issues addressed as "land compatibility" problems, which were: (a) conversion of rural land to urban uses; (b) encroachment or drainage of wildlife habitat; (c) Airport Land Use compatibility, and (d) residential neighborhood encroachment of non-residential uses. Each of these issues is briefly presented below and their status updated for this 1986 Plan.

a. Conversion of Rural Land to Urban Uses

As pointed out in the 1981 Plan Update, this activity has not been a significant problem in Chowan County. Outside of Edenton, the majority of new dwelling units have been locating in previously settled and developing areas, such as the Arrowhead Beach-Chowan Beach and Cape Colony-Country Club areas. Also, the pattern of single-family dwellings, whether conventional or mobile homes, being scattered along major thoroughfares on from one-half to one-acre lots, has continued. Except for a possible rural, low-density subdivision, it is unlikely that significant amounts of productive forestry or farming areas have undergone rural to urban conversion in Chowan County.

b. Encroachment or Drainage of Wildlife Habitat

There was concern expressed in the previous plans for Chowan County over the impact of drainage for commerical forestry or agricultural operations upon the habitat for wildlife such as ducks, rabbit, or raccoon. However, contacts with the N.C. Wildlife Commission has provided no indications that significant habitat destruction resulting from drainage has been a considerable problem in Chowan County.

c. Airport Land Use Compatibility

Of the other issues discussed, this is the one more closely fitting the definition of incompatible land uses. As stated in the 1981 Update, the Edenton Municipal Airport is a "General Aviation" facility located southeast of the Town of Edenton and within one-half mile of the Cape Colony and Country Club Subdivisions. Runways 1-19 and 6-24 are oriented such that incoming or departing flights pass directly over homes in those two areas, and these operations do produce some noise, mostly from single-engine aircraft. With the existing commercial and light industrial activity already occurring in the vicinity, it is quite possible that similar developments will be attracted to the area. Both the Town of Edenton and Chowan County have taken steps to protect airspace (in compliance with Federal Aviation Administration guidelines) and to encourage utilization of land conducive to the overall location. In July of 1985, the Chowan County Board of Commissioners adopted the first zoning ordinance for the County, which was limited to the Cape Colony-Country Club area, including the Airport. The ordinance, which became effective August 1985, classifies most of

the land near the Airport as "industrial," and includes supplementary regulations in the ordinance on "Airport Height Restrictive Areas" (Article XII, Chowan County Zoning Ordinance). Also, the undeveloped area within and immediately adjacent to Cape Colony and Country Club subdivisions are classified as either of two residential districts, thus limiting their use to predominantly residential purposes. These actions should be quite effective in dealing with Airport area compatibility problems.

d. Residential Neighborhood Encroachment of Non-Residential Uses

In previous Plans, concern was expressed about the proximity of residential uses to farming or timbering operations, and the potential adverse impacts of noise or odors. Also, residents of the Cape Colony area expressed in 1976 (but not in 1981) concern over increased traffic along S.R. 1114 (shown as N.C. 32-A on some maps) because of the commercial and industrial potential near the Airport. However, neither of these two concerns have developed into problems of unmanageable proportions. Traffic volumes along S.R. 1114, also known as "Old Base Road," will likely increase as development increases. Adequate provision of funds for maintenance and improvements of this road is an issue which will need to be addressed.

The aforementioned introduction of "zoning" as a land use control device in the Airport vicinity will also address this potential problem. Also, recent traffic counts along N.C. 32-A provided by the N.C. Department of Transportation indicate that traffic volumes are significantly under the road's current capacity. This means that it is theoretically capable of handling more traffic than it has been to date.

3. Major Problems From Unplanned Development

Since the adoption of the 1981 Plan Update, no new major problems from unplanned development have emerged. However, one problem noted in the 1981 Plan, i.e., the fact that Chowan Beach, Arrowhead Beach, and Cape Colony subdivisions were all designed prior to the enforcement of subdivision regulations by the County, is still somewhat relevant. Many relatively small, 50' wide lots are included within these developments and some are not suitable for placement of septic tanks. Although the internal street patterns have all been laid out, all of the streets have not been developed, and some of the ones which have been developed are not paved. An "incompatibility" problem exists in the sense that the lots which have been developed (most notably in the Arrowhead Beach-Chowan Beach areas) contain a mixture of cottages, permanent conventional single-family dwellings, and mobile homes. In the Cape Colony subdivision, however, conventional single-family units are separated from mobile home units by deed restrictions. Future incompatibilities for the undeveloped portions of the Cape Colony subdivision will be somewhat ameliorated by the adoption of the Zoning Ordinance, effective August 1, 1985. However, zoning regulations currently do not cover the Arrowhead Beach-Chowan Beach areas.

On the other hand, the Country Club Subdivision, located along the shore of the Albemarle Sound, was developed under the subdivision regulations, consists of generally, larger lots, and has a consistent residential development pattern, i.e., large single-family units.

4. Areas Experiencing or Likely to Experience Major Land Use Changes

No major deviation from previously established patterns are anticipated over the next 5-10 years. The presence of the County-wide water system may encourage the development of rural, low-density subdivisions away from currently developing areas. The unlikelihood of centralized sewer outside of Edenton will virtually assure that all development will be low-density. It should be noted that the Town of Edenton is developing a new "Land Application" sewage treatment plant to be located in the vicinity of S. R. 1200 where it intersects Pollock Swamp (see existing Land Use Map, attached). The land required for this type of system is relatively large. The Edenton sewage treatment system, expected to begin construction by the Spring of 1986 and be complete by late 1988, will cover nearly 670 acres of land in Chowan County (this area was classified as "community" in the 1981 Plan Update).

5. Identification of Areas of Environmental Concern (AECs)

Of the two broad categories of statutorily defined Areas of Environmental Concern (AECs) for Coastal North Carolina, i.e.,

Estuarine System AECs and Ocean Hazards AECs, only the Estuarine System is applicable to Chowan County. Although these AECs have not changed, it may be useful to define these important areas prior to listing them again in this Update.

a. Coastal Wetlands

Coastal wetlands or marshlands are defined as any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide waters reach the marshland areas through natural or artificial watercourses), provided this shall not include hurricane or tropical storm tides.

Coastal marshlands also contain some, but not necessarily all, of specific marsh plant species. There are no coastal wetlands or salt marshes in Chowan County of any significance. Although the majority of the County border is water (the Chowan River and Albemarle Sound) the occurrence of statutorily defined CAMA "wetlands" is insignificant. However, the general term "wetlands" can be used to describe some of the low-lying "wooded swamp" areas in the County. The area south of the U. S. 17 bridge can be characterized as a wooded swamp, for example.

b. Estuarine Waters and Estuarine Shorelines

Estuarine waters are defined in G. S. 113A-113(b)(2) as "all the water of the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers, and tributaries thereto seaward of the dividing line between coastal fishing waters and inland fishing waters, as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Natural Resources and Community Development filed with the Secretary of State, entitled "Boundary Lines, North Carolina Commercial Fishing -- Inland Fishing Waters," revised to March 1, 1965."

Estuarine shorelines are those non-ocean shorelines which are especially vulnerable to erosion, flooding, or other adverse effects of wind and water and are intimately connected to the estuary. These shorelines can be wetlands as well as dry land. This area extends from the mean high water level or normal water level along the estuaries, sounds, bays, and brackish waters, for a distance of 75 feet landward. It should be noted, however, that estuarine shorelines are only located adjacent to coastal or joint waters, and not inland waters.

As an AEC, Estuarine shorelines, although characterized as dry land, are considered a component of the estuarine system because of the close association with the adjacent estuarine waters. Estuarine waters and adjacent estuarine shorelines make up the

most significant components of the estuarine system in Chowan County. The significance of the estuarine system is that it is one of the most productive natural environments of North Carolina. It not only supports valuable commercial and sports fisheries, but is also utilized for commercial navigation, recreation and aesthetic purposes. Species dependent upon estuaries include menhaden shrimp, flounder, oysters and crabs. These species make up over 90 percent of the total value of North Carolina's commercial catch. These species must spend all or part of their life cycle in the estuary. The preservation and protection of these areas are vitally important. The estuarine waters and adjacent estuarine shorelines are substantial in Chowan County, and includes the following:

- The Albemarle Sound and all man-made tributaries.
- The Yeopim River (below Norcum Point; waters beyond Norcum Point are inland waters)
- Chowan River (joint waters from the north to 300 yards south of the U. S. 17 bridge

c. Public Trust Areas

Public trust areas are partially defined as all waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of state jurisdiction; all natural bodies of water subject to measurable lunar tides and lands thereunder to the mean high mark; all navigable natural bodies of water and lands thereunder to the mean high water level or mean water level, as the case may be. In other words, public trust areas are waters and lands thereunder, the use of which, benefits and belongs to the public.

- In Chowan County, all of the waters listed as Estuarine Waters and inland waters are considered Public Trust Areas. Other Public Trust Areas include:
- Pollock's Swamp
- Rockyhock Creek
- Dillard or Indian Creek
- Stumpy Creek
- Catherine, or Warwick Creek

Currently, all development and development-related activities within the designated AECs in Chowan County are regulated by the CAMA permit process and are guided by local policy (Regulations allow a local government to develop its own use standards for AECs

if they are more restrictive than the State's). At this time, however, Chowan County's regulations are not more restrictive than the State's. It is important to understand the distinction between Estuarine Waters and Public Trust Waters because of the different CAMA enforcement jurisdictions. For all Estuarine Waters, the area of CAMA permit jurisdiction includes the water and the 75-foot inland Estuarine Shoreline area. However, the permit jurisdiction for the Public Trust Waters includes only the water itself. Also, if an undesignated creek empties into either Estuarine Waters or Public Trust Waters, for permit purposes, it receives the same designation as the water into which it empties.

D. REVIEW OF CURRENT PLANS, POLICIES, REGULATIONS

1. Local Plans, Studies and Regulations

Since completion of the 1981 Plan Update, several important changes regarding regulatory ordinances and enforcement procedures have taken place in Chowan County. In the Summer of 1985, the County adopted a Zoning Ordinance for the Cape Colony - Country Club area and lands adjacent to the Edenton Municipal Airport; initiated enforcement of the State Building Code and hired a full-time Building Inspector for the first time; and adopted a "regular phase" Flood Insurance Ordinance, putting the County into the full phase of the National Flood Insurance Program. Additional information or local plans, studies, and regulations are listed and summarized below:

a. Edenton-Chowan County Land Use Plan, 1976

Prepared by DNRCD, jointly with Edenton under CAMA, this initial Plan provides a description of present condition of population, economy, and land use constraints to development. It discusses fragile and hazard areas, areas of environmental concern, areas with resource potential, and community facilities. It estimates future needs and sets out policies and objectives related to implementing those needs.

b. Chowan County Land Use Plan Update, 1981

This was the first 5-year update of the initial CAMA Plan (1976) and contains a re-assessment of existing conditions and projections of population, land use and economic conditions. Updated policy statements on various development issues and implementation strategies are also in the Plan Update. This update was not prepared jointly with the Town of Edenton.

c. Water System Rules & Regulations

Adopted in December, 1976, these regulations specify how the County-wide water system will be operated and maintained. It specifies the size line required for varying sized developments and restricts industrial usage according to location and system-wide needs. These regulations are linked directly to the subdivision regulations.

d. 201 Wastewater Facilities Study, 1976

A "201" Wastewater Facilities Plan was prepared for Edenton in 1976. A major recommendation of that plan was, "...that a Sanitary District be created to own, administer, manage, construct, operate and maintain wastewater collection and transportation facilities..." (sic) outside the corporate limits of the Town of Edenton. The "201" area of study included a slightly larger

geographic area than the extraterritorial jurisdiction of Edenton. Therefore, any lines outside the Town would be operated and built by such a "sanitary district."

e. Chowan County Subdivision Regulations, 1978

The Chowan County Planning Board, with technical assistance from N. C. DNRCD, prepared subdivision regulations which were adopted in 1978. These regulations govern the transition of raw land into new residential subdivisions and set out criteria for required facility improvements and general design standards. The subdivision ordinance is administered by the Board which reviews development proposals against the standards set out therein. For example, there is a stipulation that developers must provide water service at their own expense to County water system standards and they must pave interior streets to N.C.D.O.T. standards.

f. Federal Flood Insurance Program

The Federal Flood Insurance Program in Chowan County officially moved from the Emergency Phase to the Regular Phase in 1985 and is in effect throughout the County.

g. State Building Code

In 1985, the County adopted the State Building Code and employed a part-time Building Inspector.

h. Septic Tank Regulations

Septic tank regulations are administered by the Regional Health Department, which covers five counties. However, a Sanitarian is based in Chowan County.

2. State Agency Plans

a. Transportation Improvement Program, 1986-1995

This plan, prepared by the N. C. Department of Transportation and updated annually, is a statewide schedule of highway and bridge improvements to be undertaken during a 10-year period. Major projects proposed for completion in Chowan County include the replacement of the Albemarle Sound Bridge (N.C. 37), and two new access ramps on the Edenton Bypass (U.S. 17), i.e., intersections with Albemarle Street and Paradise Road. Additional minor improvements are proposed for several secondary routes in the County.

b. Statewide Comprehensive Outdoor Recreation Plan, SCORP

The purpose of the SCORP is to compile and analyze the existing supply of and demand for recreation facilities in the

State. The SCORP analysis is by regions and has no specific analysis for each County. Chowan County is in Region R.

3. Local Regulations

In addition to the regulations listed under Local Plans, i.e., zoning, subdivision regulations, State Building Code, flood insurance, and septic tank regulations, the CAMA major and minor permit process are also enforced in the County. However, Chowan County does not have and does not enforce other ordinances such as historic districts, nuisance, sedimentation and erosion control, or on local environmental impacts. The County also currently does not enforce a local mobile home park ordinance, although a draft ordinance was prepared in 1984. There is one additional policy of the Town of Edenton, as noted in the 1981 Update, which may affect potential land uses in the County and should be mentioned. The Town of Edenton, historically, has not provided sewer service outside of its corporate limits. Notice the following excerpt from the 1981 Plan Update.

> "Should an industry wish to locate near the airport, for example, and it required sewer service, the Town would not provide that service. However, if the County or an organized independent sewer utility district wished to serve that industry...or any portion of the County, the Town would permit such sewer lines to be connected to the Town's system and the Town would treat the resulting wastewater at its sewage treatment plant." (p. 27)

It should be noted, however, that as increasing urbanization occurs near Edenton, this policy could change.

4. Federal and State Regulations

In addition to the local ordinances and regulations discussed above, there are also various State regulations which could also affect land development in Chowan County.

E. CONSTRAINTS: LAND SUITABILITY

This section of the Chowan County Land Use Plan proposes to identify features of the land or landscape of the County which are or could pose serious constraints to development. Under land suitability, these constraints are generally considered under the broad categories of 1) physical limitations, i.e. hazardous (man-made or natural) areas, areas with soil limitations, hazardous slopes, etc., 2) fragile areas, i.e. AECs, complex natural areas, or areas with cultural (architectural or archaeological) significance, and 3) areas with resource potential, i.e. productive or prime agricultural or forest lands, or potentially valuable mineral sites (peat, for example). These elements were not discussed in the 1981 Land Use Plan Update. However, because of the implications for updating certain policies, they are discussed and presented below.

1. Physical Limitations

a. Man-Made Hazards

The most significant man-made hazard in Chowan County is the Edenton Municipal Airport, located south of Edenton near the Cape Colony and Country Club Subdivisions. In 1976, however, an "Airport Noise Impact and Land Use Control" (ANILUC) Map was prepared for the Edenton/Chowan County Airport Commission. The map was accepted as a guide for ensuring compatibility of surrounding land uses with the Airport. Also, the Zoning Ordinance, adopted by Chowan County in 1985, includes land adjacent to the Airport area and also contains a complete section titled "Airport Height Restrictive Areas." These rules are supplementary to the Zoning classifications, and serve as "overlay" restrictions. Both the ANILUC and the height restrictions in the Zoning Ordinance will help facilitate compatible land uses and also minimize adverse impacts in the Airport area.

b. Natural Hazard Area

(1) Flood Hazard Area: When the 1981 Land Use Plan Update was developed, a detailed Flood Insurance Study showing elevations and flood hazard areas, had not been prepared for Chowan County. However, the Federal Emergency Management Agency (FEMA) initiated a detailed study in 1982, with the final maps being effective on July 3, 1985. The study, which consists of a report and a series of maps of all of the unincorporated area of the County (the Town of Edenton has a separate study) shows the areas which are subject to inundation by the 100-year flood (zone "A"s) along with elevations, as distinguished from areas subject to minimal flooding dangers (Zone "C"). Not surprisingly, the detailed study shows that substantial sections of Chowan County

are subject to the 100-year flood. However, the majority of the land area is included in the "Zone C" classification, i.e., in the 500-year flood area and subject to minimal flooding. Most of the flood-prone areas, i.e., "Zone A" areas subject to a 1 percent change of flooding during any given year, are located in the western sections of the County, adjacent either to portions of the Chowan River or a major creek, such as Dillard's Creek or Rockyhock Creek. Some flood-prone areas include: the Cannon's Ferry area, Harris Landing, and land south of the U.S. 17 bridge from Bertie County and south of Riverton, around to Reedy Point. Other significant Zone A areas are located in the Yeopim River area (Drummond Point, for example), and land in the Middle Creek area. (See Map 6, High Hazard Flood Areas, attached.)

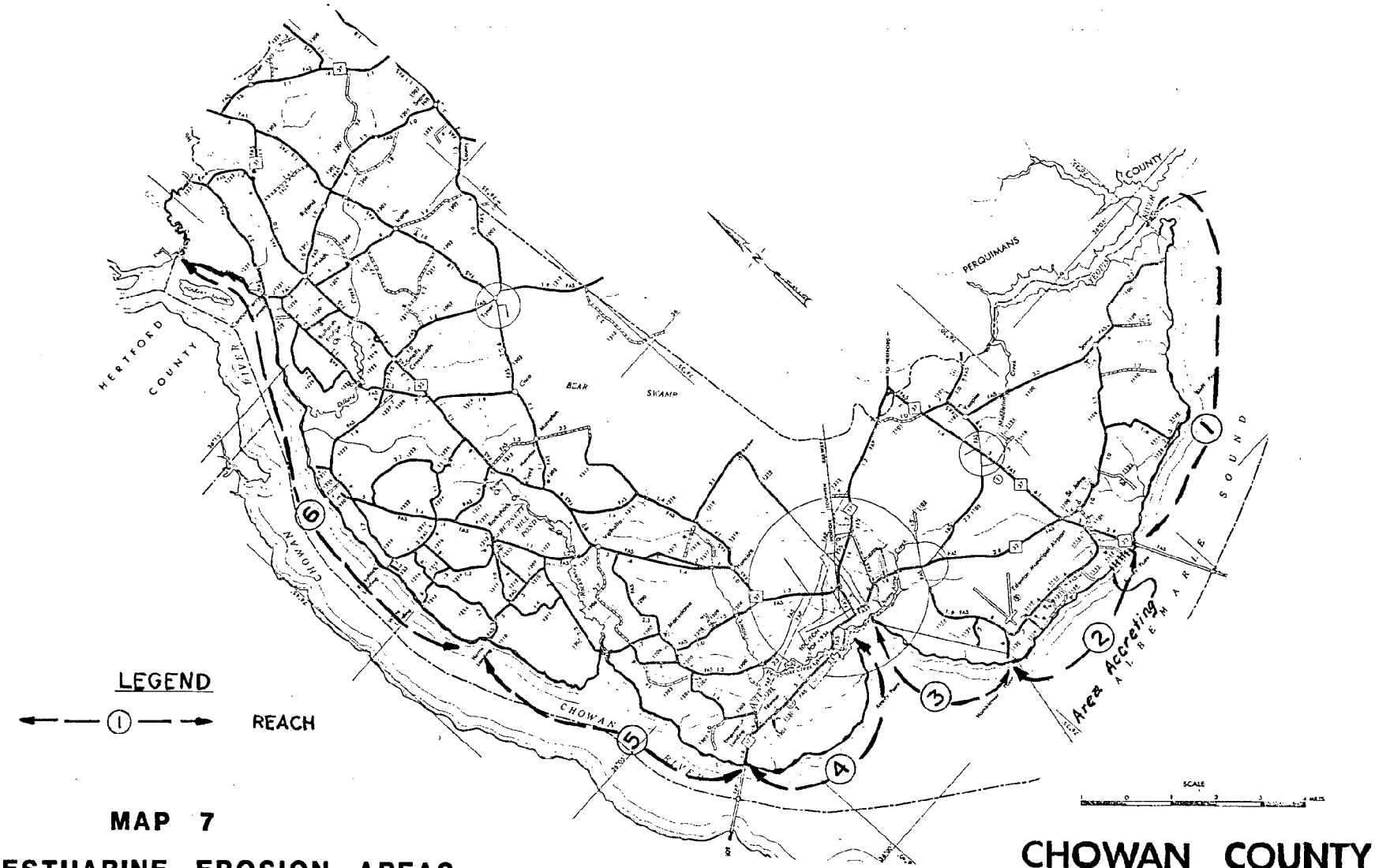
The "minimal" flood-prone areas include most of the lands in the major residential subdivisions of Arrowhead Beach-Chowan Beach, Cape Colony, and Country Club. According to the July 3, 1985, Flood Insurance Rate Maps, the elevation in Chowan County goes up to 18.73 feet above mean sea level (in the southeast sector near the Perquimans County border).

(2) Estuarine Erosion Area: Eroding shorelines along the coastal sounds and rivers in North Carolina has long been a major concern of soil and water conservationists. In October 1975, the results of a study involving 15 counties, and which was conducted by the USDA Soil Conservation Service, were published in a report titled "Shoreline Erosion Inventory, North Carolina." This is still the most recent "official" data available. Estuarine erosion rates were determined for several points or "reaches" along the Chowan County coastline, using aerial photographs covering 31 years. The erosion rate for Chowan County was determined to be 0.94 feet per year, which was next to the lowest rate among all 15 counties in the Study (Bertie County's rate was 0.92 feet per year, compared to 4.5 feet for Washington County, which had the highest rate). The Chowan County study covered 42.1 miles and showed 25.0 miles were eroding (see Map 7, page 36), for a total loss of nearly 148 acres over the 31-year period. The average width of the eroded area was 29 feet.

Although the above-cited study is somewhat dated, potential estuarine erosion is still a concern in Chowan County.

c. Areas with Soils Limitations

Detailed mapping of various soil types and survey interpretations were not available for Chowan County during the development of the 1981 Land Use Plan Update. However, the "Chowan and Perguimans Counties N.C. Soil Survey and Map Interpretations Soil Survey, November 1979," was completed and published in preliminary form. The report was prepared by the USDA Soil Conservation Service in cooperation with the Chowan and Perguimans Counties



MAP 7

ESTUARINE EROSION AREAS

CHOWAN COUNTY

NORTH CAROLINA

CHART I:

*Estuarine Erosion Areas: Chowan County, North Carolina

REACH NO. 1	
Av. width lost to erosion	50.4 feet
Av. height of bank	7.6 feet
Length of shoreline eroding	9.1 miles
Length of shoreline accreting	0 miles
Total length of shoreline	9.5 miles
REACH NO. 2	
Av. width lost to erosion	35.5 feet
Av. height of bank	9.4 feet
Length of shoreline eroding	2.7 miles
Length of shoreline accreting	0.5 miles
Total of length of shoreline	3.9 miles
REACH NO. 3	
Av. width lost to erosion	51.1 feet
Av. height of bank	5.6 feet
Length of shoreline eroding	3.2 miles
Length of shoreline accreting	0 miles
Total length of shoreline	3.5 miles
REACH NO. 4	
Av. width lost to erosion	42.7 feet
Av. height of bank	0.5 feet
Length of shoreline eroding	3.6 miles
Length of shoreline accreting	0 miles
Total length of shoreline	4.6 miles
REACH NO. 5	
Av. width lost to erosion	22.2 feet
Av. height of bank	0.8 feet
Length of shoreline eroding	3.2 miles
Length of shoreline accreting	0 miles
Total length of shoreline	7.7 miles
REACH NO. 6	
Av. width lost to erosion	6.1 feet
Av. height of bank	8.5 feet
Length of shoreline eroding	3.2 miles
Length of shoreline accreting	0 miles
Total length of shoreline	12.9 miles

*Source: Shoreline Erosion Inventory, North Carolina, U. S. DA. Soil Conservation Service, Raleigh, NC October, 1975.

Boards of Commissioners. The report includes detailed descriptions of the soil types and properties for Chowan County with discussion of the suitability for various uses, such as croplands, urban development, septic tank placement, and recreation. The most important feature or property of soils to consider in nearly any location is the drainage capability, since well-drained, stable soils can be used for a variety of "development" purposes, i.e. croplands or residential (septic tank suitability).

Generally, most of the soils in Chowan County have limitations for many uses because of wetness, too rapid permeability, too slow permeability, or low strength. Of the 37 mapped soils classifications contained in the Soil Survey Report, 21 were characterized as being "poorly drained" with limitations for urban development uses; 10 were described as "well-drained" to "excessively" well-drained; and 6 were characterized as "moderately-well drained." Most of the soil types, however, are suitable for various agricultural uses if the proper drainage is provided. Although several soil types in Chowan County consists of highly decomposed organic matter, there are no substantial deposits of peat in Chowan County.

With the recently established trend of population growth, as well as the absence of centralized sewer facilities, a very important consideration is the extent of soils suitable for urban development, i.e., septic tank placement. Map 8, attached, shows the general area in the County with septic tank and building development limitations. This representation, however, is general, and specific determinations must be based on individual on-site analysis and testing.

d. Sources and Estimated Quantity of Water Supply

(1) Groundwater: The Chowan County water system is based on a system of deep wells which tap underlying groundwater. The principal source of groundwater in Chowan County is precipitation which falls on the County and some of which falls on the recharge areas farther west in the Coastal Plain Province. Other groundwater that may be encountered in the County is that which was trapped in the sedimentary deposits at the time of their deposition or during subsequent inundations by the sea.

Underlying Chowan County are five distinct aquifers from which freshwater can be obtained at some location within the County. These aquifers were mapped by O. B. Lloyd, Jr., of the U.S. Geological Survey and are described in detail in the previously cited "Ground Water Bulletin No. 14."

(a) Aquifer A - Aquifer A includes all the sand strata from land surface down to the first semi-confining layer at depths ranging from 10 to 35 feet in the County. This aquifer is

used for some water supplies to driven wells and dug wells. Its water usually is acidic, corrosive, and contains objectional concentrations of dissolved iron. It is not considered as an important source of water in the area.

(b) Aquifer B - This aquifer occurs in the upper part of the Yorktown Formation. The top of this aquifer is at depths of about 15 feet in the northwestern part of the County and at about 40 feet in the central part. Its thickness ranges from 35 feet along the Chowan River to 90 feet northeast of Valhalla, but where its average thickness is about 50 feet or more, this aquifer can yield approximately 100 gpm (gallons per minute) to large diameter gravel-packed wells. In most parts of the County, Aquifer B is a significant source of water.

(c) Aquifer C - Aquifer C includes permeable strata in the upper part of the Beaufort Formation, the Castle Hayne Limestone, and the Pungo River Formation. The water in this aquifer is under artesian conditions throughout the County. The top of Aquifer C lies at depths of approximately 130 feet west of Smalls Crossroads to almost 300 feet in the extreme southeastern part of the County. It has an average thickness of about 50 feet, but may be about 75 feet thick in the extreme southeastern part and approximately 110 feet near Valhalla. It is a significant aquifer in the Valhalla-Edenton part of the County even though its water requires treatment for excessive concentrations of dissolved iron.

Although this aquifer contains freshwater only in the central part of the County, from the vicinity of Burnett's Mill Pond to Edenton, it is the principal aquifer in the County for public and industrial water supplies. Gravel-packed wells in Aquifer C can yield 500 gpm or more.

(d) Aquifer D - Aquifer D occurs near the middle part of the Beaufort Formation. It is overlain by about 40 feet of glauconitic silt and clay, and its contained water is under artesian conditions. The top of this aquifer lies at depths ranging from 200 feet near Smalls Crossroads to about 420 feet in the southeastern tip of the County, with an average 50-foot thickness. The water in Aquifer D is too brackish for use in most of the County.

Aquifer D is capable of furnishing several hundred gallons per minute of water to large gravel-packed wells. Because of the proximity of brackish water and the concentrations of fluoride, it probably is not desirable to pump large quantities of water from a single well in this aquifer.

This aquifer may be considered as significant in only about 30 percent of the County.

(e) Aquifer E - Aquifer E occurs in the uppermost part of the Black Creek Formation. It is separated from the overlying aquifer by a silt and clay aquiclude ranging from 30 feet thick in the northern part of the County to 170 feet thick in the southern part. The aquifer has an average thickness of about 100 feet throughout the County. The top of Aquifer E lies at depths ranging from 285 feet in the northwestern part of the County to 690 feet in the southeastern part.

Freshwater occurs in this aquifer only in a small part of the County west of Small's Crossroads and north of Rockyhock.

Aquifer E is not a significant aquifer in Chowan County because of its limited area of freshwater.

Recovery of Water

Large quantities of groundwater can be obtained from wells in all parts of Chowan County. However, its usefulness is limited by the chemical quality of the water. The general quality of groundwater in the County is such that some degree of treatment is necessary to make it meet the U.S. Public Health Service standards for public water supplies.

In summary, most of Chowan County's water supply comes from below the "unconfined" aquifers, i.e., the general water table. Because of the depth of this water supply, it is unlikely that above-ground activities will produce adverse impacts.

(2) Surface Water Quality: The quality of the surface water in the Chowan County area, especially the Chowan River, has been of special concern to North Carolina environmental officials for many years. State agencies in both North Carolina and Virginia have been involved in discussions and projects to locate and identify sources of the serious algae bloom problem in their attempts to develop solutions. The Chowan River has been officially declared as "Nutrient-Sensitive Waters" by the North Carolina Environmental Management Commission. This special designation (one of only two in the State as of 1985) requires certain actions to help minimize point and non-point sources of pollution. Requiring upgrading of wastewater treatment systems, such as Edenton's proposed Land Application Sewerage System, is an action aimed at reducing point sources of pollution.

The North Carolina Agricultural Non-Point Cost-Share Program, for nutrient-sensitive waters, begun in 1984, is designed to assist farmers to develop management practices which will reduce

non-point pollution and sedimentation in sensitive waters--mainly from phosphorus and nitrogen. Technical assistance is provided to aid farmers in terracing, developing filter strips, and cultivation in tillage and non-tillage. Chowan County has been active in the program since its beginning. These practices, undertaken as a result of the water quality concerns and the Nutrient-Sensitive Waters designation, should, over a period of time, contribute to the Chowan River's and Albemarle Sound's potential for improved recreational and commercial fishing utility. .

e. Slopes in Excess of 12%

The elevations in all of Chowan County are all very low and there are no steep slopes in excess of 12% anywhere in the County.

2. Fragile Areas

These are areas which could easily be damaged or destroyed by inappropriate or poorly planned development. There are not many fragile areas in Chowan County, which include those areas previously identified and discussed as Areas of Environmental Concern (AECs). These included estuarine waters, public trust areas, and estuarine shorelines (see pages 27-30, this section). However, there are other fragile areas in the County which are not classified as Areas of Environmental Concern, but nevertheless, due to either natural or cultural significance, are environmentally sensitive. These areas will be identified and discussed below as either "Natural Resource Fragile Areas, or "Cultural Resource Fragile Areas."

a. Natural Resource Fragile Areas

Natural resource fragile areas are generally recognized to be of educational, scientific, or cultural value because of the natural features of the particular site. Features in these areas serve to distinguish them from the vast majority of the landscape. These areas include: complex natural areas, areas that sustain remnant species, unique geologic formations, pocosins, wooded swamps, prime wildlife habitats, or registered natural landmarks. With the exception of wooded swamps, none of the above-listed natural resource fragile areas have been identified in Chowan County. It is unlikely that any substantial area in Chown County would be classified as a "complex natural area." These areas are defined as "lands that support native plant and animal communities and provide habitat conditions or characteristics that have remained essentially unchanged by human activity." These areas are to be determined to be rare within the County or to be of particular scientific or educational value. Complex natural areas are often surrounded by landscapes that have been modified but still do not drastically alter the conditions within the natural areas or their scientific or educational value.

b. Cultural Resource Fragile Areas

Fragile areas may be particularly important to a locale either in an aesthetic or cultural sense. Fragile coastal cultural resource areas are generally recognized to be of educational, associative, scientific, aesthetic, or cultural value because of their special importance to our understanding of past human settlement of and interaction with the coastal zone. Their importance serves to distinguish the designated areas as significant among the historic architectural or archaelogical remains in the coastal zone, and therein establish their value.

Although no comprehensive archaeological or architectural investigation of Chowan County had been completed, the State Division of Archives and History has recorded several sites in the County. Also, it should be noted here that a comprehensive architectural survey was begun in late 1985 for Chowan County, including Edenton. When this study is complete, additional structures with historic/architectural significance will be identified. There are already several sites in the Town of Edenton which have been placed on the National Register of Historic Places, including the Chowan County Courthouse. Significant historic and/or architectural resources outside of Edenton include:

(1) National Register Properties (19)

Edenton Historic District (±175)

Albania, Edenton

(a) Athol, Edenton vicinity
Barker House, Edenton
Chowan County Courthouse, Edenton
(b) Cullins-Baker House, Tyner
Cupola House, Edenton
(c) Greenfield Plantation, Somer vicinity
Hayes Plantation, Edenton vicinity
James Iredell House, Edenton
Mulberry Hill, Edenton vicinity
Peanut Factory (Edenton Peanut Company), Edenton
Pembroke Hall, Edenton
St. Pauls Episcopal Church and Churchyard, Edenton
(d) Sandy Point, Edenton vicinity
(e) Shelton Plantation House, Edenton vicinity
Speight House and Cotton Gin, Edenton
(f) Strawberry Hill, Edenton vicinity
Wessington House, Edenton

(2) Study List Properties (6)

(a) Bennett's Mill Pond
(b) Briols, Hancock vicinity

(c) Coke House, Edenton vicinity
(d) Haughton-Leary House, Edenton vicinity
(e) Martinique, Smalls Crossroads vicinity
(f) Jubilee Farm, St. John's community

The most notable location of archaeological significance is, perhaps, the Arrowhead Beach Subdivision, where Indian artifacts have been found.

3. Areas With Resource Potential

a. Agricultural and Forest Lands

The primary areas with resource potential to be considered in this 1985 update of the Chowan County Land Use Plan are agricultural and forest lands. As discussed under existing economic conditions (pages 12 through 14), agriculture and commercial forestry are substantial income producers for Chowan County and therefore cannot be under-estimated in value. In August, 1983, the Governor of North Carolina issued a formal policy declaration (Executive Order 96) concerning the State's desire to promote the "Conservation of Prime Agricultural and Forest Lands" in support of and to assist with compliance of the Federal Farmland Protection Policy Act of 1980. The declaration of Executive Order 96 recognized the fact that in many areas of the State, prime agricultural and forest lands are being converted to other uses at such a significant rate that these irreversible uses may ultimately reduce the capacity of food and fiber production. Prime agricultural and forest lands were defined as those lands "...which possess the best combination of physical and chemical characteristics for producing food, feed, fiber (including forest products), forage, oilseed, and other agricultural products (including livestock), without intolerable soil erosion."

The Governor directed the Secretary of the State Department of Natural Resources and Community Development to assume the responsibility of carrying out the Order. The program proposed in the Executive Order involved the identification of and mapping of prime agricultural and forest lands by the Soil and Water Conservation Commission through the assistance of local Soil and Water Conservation Districts. Also, by means of the existing State Clearinghouse review process, the impact of any development proposed on prime agricultural or forest lands would have to be assessed beginning January 1, 1984.

However, as of the writing of this report, prime agricultural or forest lands have not been identified or mapped in accordance with Executive Order 96, in Chowan County. The 1981 Plan Update stated that the most productive farmland and commercial forests were located in the eastern part of the County. With appropriate drainage facilities, most of the soil types in Chowan County yield very productive farmland. Productive farmland is located in vari-

ous portions of the County, intermingled with forestlands scattered across most of the County's landscape. (See Existing Land Use Map, attached.)

b. Productive Water Bodies

Because of the significance of commercial and recreational fishing in Chowan County, the primary fishing areas should also be considered as an area with resource potential. Chowan County has ranked 5th among the State's coastal counties for several years in terms of overall fish catches, and fourth in 1985. This indicates that in spite of previously cited water quality problems, substantial landings are still being drawn from both the Chowan River and the Albemarle Sound. These areas are vital productive resources. Also, there are two fishery processing businesses in the County, providing employment and income to some of the County's residents.

c. Mining Lands

Chowan County does not have a substantial peat reserve capable of being mined for commercial or industrial purposes like several other coastal counties. However, review of detailed soils classifications maps prepared by the U.S.D.A. Soil Conservation Service, indicates that soil types with highly decomposed organic matter as surface layers and underlayed by decayed logs, etc. may signify the presence of peat. These types of soils can be found in various pockets in the County, usually coinciding with very poorly drained soils. Also in Chowan County, there are several sand mining operations. There are no other known areas in the County which contain marketable mineral resources, such as phosphate.

d. Outdoor Recreation Lands

Lands used for hunting, fishing, boating, hiking, camping, and other outdoor recreational uses are also important resources to consider in the development of land use policies. In Chowan County, because of two major productive water bodies, and expansive woodlands, recreational fishing and hunting opportunities, within the appropriate seasons, abound.

F. CONSTRAINTS: CAPACITY OF COMMUNITY FACILITIES

1. Water

The Chowan County water system has been growing steadily since its beginning in the mid-1970s. The initial water service study for the first phase of the system projected that the entire system would have 2,000 customers by the year 2000. However, from a beginning of 1,200 customers with the opening of Phase I in 1975, the service load had more than doubled by the time of the 1981 Plan Update to 2,226 customers. As of January 1986, with Phases I and II being complete and Phase III under construction, the Chowan County water system served 2,796 customers, including six industries and 16 commercial establishments. This represents an increased growth between 1981 and 1986 of 114 additional customers per year. The distribution lines cover the entire County, and virtually all of the population outside of Edenton has access to the water system.

The water system actually consists of two separate systems (the "northern" and "southern" systems) of 238 miles of lines ranging in size from 2" to 10", and three elevated storage tanks, each with a capacity of 200,000 gallons, for a combined storage capacity of 600,000 gallons. The two water systems, separated by the Town of Edenton, are not interconnected and have their own separate treatment and distribution systems. The northern system has two plant sites, one at Valhalla and one at Brahall, and is the larger of the two. The treatment plant for the southern system is located near Yeopim. Phase III improvements will expand the capacity at the Valhalla facility

The current total system, i.e., prior to the completion of Phase III improvements, operates with a total of five wells with current and projected capacities after improvements summarized in Table 20, below:

TABLE 20: Chowan County Water System Capacity

Plant Site	No. Wells	20-Hour Daily Capacity	1985 Peak Day	1985 % Use @ Peak	Projected 1988 Daily Capacity (20 Hrs)
Valhalla	2 @ 200 gpm	480,000	203 gpd	42%	960,000
Brahall	2 @ 300 gpm	720,000	432 gpd	60%	720,000
Yeopim	1 @ 200 gpm	240,000	268 gpd	112%	480,000
TOTAL		1.44 MGD	*903 gpd		2.16 MGD

*Average of peaks
Source: Chowan County Water Department: Projections by Talbert, Cox & Associates, Inc.

After completion of planned Phase III improvements (October, 1986), the County also plans to upgrade the treatment capacity at the Yeopim plant to double its current capacity. After all improvements are completed (by 1988), the County will have excess, at average peak consumption, of about 720,000 gpd.

The peak excess capacity projected to be available because of the Phase III and Yeopim improvements should support 2,155 additional customers at 1985 average daily use rates by 2,700 customers 9,334 gpd. Peak demands come usually during two seasons: May, because of fish processing, and general high summer demand during July-August. During peak periods, there is currently no excess capacity. On several occasions during periods of high demand, Chowan County purchased additional water through its buy-sell agreement with the Town of Edenton, Perquimans County, and Gates County. However, the increased well capacity is projected to be sufficient to meet demands.

2. Sewer

The only centralized sewer system in the County is still the one which serves the Town of Edenton. Edenton, as reported earlier, has a policy of not extending sewerlines beyond its corporate limits--even with the improved capacity made feasible by the new land application treatment system. If the Town ever changes this policy, development in the County outside of Edenton would be affected. Chowan County residents outside of Edenton utilize septic tanks for sewage disposal. However, the majority of the soil types in the County are not conducive for septic tank placement (see Map 8). The County, however, has not put forth any discussions concerning a County sewer system.

3. Solid Waste

It was reported in the 1981 Plan Update that the joint landfill used by Chowan and Perquimans Counties had a useful life of about three years. However, a new landfill has been developed and has been in use several years. The landfill is located in Perquimans County and has a projected utility of from 10 to 12 years. The County still operates its "greenbox" collection system, utilizing the services of a private contractor. From 75 to 100 "green boxes" are located throughout the County.

4. School Enrollments

In recent years, the Edenton-Chowan County school system has been faced with steady declines in enrollments. Notice Table 21, below:

TABLE 21: Chowan County School Enrollments 1981-1986

School Year	Enrollments	Change
1981-82	2,510	--
1982-83	2,478	- 32
1983-84	2,429	- 49
1984-85	2,425	- 4
1985-86	*2,570	+145

Source: Edenton-Chowan County Schools
*Based on first month's report

The first month's report for the 1985-86 school year indicates a substantial turnaround in enrollment levels. If current levels hold, the 1985-86 enrollment will exceed that for 1981-82. In-migration is the most likely cause of the increased enrollment levels. Nevertheless, since the 1981 Land Use Plan Update, the County is operating two less schools. Instead of two junior high schools and three elementary schools, the system now operates only one junior high and two elementary schools. Even with some unexpected growth, however, the existing school facilities do not pose a serious constraint to population increases.

5. Transportation

There are several major thoroughfares in Chowan County. U.S. Highway 17 bisects the County from west to east in the southern section and includes a bypass around the Town of Edenton. N.C. Highway 37 enters the southern portion of the County via the Albemarle Sound Bridge, then cuts across into Perquimans County, then curves back into Chowan, near the northeastern tip of the County. Also, there are many State-maintained secondary roads--paved and unpaved. Table 22, below, summarizes the highway mileage as of 1982.

TABLE 22: Chowan County Highway Mileage - 1982

PRIMARY -	Total	53.63
	Rural	48.17
	Municipal	5.46
SECONDARY -	Total	186.91
	Rural	183.81
	Municipal	3.10
TOTAL		240.54
	Paved	204.98
	Unpaved	35.56

Source: North Carolina Local Government Statistical Abstract

A little more than 85% of the County's secondary roads are paved. As discussed previously, there is some concern about traffic volumes in the Old Base Road area (S.R. 1114). Recent traffic counts by N.C. DOT indicate some growth in average daily traffic (ADT) in the area, but still less than the estimated road capacities. Notice Table 23, below.

TABLE 23: Average Daily Traffic, S.R. 1114, N.C. 32, 1981, 83, 85

Size	ADT-YEAR 1981	1983	1985
S.R. 1114 (west of N.C. 32)	200	400	n/a
N.C. 32 (north of S.R. 1114)	2,200	1,700	1,900

Source: N.C. DOT, Planning and Research

6. Medical Services

Generally, medical services are adequate in Chowan County. The County maintains a 65-bed primary care facility, Chowan Hospital, Inc., which is managed by a private management firm. The hospital has a local Board of Directors, which is appointed by the County Board of Commissioners. The hospital serves Chowan County and several surrounding counties. There are also 15 physicians in private practice in the Town of Edenton (three have initiated practices since the 1981 Plan Update). A public health clinic is operated by the Chowan County Health Department, which is part of the five-county Regional Health Service. Additional specialized medical services are available in Greenville (60 miles away) and in Norfolk (80 miles away). In the Town of Edenton, there are several dentists and three pharmacy stores, one of which started operation since the 1981 Plan Update.

7. Emergency and Protective Services

As in the case with medical services, emergency and protective services for Chowan County are also based in the Town of Edenton. Law enforcement in the County is primarily the responsibility of the County Sheriff and a staff of five deputies and one dispatcher. The County is served by two Fire Departments. The Town of Edenton has a full-time Fire Department, while the County has one volunteer Fire Department based in the northern portion of the County at Smalls Crossroads. Emergency medical rescue is provided for the County by the Edenton-Chowan Rescue Squad, which consists of three full-time personnel and volunteers. All three full-time personnel and several volunteers are certified Emergency Medical Technicians. The rescue squad building is located behind the Chowan Hospital in Edenton. There are also two rescue squad units outside of Edenton, one each in Gliden and in Rockyhock. The

services are coordinated by a full-time Emergency Services Coordinator. The rescue squad maintains its own number and dispatch system, as do both the Sheriff's Department and Fire Departments. There is no single emergency number currently designated in Chowan County. The County has discussed adopting the 911 emergency number.

8. Other Facilities

Other public facilities in Chowan County include the County Library, which is part of a regional library system based in Plymouth. The library also operates a bookmobile to a high school and a junior high school. Most County offices are currently housed in the County Administration Building, including the Board of Education. Because of the age of the structure, discussions have been conducted concerning eventually providing new administrative office facilities for the County departments. However, no definite plans have been made.

G. ESTIMATED DEMAND

1. Population and Economy

According to projections in Table 1, Chowan County's population in 1995 will be 13,808, an increase of 848 persons over the 1985 estimate of 12,960. (Both estimates were provided by the North Carolina Office of State Budget and Management). This growth rate (6.54%) does not imply a "rapid growth" situation and should not impose severe stresses upon existing facilities and services. If current trends continue, the Town of Edenton can expect to gain about 42%, or 356 of the 848 additional persons, leaving 492 residing in the County. (This is based on Edenton's proportion of the County's 1980 population and the most recent--1984--State estimate for municipalities, assuming the proportion holds steady and the Town does not annex. Edenton's most recent population estimate is projected at 5,497, representing a modest increase since the 1980 Census). Again, on the basis of current trends, most of the 492 additional persons in the County will reside in the Edenton and Middle Townships. Also, there appears to be a trend toward smaller households (e.g., the average household size in 1970 was 3.3 persons, but only 2.85 in 1980), the average household size in Chowan County by 1995 could be 2.5 persons. Thus, assuming an average of 2.5 persons per household in 1995, the increased population by that time could result in 142 additional households for the Town of Edenton and 197 more households in the unincorporated portions of the County, mostly in the Edenton and Middle Townships.

The 339 projected total additional households will place certain demands upon goods, services, and facilities. However, as stated above, only 197 households are forecast to locate in the County. It should also be noted here that there is no appreciable seasonal population in Chowan County.

Based on recent trends, it is likely that the impact of the population increase upon the local economy will be felt more in the Town of Edenton than in the rest of Chowan County. Edenton is a small, but growing commercial and service center. Therefore, it is more likely that increased commercial activities and other services, as well as employment, will likely occur in Edenton.

2. Future Land Need

Most of the land required to accommodate additional residential growth in Chowan County consists of vacant, undeveloped lots in previously platted subdivisions, such as Arrowhead, Cape Colony, and Windsor Woods. Nearly all of the lots in the Country Club Subdivision are already developed. However, preliminary proposals for a significant expansion of Country Club have been discussed with County officials. In the 1981 Plan Update, it was stated that approximately 70% of the new residential growth would occur in previously platted subdivisions, with 30% being developed in one-half to one-acre lots along major roads. Even if the projected 848 total additional persons by 1995 (approximately 339 households at the assumed average household size of 2.5 persons) resided on one-acre tracts, only about 339 acres of additional developable land would be needed. This would include the projected growth both within and outside of the Town of Edenton. However, with the expansion of the County-wide water system, in nearly all cases, less than one-acre per unit will be needed.

With more than 110,000 acres of forests and farmlands, an additional 339 acres of residential acreage is not significant. Land availability should pose no problems.

3. Community Facilities Need

The additional population increase by 1995 outside of Edenton of 492 persons, or 197 households, will require more water from the Chowan County water system. However, as discussed under "Community Facilities Constraints," the expanded water system, at peak operation, should be able to handle approximately 2,155 additional customers at 1985 average daily use rates. Therefore, even with the addition of moderate industrial consumption, the County water system should be adequate to serve the projected increase.

Outside of Edenton, additional residents will have to continue to rely on septic tanks for disposal of sewage. With the availability of suitable, well-drained soils and/or the installation of modified septic systems in certain soil types, and as approved by the County Health Department, septic tank placement should not pose major problems.

The County's solid waste disposal system, having recently begun use of a new landfil with Perquimans County, should be adequate throughout the planning period.

If development continues in the Cape Colony-Country Club-Airport area, it is likely that the condition of S.R. 1114, i.e., "Old Base Road," will continue to deteriorate. Presently, because of the State designation as a "secondary" route, funding allocations for maintenance and improvements are considered inadequate by County officials. The County has discussed requesting that the State designate the route a "primary" thoroughfare so that adequate funds could be provided for the road's long-term improvements and maintenance needs.

Currently, there are still six boat ramps located in the County providing recreational and commercial water access to the public. Only two are publicly owned, while four are private, charging minimal fees. This appears to be inadequate for a County with such a large number of miles of shoreline. There are still no public swimming facilities in the County. As the population increases, there will likely be a need for additional points of public water access for both boating and swimming.

Other facilities and services, such as schools, medical, protective and emergency services, are projected to be adequate throughout the planning period.

SECTION II :

Policy Statements

SECTION II: POLICY STATEMENTS

The formulation of specific policies regarding growth and management objectives is perhaps the most important part of this updated Land Use Plan. Those policies must, in some cases, strike a delicate balance between objectives of the Coastal Resources Commission and the desires and objectives of the citizens of Chowan County. Most of the trends identified in the 1981 Plan are still continuing, so in many instances, policies set forth in the 1981 Plan will not require significant modification. As the analysis of existing conditions showed, these ongoing trends include: a moderately growing population, increased waterfront development, and the continuing potential for the mining of peat.

The Coastal Resources Commission, recognizing the diversities which exist among the Coastal counties and communities, required the County to specify particular development policies under four rather broad topics in 1981. For the 1986 Update, however, the CRC has added a fifth issue, i.e., "Storm Hazard Mitigation." In most cases, policies developed under these topics will cover most of the local development issues, but in some cases, they do not. In the latter case, the locality has the flexibility to address its own locally defined issues. The five required broad topics are:

- Resource Protection
- Resource Production and Management
- Economic and Community Development
- Continuing Public Participation
- Storm Hazard Mitigation

After an analysis of the existing conditions and trends and input from the County's citizens, the foregoing policies were developed to provide an overall framework for guiding growth and development in Chowan County throughout the current planning period, i.e., through 1995.

A. RESOURCE PROTECTION

1. Areas of Environmental Concern: Development Policies

Chowan County recognizes the primary concern of the Coastal Resources Commission, in terms of protecting resources, as managing Areas of Environmental Concern (AECs). The County also shares this concern for the protection and sound management of these environmentally sensitive land and waters. The AECs which occur in Chowan County were identified in Section I of this Plan on pages 27 through 30. All of these areas are within the Estuarine System. In terms of developing policies, the Estuarine System AECs, which include Coastal Wetlands, Estuarine Waters, Estuarine Shorelines, and Public Trust Areas, will be treated as one uniform grouping since they are so closely interrelated. Another reason for grouping these AECs together is the fact that

the effective use of maps to detail exact on-ground location of a particular area, poses serious limitations.

Chowan County's overall policy and management objective for the estuarine system is "to give the highest priority to the protection and coordinated management of these areas, so as to safeguard and perpetuate their biological, social, economic, and aesthetic values and to ensure that development occurring within these AECs is compatible with natural characteristics so as to minimize the likelihood of significant loss of private property and public resources." (15 NCAC 7H. 0203) In accordance with this overall objective, Chowan County will permit those land uses which conform to the general use standards of the North Carolina Administrative Code (15 NCAC 7H) for development within the Estuarine System. Generally, only those uses which are water dependent will be permitted. Specifically, each of the AECs within the Estuarine System is discussed below according to definitions derived from 15 NCAC 7H. It should be noted, however, that occasionally portions of the Administrative Code change, which may affect definitions and use standards.

a. Coastal Wetlands

By technical definition, there are no "coastal wetlands", i.e., regularly flooded salt marsh areas containing certain plant species, of any significance in Chowan County. Most of what could be termed "wetlands" in the County consist of "wooded swamp" areas in the lowlands near the river. The more sensitive areas are those closest to the water. The wooded swamps in Chowan County could also possibly contain areas that sustain remnant species, and wildlife habitats, all of which are important to Chowan County. However, the County does not believe that all land uses in these areas should be prohibited. The first priority of uses of land in these areas should be the allowance of uses which promote "conservation" of the sensitive areas, with conservation meaning the lack of imposition of irreversible damage to the wetlands. Generally, uses which require water access and uses such as utility easements, fishing piers and docks, will be allowed, but must adhere to use standards of the Coastal Area Management Act (CAMA: 15 NCAC 7H).

b. Estuarine Waters and Estuarine Shorelines

The importance of the estuarine waters and adjacent estuarine shorelines in Chowan County was discussed in Section I of this document on pages 28-29 and under "Estuarine Erosion Area," pages 35-36. Chowan County is very much aware that protection of the estuarine waters and adjacent estuarine shorelines -- both vital components of the estuarine system -- is of paramount importance to fishing, both commercially and for recreation.

Chowan County recognizes that actions within the estuarine shoreline, which is defined as the area extending 75 feet landward

of the mean high waterline of the estuarine waters, could have a substantial effect upon the quality of these waters. This area is subject to erosion and occasional flooding, which could not only affect the quality of the adjacent estuarine life, but also threaten the security of personal property from developments located therein. The estuarine erosion rates cited in Section I of this report indicate that certain land areas in the County have historically lost land to erosion at an average rate of 0.94 feet per year. If a waterfront lot were to be located in such an area without stabilization measures, 9.4 feet of the lot could possibly be lost to erosion over 10 years.

In order to promote the quality of the estuarine waters as well as minimize the likelihood of significant property loss due to erosion or flooding, Chowan County will permit only those uses which are compatible with both the dynamic nature of the estuarine shorelines and the values of the estuarine system. Residential, recreational, and commercial uses may be permitted within the estuarine shoreline, provided that:

- a substantial chance of pollution occurring from the development does not exist;
- natural barriers to erosion are preserved and not substantially weakened or eliminated;
- the construction of impervious surfaces and areas not allowing natural drainage is limited only to that necessary for developments;
- standards of the North Carolina Sedimentation Pollution Control Act 1973 are met;
- development does not have a significant adverse impact on estuarine resources;
- development does not significantly interfere with existing public rights or access to, or use of, navigable waters or public resouces;

c. Public Trust Areas

Chowan County recognizes that the public has certain established rights to certain land and water areas. (For definitions and geographic locations of public trust areas, see page 29, Section I). These public areas also support valuable commercial and recreational fisheries, waterfowl hunting, and also contain significant aesthetic value. Chowan County will promote the conservation and management of public trust areas. Appropriate uses include those which protect public rights for navigation and recreation. Projects which would directly or indirectly block or impair existing navigation channels, increase shoreline erosion, deposit spoils below mean high tide, cause adverse water circulation patterns, violate water quality standards, or cause degradation of shellfish waters, shall generally not be allowed. Allowable uses shall be those which do not cause detriment to the physical or biological functions of public trust areas. Such uses

as navigational channels, drainage ditches, bulkheads to prevent erosion, piers, docks, or marinas, shall be permitted.

d. Policy Alternatives: Development in AECs

Sections a, b, and c of this Part have presented details of Chowan County's position on land uses in the statutorily defined Areas of Environmental Concern (AECs). Policy alternatives include:

(1) Revising and strengthening the existing Subdivision Regulations, to impose stricter design standards, particularly in waterfront areas, or areas with water accessibility.

(2) Adopt either a County-wide Zoning Ordinance, to establish certain "zones," or districts with specified uses and restrictions, or expand the current ordinance which covers the Cape Colony. Country club areas to include other developing areas of the County, e.g., Arrowhead-Chowan Beach.

(3) Continue to utilize current management tools and enforcement system, i.e., existing Subdivision Regulations (with no modifications), along with Federal and State permit and review processes, i.e., 404, and CAMA.

e. Policy Choices

Chowan County will continue to utilize existing regulatory system, i.e., existing Subdivision Regulations, Zoning Ordinance, (with no modifications), along with Federal and State permit and review processes, i.e., 404, and CAMA.

2. Development in Areas with Constraints

The constraints to development in Chowan County were discussed in Section I (pages 45-49) and relate to both physical constraints and limitations of community facilities. The physical constraints include man-made hazards such as the Edenton Airport area, and natural hazards such as high hazard flood areas, estuarine erosion areas, soils limitations, and natural and cultural resource fragile areas.

The high hazard flood areas, i.e., areas susceptible to the 100-year flood, is not as extensive in Chowan County as it is in some other coastal counties. As the attached Map indicates, although substantial portions of the County are considered to be in the "Zone A" category, according to maps prepared by the Federal Emergency Management Agency, the majority of the County is classified as "Zone C", i.e., minimally flooded areas susceptible to a 500-year flood. The areas with the highest risk appear to be

some of the estuarine shoreline areas along the northern Chowan River shore and several interior lowland areas. Although most of the County is not flood prone, it is still not realistic that all development should be prohibited from these areas.

Estuarine erosion areas, as a physical constraint to development, often correlate to the high hazard flood areas. Soils limitations for development also usually relate to flood-prone areas. Some of the soil types have limited permeability or too rapid permeability, making septic tank placement a problem. Also, pockets of muck or silt-type soils cannot support septic tanks nor bear the construction of heavy foundations.

There are no extensive natural resource fragile areas in Chowan County, and those which do exist are closely linked with the previously identified AECs. The cultural resource fragile areas were discussed on page 49). Existing community facilities, i.e., water, solid waste collection, etc., do not pose a serious constraint to development.

a. Policy Alternatives

Possible policy alternatives regarding managing growth and development in areas with identified constraints include:

(1) Amend subdivision regulations to include stricter design standards.

(2) Develop and adopt additional regulations, or modify existing ones, such as a Zoning Ordinance or Flood Damage Prevention Ordinance to regulate or prohibit all development in areas with identified physical constraints.

(3) Permit development in those areas, utilizing current state, federal and local regulatory processes, i.e., zoning, CAMA, flood ordinance, current subdivision regulations, and Corps of Engineers 404 permits, and where adequate protective measures have been taken.

b. Policy Choices

Chowan County adopts the following policies regarding development in areas with constraints.

(1) Development will be permitted in some areas subject to erosion, provided proposals comply with provisions outlined for development within the estuarine shorelines (see page 55).

(2) Chowan County realizes the inevitability of some development occurring in high hazard flood areas. Therefore, the County will continue to participate in the National Flood Insurance Program and enforce its "regular" Flood Damage Prevention Ordinance enforcement through the County Building Inspection Program. Proposed developments which are not otherwise damaging to AECs may be permitted, provided protective measures which comply with flood insurance requirements are imposed.

(3) Development in areas where soil types have limited bearing capacity will not be encouraged.

(4) In areas with possible septic tank limitations, Chowan County will remain committed to decisions rendered by the Regional Health Department's Sanitarian for the County.

c. Implementation Schedule

Chowan County will continue to support enforcement of existing regulatory controls.

3. Hurricane and Flood Evacuation Needs and Plans

An entire section within the Policy Statement discussions is included separately for hurricane and flood evacuation, as well as storm mitigation of post-storm redevelopment policies, beginning on page 74.

4. Other Resource Protection Policy Areas

There are some additional resource protection issues which are required to be addressed by the CAMA planning guidelines and which have lesser definition in Chowan County than in some other coastal areas. These areas, along with relevant policy discussion and statements are included below:

a. Protection of Potable Water Supply

As discussed in Section 1, pages 45 and 46, Chowan County's water distribution system is based on the groundwater drawn through a total of three wells as the supply source. Land uses near groundwater sources are regulated by the North Carolina Division of Environmental Management through N.C.A.C. Subchapter

2L and Subchapter 2C. Chowan County recognizes the importance of protecting potable water supplies and therefore supports the enforcement of these regulations.

b. Use of Package Treatment Plants

Since, as reported on page 46, the only centralized sewer service in the County is in the Town of Edenton, it may become necessary to develop small package treatment systems in order to accommodate certain types of development in outlying areas of the County. This development may be residential, commercial, or industrial. It shall be the policy of Chowan County to allow such package plants if they can be constructed within the overall intent of this plan and meet other federal and state environmental regulations.

c. Stormwater Runoff Associated with Agriculture, Residential Development, Phosphate or Peat Mining, and Its Impact on Coastal Wetlands, Surface Waters, or Other Fragile Areas

Stormwater runoff is basically the same issue as surface drainage in Chowan County. Policies on surface drainage are addressed in other areas of this Plan. (See Part B, this section, "Resource Production and Management Policies", for policies relating to agriculture, [B.1], residential development [B.6], and peat mining [B.3], and discussion of related impacts. Phosphate mining is not an issue in Chowan County.

d. Marina and Floating Home Development

The development of marinas has significant commercial and recreational potential in Chowan County. Therefore, the County supports the development of marinas, in compliance with existing environmental regulations. The County believes that additional studies of the County's needs are required in order to indicate possible sizes or locations of marinas. (Also, see Part C.4, "Redevelopment of Developed Areas", Section II). So-called "floating homes" are not an issue or problem in Chowan County.

e. Industrial Impacts on Fragile Areas

Part C.1, "Types and Locations of Desired Industry", contains specific policy statements on industry. (See pages 64-65).

f. Development of Sound and Estuarine System Islands

There is one estuarine system island in Chowan County's jurisdiction, i.e., Holiday Island. This island can be characterized as a wooded swamp and is, therefore, a natural fragile area. It is the County's policy that this area should be protected from any environmentally adverse development. This area will be classified as "Conservation" on the Chowan County Land Classification Map. (See Map 10, attached.)

B. RESOURCE PRODUCTION AND MANAGEMENT POLICIES

Appropriate management of productive resources is very important to any locality. In Chowan County, as with many coastal counties, the productive resources are intricately tied to the predominant economic sectors of the County which makes the necessity of balanced management policies of paramount importance. The major productive resources to be considered relate to agriculture, commercial forestry, commercial and recreation fisheries, and recreational land uses.

1. Agriculture

Agriculture, as discussed under analysis of existing economic conditions, is the second most important income source in Chowan County. More of the County's income comes from this sector than from any other sectors except manufacturing. The importance of farming and its supportive activities cannot be overestimated in Chowan County. Executive Order 96, "Conservation of Prime Agricultural and Forest Lands", was supposed to have led to the identification of "prime areas," in both agriculture and forestry, by the soil and water conservation districts. However, this identification has not occurred in Chowan County. Nevertheless, according to the County Agricultural Extension Agent, the most productive farmlands are located in the northern section of the County from Edenton, mostly east of N.C. 132, and to a lesser extent, west of N.C. 132.

a. Policy Alternatives

(1) Do not impose any additional land use controls or restrictions on agricultural practices.

(2) Expand the existing partial zoning ordinance and zone certain lands as "agricultural," with use restrictions and limitations.

(3) Continue to support and encourage use of the U.S. Soil Conservation Service's "Best Management Practices" program and the Non-Point Pollution Agricultural Cost-Share Program.

b. Policy Choice

(1) Chowan County, in recognition of the importance of agriculture to the County's economy, believes that existing federal and state permitting procedures (CAMA and Corps of Engineers) pose enough limitations to the use of farmland in the County. Because of the soil types and topography, the County recognizes that proper drainage is essen-

tial and must be allowed to continue as needed, and as it does not result in irreversible damage to environmentally sensitive areas. Therefore, no additional limitation or policies will be adopted. However, the County will support and encourage the identification of "prime" farmland in Chowan County and participation in the Non-Point Pollution Agricultural Cost-Share Program, including the S.C.S., use of the "Best Management Practices". These programs are designed to balance proper agricultural management with protection of nutrient-sensitive waters from agricultural runoff.

c. Implementation Schedule

(1) Leave the existing process as is.

(2) Encourage the Regional Soil and Water Conservation District to identify prime agricultural lands by FY 88, so that these areas can be mapped.

(3) Continue to support State Clearinghouse review of impact of development on prime agricultural lands.

2. Commercial Forestry

Woodlands and forests cover most of Chowan County's landscape. Substantial amounts of income are generated annually from forest products, mainly from saw timber. "Prime" forest lands, as defined in Executive Order 96, have not as yet been identified for mapping in Chowan County. "Productive" forest lands, however, are found in many sections of the County.

a. Policy Alternatives

(1) The County could, through the adoption and enforcement of local ordinances, impose restrictions on timbering practices and require commercial loggers to replant and reclaim timbered areas.

(2) The County could leave current practices as they are without imposing additional restrictions.

b. Policy Choice

(1) The County believes that imposing additional restrictions are not necessary at this time nor should be throughout the planning period. However, Chowan County will encourage reforestation whenever feasible, as a sound timber management practice.

c. Implementation Schedule

(1) Leave the existing process as is.

(2) Encourage the Regional Soil and Water Conservation District to identify prime forestlands by FY 88, so that these areas can be mapped.

(3) Continue to support State clearinghouse review of the impact of development projects on prime forestlands.

3. Mining Resource Areas

Unlike some other coastal counties, Chowan County does not have vast reserves of some mineable resources, i.e., peat or phosphate. However, there are some sand mining areas in the County and there may be potential for others. As a policy, Chowan County believes the existing sand pits, and possibly others, should operate as long as they are in compliance with federal, state, and local environmental regulations.

4. Commercial and Recreational Fisheries

The productive water bodies in and around Chowan County have been steady and valuable contributors to the local economy as well as provided many opportunities for recreational fishing. With the overall water quality of the Chowan River steadily improving, and with increasing annual catches over the last several years, it appears that commercial fishing has the potential to expand in Chowan County. It is, therefore, very important to continue those actions and programs which enhance and protect the water quality of productive fishing areas, i.e., the Chowan River and the Albemarle Sound. In recent years, concern has been raised by commercial fishermen along North Carolina's Coast and the State Division of Marine Fisheries, that freshwater run-off (particularly from agricultural drainage) has been detrimental to estuarine waters by altering the salinity content. Concern also has been raised because of incidences of fecal coliform, coming from septic tank seepage, showing up in primary shell-fishing waters and forcing the "closing" of such waters. Although shell fish harvesting is not as significant locally, as in some other areas, Chowan County would like to see water quality in all of the productive water bodies maintained.

As discussed previously, water quality has long been of concern in Chowan County. Fishing can be detrimentally affected by poor water quality. Although significant strides have been made in recent years, the Chowan River has been experiencing serious problems associated with "cultural entrophication," i.e., algae blooms, since about 1970. Studies by State Environmental and Marine Fisheries officials indicated a suspicious link between the algal blossoms and fish kills, decline in commercial fish catches, and an epidemic of red sore disease (from: Chowan River Water Quality Management Plan, 1982). However, since the State initiated "CHORE," i.e., the Chowan River Restoration Project, and declared the river to be "Nutrient Sensitive Waters," a number of positive actions have been taken to reduce both point and non-point sources of pollution into the waters. Chowan County has been and remains supportive of these actions. It should be noted that in 1985, fish landings were higher than in many previous years, reaching near record levels.

a. Policy Alternatives

(1) Not impose additional local restrictions on land clearing, but continue to support existing State and local efforts to improve and maintain water quality, including the 404 permit process, enforcement of septic tank placement regulations, particularly in areas with unsuitable soils and high erosion areas, and the Agricultural Non-Point Cost Share Program.

b. Policy Choices

(1) The County will support enforcement of current State, federal and local regulations as well as support those activities undertaken as a result of the Chowan River Water Quality Management Plan, 1982.

(2) Continue to enforce the County's subdivision regulations, requiring larger lot sizes for residences in areas where soils are not as well suited for septic tank placement in accord with rules enforced by the Regional Health Department.

c. Implementation Schedule

(1) Continue to support enforcement of existing regulatory provisions as outlined in b. above.

5. Off-Road Vehicles

The mention of "off-road" vehicles in coastal North Carolina usually conjures ideas of four-wheel drive type vehicles running up and down sandy beaches. However, there are no ocean beaches in Chowan County. Nevertheless, off-road vehicles are important in some sections of the County because of the necessity for landowners or hunters to travel in swampy areas. As this property is private and not available to the public as public beaches are, the use of these vehicles is acceptable in these cases. No other policy discussion on this issue is deemed necessary.

6. Residential and Commercial Land Development

Chowan County, as discussed under sections of this report analyzing existing population and economic trends, has few concentrations of population outside of Edenton. Also, just between the census years of 1970 and 1980 did the County end a two-decade old trend of population losses. Although the growth trend is projected to continue through the planning period, Chowan County is not in a "rapid growth" situation and is not suffering the pressures resulting from increased residential, commercial, or industrial uses of land. Without ignoring the limitations presented in other policy discussions in this report Chowan County views itself as being in a position to accommodate additional growth and development.

Additional development particularly commercial and industrial development, is regarded as desirable because of the important local revenue and employment generating impacts. The other policy statements regarding resource protection adequately voice the

County's concerns regarding these resources. However, land development, whether for residential, commercial or industrial uses, and in conformance with existing regulatory controls will be encouraged in Chowan County.

A more detailed discussion of the specific types of development along with relevant policy statements are included in the following section, "Economic and Community Development Policies".

C. ECONOMIC AND COMMUNITY DEVELOPMENT POLICIES

The analysis of overall existing conditions and trends for this 1986 Update of the Chowan County Land Use Plan did not show any alarming trends which would drastically alter general economic and community development policies contained in the 1981 Plan. However, some relevant trends which have been identified include:

- Population growth in the County, especially in the Edenton and middle Townships
- Growth in the County's labor force indicating a need for expanded job opportunities
- Growth and stability of the County's three basic resource extraction economic activities, i.e., farming, fishing, and forestry, and of increasing importance, manufacturing
- Continuing improvement of the Chowan River's water quality

Chowan County is very much concerned about the future growth in economic and community development. As the population gradually increases, the economic base will need to expand, more housing will be needed and increased, although relatively minor, pressures will be placed on community facilities. Sound public investment decisions will also have to be made. All of these issues and others are important in the formulation of land use policies. Particular issue areas and policy statements are discussed below.

1. Types and Locations of Desired Industry

Although there are several industries located in the County outside of Edenton, Chowan County has a need for increased job opportunities for many of its unemployed and underemployed citizens. Industrial development could provide these opportunities as well as expand the County's tax base.

Chowan County would like to see industry developed which could take advantage of existing natural resources and/or expand upon the current major industries in the County. Industries such as seafood processing, food canneries, paper and wood manufacture, and marine-related industries would all be considered desirable as

long as the integrity of environmentally sensitive areas could be assured of maintenance and stability. Also, other low-pollution, light manufacturing and/or assembly industries would be desirable.

a. Locations and Standards

The County would like to see industry locate, if feasible, in industrial parks which could be developed in suitable locations in the County. All industrial prospects will be required to comply with general development standards which are designed to protect environmentally sensitive areas, including:

(1) Providing an assessment of the impact of the development of the industry and be required to use the best available technology to avoid pollution of air or water during construction or operation.

(2) Be located on land having stable, well-drained soils. The sites should be located in areas adequately protected from flooding and be accessible to existing public utilities and transportation routes.

Some industries such as boat or ship maintenance and repair, may need to be close to water areas, or have adequate water access.

b. Policy Alternatives

Possible policy alternatives concerning industrial development in Chowan County include:

(1) The development of an active industrial recruiting program conducted jointly by the County and the Town of Edenton

(2) Conducting studies to see which industry types may want to locate in the County, and assessing possible environmental impacts

(3) Seeking funding and technical assistance to develop and additional industrial park or parks within the County

c. Policy Choices

As Chowan County recognizes the need for economic expansion and the fact that industrial development can greatly enhance this expansion, the County hereby adopts the following position.

(1) The County, in cooperation with the Town of Edenton, will seek to develop an active industrial recruitment program, seeking low-pollution, light manufacturing industries.

(2) Chowan County will seek technical assistance and financial help to develop at least one industrial park, to be located outside of Edenton.

(3) The County believes that all industrial prospects should be given a fair, case-by-case assessment in order to carefully compare possible economic benefits with possibly negative environmental effects. Such reviews will be coordinated by Chowan County.

(4) The County will provide water through the County water system, and with the Town of Edenton (if the Town's current policies change), provide, as much as is locationally and economically feasible, sewer, to newly locating industries.

d. Implementation Schedule

The County will establish more active contact with the State's industrial development representative for the region. The County will actively explore funding assistance to develop an industrial park, outside of, but near the Town of Edenton.

2. Local Commitment to Service Provisions

Currently, the major service to development provided by the County is water, through the County-wide water system. The County water system, independent of the Town of Edenton's system, serves nearly all residential areas in the County. The excess capacity of the County water system is more than adequate to meet projected demand based on population growth trends throughout the planning period (through 1995). A county-wide sewer system has been shown to be economically infeasible.

Both Chowan County and the Town of Edenton are committed to providing basic services such as water and, where feasible, sewer

to serve increased development in the County. However, it has been the policy of the Town of Edenton to not extend sewer services outside of the Town, and even the proposed new land application treatment system will have little if any excess capacity.

Other support facilities and services provided by or within the County such as police and fire protection, health services, social services, solid waste collection, and library services, appear to be adequate throughout the planning period. As development occurs and the local tax base expands accordingly, slightly higher levels of county-provided services can be provided.

a. Policy Alternatives

(1) Do not encourage the provision of services for new development in an attempt to keep things as they are.

(2) Encourage extension and expansion of needed services as much as feasible, to accommodate new residential, commercial, or industrial development.

b. Policy Choice

(1) Chowan County will remain committed to providing needed services, as economically feasible, to accommodate new residential, commercial, and industrial development in the County.

c. Implementation Schedule

(1) The County will work with the Town of Edenton throughout the period to encourage the provision of services where needed, and as feasible, for new development.

3. Desired Urban Growth Patterns

The most significant "urban" area in Chowan County is the Town of Edenton. Most of the rest of the residential development in the County has a pronounced rural pattern, except for two major subdivision areas near the Chowan River and the Albemarle Sound, i.e., Arrowhead-Chowan Beach and Cape Colony Country Club. However, with the expansion of the County water system, subdivisions may develop in other parts of the County.

Future subdivisions will all have to meet formal orderly development design standards in accord with the County Subdivision Regulations. The rural cluster community pattern, evident in the Valhalla, Rockyhock, and Tyner communities, for example, is usually built around a church or churches and a community store.

Most of the developed areas appear to be located in areas where the soils are more suited for development, i.e., capable of supporting septic tanks.

Another trend in the County possibly affecting urban growth patterns is the increasing number of mobile homes. Although mostly scattered on individual lots, mobile homes have established themselves as a viable housing alternative for many residents and the County may wish to plan for the eventuality of mobile home parks.

a. Policy Alternatives

(1) Chowan County could encourage the continuation of existing rural cluster community patterns.

(2) The County could discourage a duplication and continuation of the existing development patterns by expanding the current Zoning Ordinance which could prohibit areas with identified limitations (soils, or presence of AECs, for example) from developing.

(3) Develop and adopt a Mobile Home Park Ordinance to establish design standards for mobile home parks and mobile home placement in the County.

b. Policy Choices

(1) The existing rural cluster communities are a long established residential pattern in Chowan County, and will not be discouraged by the County. However, the County will not encourage "new" developments in areas with identified limitations such as soils, flood hazards, or proximity to AECs. However, redevelopment, or rehabilitation activities are viewed as being acceptable. All newly developing subdivisions will have to adhere to the standards of the County subdivision regulations.

(2) Because of the increasing potential for additional residential growth in the County, it may become necessary to expand the current ordinance to cover additional land areas. The County will also consider the adoption of a draft Mobile Home Park Ordinance to establish design standards for mobile home parks.

c. Implementation Schedule

(1) Adopt a Mobile Home Park Ordinance in FY 86.

(2) In FY 87, examine growth patterns and consider expansion of currently zoned areas.

4. Redevelopment of Developed Areas

"Redevelopment" usually implies the refurbishing or rehabilitation of deteriorating areas already concentrated with development. Although there are a number of substandard structures located throughout Chowan County, there are no substantial concentrations or "neighborhoods," as might be found in more urbanized areas. However, detailed surveys in the future may reveal residential areas with sufficient concentrations of substandard conditions, requiring redevelopment activities such as funded through a community development block grant. In such cases, it shall be the County's general policy to support applications for needed federal or state financial assistance. Also, some redevelopment activities in the Town of Edenton, such as along the waterfront, for example, may be of mutual benefit and/or interest of the County. Again, it shall be the County's position to support such activities.

a. Policy Alternatives

(1) Seeking funding through the State-administered Small Cities Community Development Block Grant Program to establish a housing improvements program when needed areas are identified.

(2) Continue to work with the Town of Edenton in redevelopment projects of mutual concern and benefit, such as along the Town's waterfront.

b. Policy Choices

(1) Chowan County would like to see redevelopment/rehabilitation activities occur in such communities as may be identified in the future, where there are concentrations of substandard housing conditions.

(2) The County will continue to work with the Town of Edenton in encouraging redevelopment activities of the waterfront area and other projects of mutual interest and concern.

c. Implementation Schedule

(1) In FY 87, apply for a Community Development Planning Grant in order to identify possible areas of concentrated substandard housing.

5. Commitment to State and Federal Programs

Chowan County is generally receptive to State and Federal programs, particularly those which provide improvements to the County. The County will continue to fully support such programs. The North Carolina Department of Transportation road and bridge improvement programs are very important to Chowan County.

Examples of other State and Federal programs which are important to and supported by Chowan County include: drainage planning and erosion control activities carried out by the U.S.D.A. Soil Conservation Service and the Agricultural Non-Point Pollution Control Cost Share Program, which is valuable to farmers; dredging and channel maintenance by the U.S. Army Corps of Engineers; and Federal and State projects which provide efficient and safe boat access for sports fishing.

All of these programs and others are important to Chowan County, and the County is committed to their continued support.

6. Assistance to Channel Maintenance

Proper maintenance of channels, including periodic dredging, is very important in Chowan County, mainly because of the substantial economic impact of commercial fisheries. If 1985 is taken as an indication, then water quality in the Chowan River is improving and commercial fishing is also increasing in the County. If silt or other deposits fill in the channels, this could impede efficient mobility and docking of commercial and recreational vessels. With adequate channel maintenance, Chowan County can make better utilization of its waterways for water transportation purposes.

7. Energy Facilities Siting

In some coastal counties, the siting or location of energy facilities relates to either peat mining or phosphate mining, or off-shore oil exploration. However, in the absence of significant peat reserves, phosphate, or oil resources, no specific, detailed policies in this area can be formulated at this time. Nevertheless, should the siting of an energy facility become a realistic possibility for Chowan County, it shall be the policy of the County to carefully review each such project and require strict adherence to federal, state, and any local environmental regulations.

8. Tourism and Beach and Waterfront Access

As discussed under the economic analysis section, tourism income more than doubled from 1981 to 1984 and will likely have a significant impact upon Chowan County's economy in the future. Although most of the tourist economy revolves around "Historic" Edenton, Chowan County does support tourism and is aware of the potential economic benefit of such activity.

Although there are several public access points to the public waters of Chowan County, i.e., two State-owned boat ramps and five under private ownership, but still open to the public, and one private beach, there is a real need for more public access.

a. Policy Alternatives

(1) The County could establish no policies nor take any additional action, and assume that existing boating access points are sufficient for public access.

(2) The County could take additional steps, including amending its Subdivision Ordinance, to assure better opportunity for general public waterfront access, even with developing waterfront access.

(3) The County could seek funding assistance through the Division of Coastal Management's Beach Access Program to plan for and eventually acquire and develop specific public access sites.

(4) The County could seek "donation" of sites by private landowners for public access development.

b. Policy Choice

(1) Chowan County wants to see improved waterfront access opportunities for the general public and will take additional measures to better assure those opportunities.

c. Implementation Schedule

(1) In FY 87, Chowan County will apply for funds through the Division of Coastal Management to develop a sound, practical public access Plan which will analyze the County's public access needs and designate potential access sites.

(2) Also, in FY 87, Chowan County will review its existing Subdivision Regulations to see if and how additional steps can be taken to improve public access in new waterfront subdivisions.

9. Density of Development

Overly dense development is not a problem in Chowan County, nor is anticipated to become a problem during the period covered by this plan update. With an anticipated population growth of 848 persons between 1985 and 1995, (an increase of 6.5% over the 1985 estimate), the rate of growth will not push developed densities to unacceptable levels. As presented in other discussions in this report, there are soils for suitable residential development in most of the County. Also, most of the County is classified as "Zone C", i.e., minimally flooded areas according to the Flood Insurance Maps prepared by the Federal Emergency Management Agency (FEMA). (See Maps 6, 8, and 9, attached).

Chowan County would like to see development continue in areas which are considered as most feasible to accommodate growth and where support services, such as water and sewer (including septic tank placement), are feasible and practical to provide. Also, the County will continue to enforce its Subdivision Regulations, and Zoning Ordinance for the Cape Colony Country Club areas, which have established minimum lot sizes in coordination with sanitary requirements of the County Health Department which will affect development densities. The minimum square footage for lots without access to public sewer ranges from 15,000 S.F. to 25,000 S.F. The average density of development in these areas will range from 2.9 to 1.7 units per acre.

10. Land Use Trends

The overall land use trends, as have been discussed in other sections of this report, include continuing, although at a slower rate, land clearing activities; continued emphasis on agricultural uses of land, and increasing, although not dramatic, waterfront residential development. With County water available to the entire County, subdivisions may develop outside of currently developed areas, such as the Macedonia area, for example. The projected land use changes are not anticipated to be causes for alarm in Chowan County. Continued enforcement and coordination, of existing local, state, and federal land use regulations, i.e., through CAMA, Corps of Engineers, 404 process, sanitary regulations, and the County's Subdivision Regulations, and Zoning Ordinance, and building inspections program, are adequate to help assure orderly growth and development in the County.

D. CONTINUING PUBLIC PARTICIPATION POLICIES

Chowan County recognizes that an important element in developing and implementing any local policies or plans regarding the use of land in the County, is involvement of the County's citizenry. From the initial stages of development of this 1986 update of the County's CAMA Land Use Plan, Chowan County has sought to provide open opportunities for citizen input. A "Public Participation Plan" was developed for the plan updating process, outlining the methodology for citizen involvement. (See Appendix I.) The plan stated that public involvement was to be generated primarily through the County Planning Board and through "public information" meetings, advertised in local newspapers and open to the general public. The Planning Board meetings also are open to the general public.

Specifically, during the beginning stages of the update process, on November 12, 1985, the Planning Board met with the planning consultant to review and discuss preliminary development issues; afterwards, a public information meeting was announced in the Chowan Herald newspaper, and public notices of the meeting were posted in public places. This meeting was held January 29, 1986, with the Planning Board, the planning consultant, and a CAMA representative attending. Citizens had the opportunity to provide input and voice their concerns about land use trends and policies. Throughout the plan development process, the Planning Board was actively involved. A series of meetings, or "working sessions," were held. All of these meetings were open to the public. Specifically, work sessions and/or meetings were held on the following dates: November 12, 1985; January 14, January 29, February 18, March 18, April 15, May 5, and a joint-session with both the Planning Board and Commissioners was held on June 2, 1986.

E. STORM HAZARD MITIGATION, POST-DISASTER RECOVERY, AND EVACUATION PLANS

The entire North Carolina Coastal region, including Chowan County, faces strong threats of damage each year from hurricanes, Northeasters, or other major storms. For nearly 20 years, there was a marked "slowdown", or "lull", in hurricane activity along the State's coast. Predictions were that a major storm could strike the State at any time during the hurricane season, since such a storm was "long overdue". And then, in September, 1984, the "waiting" ended. Hurricane Diana, with some of the strongest sustained winds ever recorded, rammed into the Southeast coast near Wilmington. Although damage was extensive, the potential destruction was much greater and the damage would have been greatly escalated had the storm hit land at a slightly different location. Again, a little over a year later in late September, 1985, coastal North Carolina faced another serious threat from Hurricane Gloria. Fortunately, this storm veered off the coast, took a northerly turn, and left no more than a good drenching for some areas. For two consecutive years, the State and the coastal areas were relatively fortunate. But what about next time?

Notice the excerpt below from, Before the Storm: Managing Development to Reduce Hurricane Damages, McElyea, Brower, & Godschalk, 1982, concerning development in coastal communities:

> "At the same time, development along the coast has grown by leaps and bounds. Unless this development is wisely located and built to withstand hurricane forces, North Carolina's coastal communities will face massive destruction. Local governments, as the primary protectors of the public health, safety, and general welfare, have a responsibility to reduce the risk of property damages and loss of life attending coastal development. They also have a responsibility to ensure that reconstruction following a major storm can occur quickly and leave the community safer from disaster in the future. These are the goals of hazard mitigation and reconstruction planning." (p.iii)

The purpose of this section of the 1986 CAMA Land Use Plan Update, is to assist Chowan County in managing development in potentially hazardous areas through establishing hazard mitigation policies and to reduce the risks associated with future hurricanes by developing post-disaster reconstruction/recovery policies, and reviewing the adequacy of current evacuation plans. The overriding concept of this exercise is simply "planning ahead of time."

> "Hazard mitigation includes any activity which reduces the probability that a disaster will occur or minimizes the damage caused by a disaster. Hazard mitigation includes not only managing devlopment, but also

evacuation planning and other measures to reduce losses of life and property. Reconstruction involves the full range of repair activities in the wake of a disaster which seek to return the community to a "normal" level of operations." (McElyea, Brower, & Godschalk, p. iii).

With this introduction, the following pages will present the storm hazard mitigation and post-disaster recovery policies, and review of the existing evacuation plan along with appropriate discussions.

1. Storm Hazard Mitigation: Discussion

Hazard mitigation, or actions taken to reduce the probability or impact of a disaster could involve a number of activities or policy decisions. The starting point, however, is to identify the types of hazards (including the relative severity and magnitude of risks), and the extent of development (including residential, commercial, etc.) located in storm hazard areas.

Hurricanes are extremely powerful, often unpredictable forces of nature. The two most severe effects are fatalities and property damage, which are usually the result of four causes: high winds, flooding, wave action, and erosion, each of which are discussed briefly below:

a. High Winds

High winds are the major determinants of a hurricane, by definition, i.e., a tropical disturbance with sustained winds of at least 73 miles per hour. Extreme hurricanes can have winds of up to 165 miles per hour, with gusts up to 200 miles per hour. These winds circulate around the center or "eye" of the storm. Although the friction or impact of the winds hitting land from the water causes some dissipation of the full force, there is still a tremendous amount of energy left to cause damage to buildings, overturn mobile homes, fell trees and powerlines, and destroy crops. Also, tornadoes can often be spawned by hurricane wind patterns. Wind stress is an important consideration in storm hazard mitigation planning. Because of a hurricane's size and power, it is likely that all of Chowan County would be subject to the same wind velocity in the event of a storm.

b. Flooding

Flooding, on the other hand, may not affect all areas with equal intensity. The excessive amounts of rainfall and the "storm surge" which often accompany hurricanes can cause massive coastal and riverine flooding causing excessive property damage and deaths by drownings. (More deaths are caused by drowning than any other cause in hurricanes.) Flooding is particularly a problem in ocean coastal areas because of the storm surge and low-lying areas.

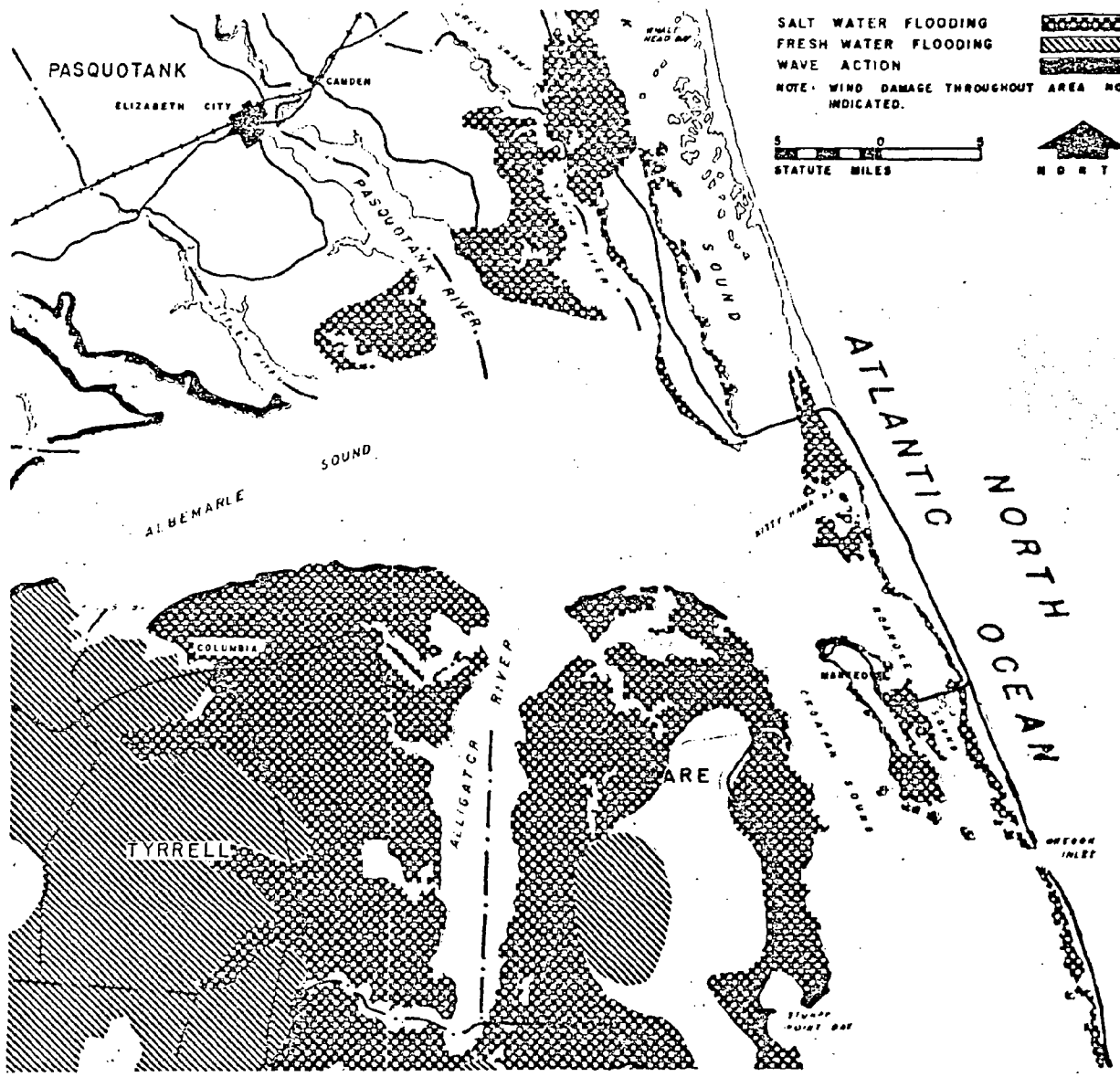
However, flooding can cause extensive damage in inland areas also, since many coastal areas have low elevations and are located in high hazard or "Zone A" flood areas according to the Federal Emergency Management Agency Maps. Based on recent flood insurance maps prepared for Chowan County, the majority of the County is not classified as being in the 100-year "high hazard" flood zone, or Zone "A." Substantial portions of the County are classed as Zone "C," i.e., minimally flooded. (See Map 6.) However, because of low elevation, the majority of the County could be subject to flooding during a severe hurricane. Although there are areas classified as "Zone C", i.e., in the 500-year "minimally flooded" area, in severe storms, Zone "C" areas would also likely be flooded. The risks, however, are not as severe as for Zone "A" areas. (See Map 9, "Composite Hazards Map," attached.)

As Map 6 shows, most of the "development" in Chowan County is in the minimally flooded Zone "C" areas, with the highest concentration of residential development in Zone "A" areas being in the northwest areas along the Chowan River and its creeks and tributaries.

Flooding cannot only cause damage to buildings, but saltwater flooding can cause serious damage to croplands, which is what took place in the southern Albemarle region in 1954 and 1955 from Hurricanes Hazel, Connie, Dianne, and Ione (McElyea, Brower, & Godschalk, pp. 2-8, 9). Notice Figure 1 on the following page. Chowan County was located sufficiently inland to have avoided the major flooding problems indicated in Figure 1, i.e., saltwater and freshwater flooding. Consideration of potential flood damage is, nevertheless, important in Chowan County's efforts to develop storm mitigation policies.

FIGURE 1

Flooding in the Albemarle Sound Region from Hurricanes Hazel, Connie, Diane, and Ione (1954-1955)



Source: N. C. Council of Civil Defense, 1955.

c. Wave Action

Damage from wave action is connected very closely to the storm surge, i.e., wind-driven water with high waves moving to vulnerable shoreline areas. Areas most likely to be affected are ocean erodible areas and estuarine shoreline areas. There are no ocean erodible areas in Chowan County, but there are extensive estuarine shoreline areas (75 feet inland from the mean high water mark of estuarine waters) in the County. However, wave action damage would have the most significant impact along the Albemarle Sound shoreline. As the existing land use map (Map 3, attached), and the composite hazards map (Map 9, attached) show, there is a significant amount of residential development in or near the estuarine shoreline area. Wave action can cause erosion as well as push possible flood waters to areas not reached by the storm surge itself. The estuarine shoreline along Chowan's riverine shores, i.e., the Chowan and a portion of the Yeopim, are generally sufficiently inland from an open coast so that the wave energy is dispersed and diffracted, mainly by the proximity to forested areas.

d. Erosion

The final major consideration in storm hazard mitigation is severe erosion, caused by high winds, high water, and heavy wave action. Again, in Chowan County, the area most susceptible to storm-related erosion is the estuarine shoreline AEC along the Albemarle Sound from Queen Anne Creek south to Hornblower Point, and from the Yeopim River southwest to the N.C. 32 Bridge, and from Pembroke Creek south of Edenton to the Chowan River up to the U.S. 17 Bridge. North of the U.S. 17 Bridge, along the banks of the Chowan River, erosion has historically not been as severe. (See Map 7 and Chart 1, pages 36-37.) This is essentially the same area potentially affected by the action of damaging waves and described in part c, above. Shoreline erosion could lead to loss of property through portions of waterfront lots being washed into the Sound or even actual structural damage to buildings. Erosion potential is an important factor to consider in developing storm hazard mitigation policies.

e. Summary: Storm Hazard Mitigation Considerations

In summary, all four of the major damaging forces of a hurricane, i.e., high winds, flooding, wave action, and shoreline erosion could have a potential impact upon Chowan County in the event of a major storm. The degree of susceptibility to losses and/or damages was generally alluded to in the previous discussions. However, Table 24, below, provides a better projection of the percent of the County's building structures (residential and commercial, etc.), subject to the potentially devastating effects of a major storm:

TABLE 24: *Percent of Structures Subject to Storm Damage Factors, Chowan County

Storm Impact	Percent Structures Possibly Affected	1984 Tax Value (Millions)
1. High winds	100%	284,087
2. Flooding	10%	28,407
3. Wave Action	5%	14,204
4. Shoreline Erosion	5%	14,204

*Based on preliminary projections derived from examination of Existing Land Use Map. Map prepared by Talbert, Cox & Associates. Tax value provided by County Finance Office.

The information in the Table above is preliminary and is not intended to convey the impression that every single structure possibly affected by damaging factors would be affected, only that the potential is there. Knowing that the potential is there forms the basis for setting forth storm hazard mitigation policies, keeping in mind that "mitigate" means actions which may reduce the probability of disaster, or minimize the damage caused by a disaster (McElyea, Brower, & Godschalk, p. iii).

f. Policy Statements: Storm Hazard Mitigation

In order to minimize the damage potentially caused by the effects of a hurricane or other major storm, Chowan County proposes the following policies.

(1) High Winds: Chowan County supports enforcement of the N. C. State Building Code, particularly requirements of construction standards to meet wind-resistive factors, i.e., "design wind velocity". The County will also support provisions in the State Building Code requiring tie-downs for mobile homes, which help resist wind damage.

(2) Flooding: Chowan County is supportive of the hazard mitigation elements of the National Flood Insurance Program. Currently, Chowan County is actively participating in the regular phase of the insurance program and has adopted and enforces a Flood Damage Prevention Ordinance. Chowan County also supports continued enforcement of the CAMA and 404 Wetlands development permit processes in areas potentially susceptible to flooding.

3. Wave Action and Shoreline Erosion: Chowan County is supportive of the CAMA development permit process for estuarine shoreline areas and the requisite development standards which encourage both shoreline stabilization and facilitation of proper drainage.

g. Implementation: Storm Hazard Mitigation

(1) In FY 85, Chowan County established a County-wide building inspection program, including the employment of a building inspector to enforce provisions of the N. C. State Building Code for new construction. These provisions include design requirements for wind resistance and mobile home tie-downs for newly placed mobile homes.

(2) Chowan County has adopted and enforces, through its building inspection program, a Flood Damage Prevention Ordinance for the Regular Phase of the National Flood Insurance Program. This ordinance which requires basic floodproofing for all new construction, including all first floor elevations being at or above the base flood elevations, will continue to be enforced as part of the County's new building inspection program. The base flood elevation, as shown on the flood insurance maps, is the elevation of the 100-year flood.

(3) The County will continue to support enforcement of State and Federal programs which aid in mitigation of hurricane hazards, including CAMA and the U.S. Army Corps of Engineers 404 permit process.

h. Other Mitigation Policy Areas

According to the CAMA Planning Guidelines, policy statements should also address the following three areas:

(1) Means of dealing with structures and uses which do not conform to the hazard mitigation policies.

(2) Means of encouraging hotels, restaurants, and similar large commercial structures to locate outside of erosion-prone areas.

(3) Policies which deal with the acquisition of parcels located in hazard areas or rendered unbuildable, for the purpose of public access.

All existing structures which do not conform to the County's mitigation policies can only be subject to the existing regulations. No additional requirements will be imposed. The latter two policy areas, above, cannot be effectively addressed by Chowan County, since they appear to be more applicable to oceanfront areas. There is no oceanfront in Chowan County.

2. Post-Disaster Reconstruction Plan

Chowan County recognizes that in the event of a major storm, it will be very important to have, at a minimum, a general recovery and reconstruction plan. However, it should be noted that Chowan County provides a number of emergency services, including disaster management. These services are coordinated by a full-time Emergency Services Coordinator. All of the County's emergency and disaster plans, including those dealing with the effects of a hurricane, are maintained by the Emergency Services Coordinator. The County has a comprehensive "Disaster Relief and Assistance Plan," with a number of very well-detailed subplans, or "Annexes." For example, "Annex F" provides a detailed Damage Assessment Plan, whereas "Annex G" details the Disaster Assistance Center Plan. All of the subplans detail clearly the actions and steps to be taken in the event of an emergency, the officials and responsible personnel involved, as well as the lines of responsibility. All of the actions are coordinated with the Town of Edenton.

Although many elements of "Post-Disaster Recovery" are already addressed in existing plans, some useful issues are not addressed. This section of the Land Use Plan Update will address these issues.

a. Appointment of a "Post Disaster Recovery Team"

Prior to a major storm having landfall in the vicinity of Chowan County, when evacuation orders are issued, the evacuation "Control Group," as identified in the Evacuation Plan, shall appoint a "Post-Disaster Recovery Team". This team shall consist of all of the members of the Evacuation Plan Support Group, also as identified in the Chowan County Evacuation Plan and listed below.

(1) Chowan County Manager - Group Chief
(2) Town of Edenton City Manager - Assistant Group Chief
(3) Sheriff
(4) Director of Social Services
(5) Superintendent of Schools
(6) County Health Director
(7) County Finance Director
(8) Chief Warning Service
(9) County Fire Marshall
(10) County Public Information Officer
(11) Chief Rescue Service
(12) State Highway Patrol Liaison Officer
(13) Red Cross Liaison Officer

The Emergency Preparedness Coordinator will serve as the Team Leader and will be responsible to the Chairman of the Board of Commissioners. The base of operations will be the Emergency Operations Center (EOC) identified in the County Evacuation Plan. The Disaster Recovery Team will be responsible for the following:

(1) Establishing an overall restoration schedule.

(2) Setting restoration priorities.

(3) Determining requirements for outside assistance and requesting such assistance when beyond local capabilities.

(4) Keeping the appropriate County and State officials informed.

(5) Keeping the public informed.

(6) Assembling and maintaining records of actions taken and expenditures and obligations incurred.

(7) Recommending to the Chairman of the Board of Commissioners to activate the local "state of emergency" ordinance if warranted.

(8) Commencing and coordinating cleanup, debris removal and utility restoration which would include coordination of restoration activities undertaken by private utility companies.

(9) Coordinating repair and restoration of essential public facilities and services in accordance with determined priorities.

(10) Assisting private businesses and individual property owners in obtaining information on the various types of assistance that might be available to them from federal and state agencies.

b. Immediate Clean-Up and Debris Removal

Coordination of this activity will be the responsibility of the Disaster Recovery Team.

c. Long Term Recovery/Restoration

The Disaster Recovery Team will be responsible for overseeing the orderly implementation of the reconstruction process after a major storm or hurricane in accord with the County's policies.

(1) Damage Assessments: Damage assessments will be necessary to determine as quickly as possible a realistic estimate of the amount of damage caused by a hurricane or major storm. Information such as the number of structures damaged, the magnitude of damage, and the estimated total dollar loss will need to be developed.

As stated previously, Chowan County already has a detailed "Damage Assessment Plan," which was prepared in accordance to guidelines provided by the N.C. Division of Emergency Management. In the Plan, certain personnel are assigned to the Damage Assessment Section (DAS), broken down further into two Damage Assessment Teams (one for private property and one for public property). The damage assessment activities are to be coordinated by the Chowan County Tax Supervisor, who serves as the Damage Assessment Officer.

As soon as safety conditions permit, the DAS personnel are to be notified to report to the County Emergency Operations Center, where they will receive their assignments and necessary supplies, i.e., standard forms, maps, etc. Written reports are to be provided to the EOC. The damage assessments will continue until all suspect areas are covered, even after the arrival of Federal and State assistance.

Also, the Plan includes a Damage Assessment Guide, which provides a rule-of-thumb for estimating damages to real property and placing the damage in one of the four categories below:

1) MINOR DAMAGE - HABITABLE 10% damage

   Impact damage, mostly exterior surface, broken glass, minor roof damage, some shingle loss, or flood water mark not much above floor line.

2) MINOR DAMAGE - UNINHABITABLE 30% damage

   Impact damage to exterior wall or walls create openings, portion of roof open to attic, some interior damage, or flood water mark up to 3 feet above floor line.

3) MAJOR DAMAGE - UNINHABITABLE 70% damage

   Impact damage is extensive to exterior and interior walls, portions of roof and/or walls destroyed, or flood water mark 3 to 6 feet above floor line.

4) DESTROYED - UNINHABITABLE 100% damage

   Impact damage has destroyed most of structure, roof gone, most walls destroyed, or flood water mark 8 feet above floor line.

The total estimated dollar value of damages will be summarized and reported to the Disaster Recovery Team Leader for transmittal to appropriate State and/or Federal officials.

(2) Reconstruction Development Standards: Generally, reconstruction shall be held at least to the same standards as before the storm. However, developed structures which were destroyed and which did not conform to the County's storm hazard mitigation policies, i.e., with basic measures to reduce damage by high winds, flooding, wave action or erosion, must be redeveloped according to those policies. Non-conforming uses in areas subject to the zoning ordinance will comply with provisions of the ordinance if destroyed. In the event the loss of property containing shoreline structures is substantial enough to prohibit the reissuing of a septic tank permit, the County will support the decision of the Sanitarian. In some instances, this may mean relocation of construction, or no reconstruction at all. To the extent feasible, when relocation is required, such relocation will be placed in less hazardous areas. Building permits to restore destroyed or damaged structures, which were built in conformance with the State Building Code and County storm hazard mitigation policies (including the subdivision regulations and, where applicable, the zoning ordinance), shall be issued automatically. All structures suffering major damage will be repaired according to the State Building Code. All structures suffering minor damage, regardless of location, will be allowed to be rebuilt to the original condition prior to the storm.

(3) Development Moratoria: Chowan County, because of a lack of densely populated areas, does not foresee the need to prohibit any and all development for any specified period of time. Residents shall be allowed to proceed with redevelopment and reconstruction as soon as practical and in accord with the various levels of State and federal disaster relief provided to them. Damage to the properties in some areas of the County may indicate a higher susceptibility to storm damage than other areas. If the County determines that some areas are more vulnerable to storm damage than others, then the Board of Commissioners may declare a development moratorium, prohibiting all redevelopment for a specified period of time. This will allow the County time to assess previous damage mitigation policies for their effectiveness and possible modification.

(4) Repair/Reconstruction Schedule: The following schedule of activities and time frame are proposed with the realistic idea that many factors of a hurricane may render the Schedule infeasible.

Activity	Time Frame
(a) Complete and Report Damage Assessments	Two weeks after storm
(b) Begin Repairs to Critical Utilities and Facilities	As soon as possible after storm
(c) Permitting of Reconstruction activities for all damaged structures ("minor" to pre-storm original status, "major" to State building code and hazard mitigation standards	Two weeks after damage assessments are complete

(5) Agency Responsible for Implementation: The Chairman of the Chowan County Board of Commissioners, as chief elected official of the County, will be the chief responsible authority in implementing these policies. The Board Chairman will delegate the oversight of the reconstruction and recovery effort and implementation of the plan.

(6) Repair and Replacement of Public Utilities: If water lines or any component of the water system are damaged and it is determined that the facilities can be relocated to a less hazardous location, then they will be relocated during reconstruction. Damage to other utilities, such as electric lines or telephone lines, will be the responsibility of the appropriate private utility company.

3. Hurricane Evacuation Plan

Chowan County, as stated previously, has an official "Hurricane Evacuation Plan" which was adopted in June, 1978 and has been updated periodically. A review of this plan indicates that it is generally adequate for the County's needs. The plan indicated a projected evacuation time of from 6-8 hours, which is adequate within the National Weather Service warning system guidelines. The Hurricane Evacuation Plan involves a number of County and Town of Edenton personnel and local agencies, with varying specific duties and responsibilities. There are eight shelter locations throughout the County, mostly in school facilities. During both the storm threats of 1984 and 1985, people did come to the shelters, although there were no required evacuations. However, since there are no "stocked shelters," residents are encouraged to bring food to the shelter site. (See Appendix II.)

4. Re-Entry

Factors regarding re-entry are also included in the Hurricane Evacuation Plan. Because of the possibility of fallen power lines, or telephone lines, re-entry will be closely coordinated with the appropriate private utility companies.

The Chowan County Plan has been reviewed by the North Carolina Division of Emergency Management and meets the agency's approval.

The evacuation plan will be incorporated into the Land Use Plan by reference.

SECTION III :

Land Classification System

SECTION III: LAND CLASSIFICATION SYSTEM

The land classification system provides a uniform way of looking at how the planned use of land interacts with environmentally sensitive areas and with the development of a County or Town. It is not a strict regulatory device in the sense of a zoning ordinance or zoning map. It represents more of a tool to understand relationships between various land use categories and how these relationships help shape local policy. Particular attention is focused on how intensely land is utilized and the level of services required to support that intensity. Land classification is also useful in the staging of services necessary to support development. The regulations for the Coastal Area Management Act state:

> "The land classification system provides a framework to be used by local governments to identify the future use of all lands. The designation of land classes allows the local government to illustrate their policy statements as to where and to what density they want growth to occur, and where they want to conserve natural and cultural resources by guiding growth." (7B.0204) (b)

There are five general land use classifications under CAMA: Developed; Transition; Community; Rural; and Conservation. In applying the land classification system, each local government should give careful consideration to how, where and when certain types of, and intensity of "development," will be either encouraged or discouraged. A brief summary of the five broad classifications, as contained in the CAMA rules, might illustrate this. For example:

> "Urban land uses and higher intensity uses which presently require the traditional urban services should be directed to lands classified developed. Areas developing or anticipated to develop at urban densities which will eventually require urban services should be directed to lands classified transition. Low density development in settlements which will not require sewer services should be directed to areas classified as community. Agriculture, forestry, mineral extraction and other similar low intensity uses and very low density, dispersed residential uses should be directed to lands classified rural. Generally, public or private water or sewer systems will not be provided in areas classified rural as an incentive for intense development." (7B.0204) (c)

The purpose of the conservation class is to "provide for the effective long-term management and protection of significant, limited, or irreplaceable areas." Consequently, urban services (whether public or private) should not be provided to those areas as an incentive to "stimulate" more intense development. Each of these classes must be represented on a Land Classification Map.

The five land classifications and Land Classification Map are therefore intended to serve as a visual reflection of the policies previously stated in Section II. Ideally, the map which depicts these classifications should be as flexible as the policies that guide them. (See Map 10, attached, Land Classification Map)

The five land use classifications, as they will be applied in Chowan County, are identified and defined below.

A. DEVELOPED

The developed class of land use provides for continued intensive development and redevelopment of existing cities or municipalities. Areas to be classified as "developed" include lands currently developed for urban purposes or approaching a density of 500 dwellings per square mile that are provided with usual municipal or public services, police and fire protection. In other words, such areas must currently be "urban" in character, i.e. have mixed land uses such as residential, commercial, industrial and institutional, or other uses at high to medium densities.

In Chowan County, the major area meeting this criteria is the Town of Edenton. Edenton provides all of the usual municipal services as well as water and sewer. In fact, the only municipal sewer service in the County is located in Edenton. However, the Chowan County water system serves most of the County, including several areas outside of Edenton which are at, or approaching, "urban" densities, but still not yet "developed."

B. TRANSITION

Transition land is classified as those lands providing for future intensive urban development within the ensuing ten years on lands that are most suitable and that will be scheduled for provision of necessary urban utilities and services (whether from public or private sources). They may also provide for additional growth when additional lands in the developed class are not available or when they are severely limited for development.

Lands classified "transition" may include:

- lands currently having urban services;
- lands necessary to accommodate the population and economic growth anticipated within the planning jurisdiction over the next five to ten years;
- areas which are in, or will be in, a "transition" state of development, i.e. going from a lower intensity to a

higher intensity, of uses and will eventually require urban services.

Transition lands must further:

- be served or be readily served by water, sewer, and other urban services including streets, and
- be generally free of severe physical limitations for urban development.

The "transition" class should not include:

- lands of high potential for agriculture, forestry, or mineral extraction, or land falling within extensive rural areas being managed commercially for these uses, when other lands are available;
- lands where urban development might result in major or irreversible damage to important environmental, scientific, or scenic values, or;
- land where urban development might result in damage to natural systems or processes of more than local concern; and
- lands where development will result in undue risk to life or property from natural hazards or existing land uses.

The areas to be classified as "transition" in Chowan County include some areas immediately adjacent to the Town of Edenton which currently receive County water and have the best possibility of being served by the Town of Edenton's sewer service. This area extends along US 17 Business, both to the south of the Town, i.e., Riverton, and to the north, to the Pine Grove Terrace area. However, another substantial area which is not immediately adjacent to Edenton, but which has been developing and will likely continue, and should also come under this classification, is the Cape Colony-Country Club area. This should also include the general vicinity around the Edenton Municipal Airport, excluding the Airport property itself, since it is owned by the Town of Edenton, and outside of the County's jurisdiction. Currently, this area has central water from the County water system. If Edenton ever changes its policy on sewer extensions beyond the Town limits, and funds become available and it is economically feasible, the County would like to see sewer service provided to this area. The land use analysis showed that there were "generally" suitable soils for development in this area, as well as being outside of the high-hazard flood areas.

The relationship between the "developed and transition" classification is important in predominantly rural counties like Chowan. The first class is meant to define the already developed areas and/or those areas where public investment decisions will be required to provide the necessary urban services. These become

important areas to closely monitor. The Coastal Resources Commission has further clarified this relationship as described below:

The Developed and Transition classes should be the only lands under active consideration by the County or municipality for intensive urban development requiring urban services. The area within these classes is where detailed local land use and public investment planning will occur. State and Federal expenditures on projects associated with urban development (water, sewer, urban street systems, etc.) will be guided to these areas. Large amounts of vacant land suitable for urban development within the Developed class should be taken into account when calculating the amount of additional lands needed to accommodate projected growth.

C. COMMUNITY

The purpose of the community class is to provide for clustered, mixed land uses at low densities to help meet the housing, shopping, employment, and other needs in rural areas. Areas meeting the intent of the community class are presently developed at low densities which are suitable for private septic tank use. These areas are clustered residential and/or commercial land uses which provide both low intensity shopping and housing opportunities, and provide a local social sense of "community." Very limited municipal-type services, such as fire protection and community water, may be available, but municipal-type sewer systems are not to be provided as a catalyst for future development. In some unusual cases, sewer systems may be possible, but only to correct an existing or projected public health hazard. Areas developed at low density in a cluster meet the intent of the community class if they exhibit characteristics, such as:

- densities of less than 500 dwellings per square mile, or
- few residential development densities which meet or exceed three dwellings per acre, or
- residential lot sizes of 15,000 square feet or greater, and/or
- low population densities such as 640 persons per square mile (one person per acre)

This is an important classification in Chowan County, since most of the County's population not residing in the areas classified previously as either "Developed" or "Transition," live in such clusters. There are no other incorporated municipalities in Chowan County, other than Edenton, but many small communities are located along the primary roads in the County. Areas classified as "Community" include: Macedonia, Valhalla, Rockyhock, Smalls Crossroads, the Center Hill area, and the area west of Gliden along 132 north to the Gates County line. Also, the waterfront developing areas of Arrowhead Beach and the Chowan Beach area should also be considered "Community." All of these areas currently are serviced by the County water system.

D. RURAL

The purpose of the rural class is to provide for agriculture, forestry, mineral extraction, and various other low intensity uses on large sites, including low density dispersed residential uses where urban services are not and will not be required. Any development in this class should be compatible with resource production and should not significantly impair or permanently alter natural resources. Areas meeting the intent of this classification are appropriate for or presently used for agriculture, forestry, mineral extraction, and similar allied uses. Very low density dispersed, single-family residential uses are also appropriate within rural areas where lot sizes are large and where densities do not require the provision of urban-type services. Private septic tanks and wells are the primary on-site services available to support residential development, but fire, rescue squad, and sheriff protection may also be available. Population densities may be very low, possibly less than one person per acre.

The majority of land within Chowan County falls within the "Rural" classification. This classification is very important in Chowan County, because of the economic importance of agriculture and forestry activities.

E. CONSERVATION

The final land use category, according to CAMA guidelines, is the "Conservation" class, which provides for effective long-term management of significant, limited, or irreplaceable resources, specifically, and at minimum, all of the statutorily defined AECs. However, beyond the presence of AECs, other areas within the County, because of natural, cultural, recreational, productive, or scenic value, may also require similar "effective long-term management." Examples could include major wetlands (other than statutorily defined coastal wetlands); essentially undeveloped shorelines that are unique, fragile, or hazardous for development; lands that provide necessary habitat conditions (especially for remnant species); pocosins; or publicly owned water supply watersheds and acquifers.

The designation "Conservation" should not be misconstrued to imply "non-use," but does imply a need for careful and cautious <u>management</u> of any allowable use. For example, within a "conservation" area, there may be high ground areas which are suitable for "development," in which case development should be allowed to take place under carefully managed conditions. The term "preservation," on the other hand, implies total restriction on all uses. Within lands designated Conservation, each proposal, or application for any "developed" use should be reviewed on a case by case basis.

Other than the statutorily-defined Areas of Environmental Concern, there are not many additional areas of Chowan County that have special features conducive to being placed in the Conserva-

tion classification. The overall premise for the designation "Conservation" in Chowan County will be to strike the delicate balance between careful long-term management of sensitive or valuable resources and the freedom of landowners to utilize their properties.

Therefore, in Chowan County, the environmentally sensitive areas identified as Areas of Environmental Concern (AECs), i.e., Estuarine Waters, Estuarine Shorelines, and Public Trust Areas are classified as "Conservation." There are no significant coastal wetlands, or "salt marshes" in Chowan County. However, outside of these Areas of Environmental Concern, the primary designation of "Conservation" areas in Chowan County will be for the purpose of sustaining shoreline stability, protecting water quality, along the County's estuarine waterways, and protecting certain wooded swamp areas from the encroachment of improper development, such as the area on either side of the U.S. 17 Bridge in the southwest portion of the County. (See attached Land Classification Map, Map 10.)

Since, as stated previously, "Conservation" does not imply "Preservation," specific allowable uses in the Conservation class shall include:

- Drainage: Adequate drainage is essential to the economic vitality of Chowan County; therefore, drainage facilities over and through these areas, but not with the intent of draining the Conservation areas for "developed" purposes, will be allowed. Such facilities may include diking, tiling, and piping systems.

- Low density residential development if and as allowed by the County Health Department and not opposed by the U. S. Soil Conservation Service. However, water and/or sewer services will not be extended to such a residential area merely to stimulate additional growth and development. On-site sewer services will be required and must be feasible.

- Water-oriented uses such as piers, docks, and marinas, if they are shown not to cause detriment to the estuarine waters or the Conservation lands.

- Necessary utility service lines, such as water, sewer, electrical, natural gas, etc., when it is demonstrated that the ecological system of the Conservation estuarine area will not be significantly altered. (As noted in Item 2 above, development of and/or extension of <u>necessary</u> utilities and services will not be done merely as a stimulus for additional growth and development, only to the extent needed).

- Roadways, when construction of roadways can be conducted without significantly altering the ecological system, and in compliance with existing federal, state, and local regulations.

- Timber harvesting with approved management practices.

- Barge landings.

- Marinas (upon careful determination that substantial pollution will not occur).

In conjunction with the Policy Statements section of this Plan, each application for a "developed" use in the Conservation classification, shall be brought before the County Planning Board and reviewed on a case-by-case basis, with possible technical advice from the County Health Department, Building Inspector, CAMA Permit Officer, U.S. Soil Conservation Service, and possibly other specialists, prior to approval. The County Planning Board may recommend modification of the Proposal.

F. LAND CLASSIFICATION SUMMARY

The proposed classification of land for varying levels of intensity and provision of public services in Chowan County were presented in parts A through E, above. These classifications relate directly to the "policy statements" contained in Section II of this Plan. Additional information on the relationship between the land classification system and policies will be presented in the following Section IV.

SECTION IV:

Relationship Of Policies And Land Classification System

SECTION IV: RELATIONSHIP OF POLICIES AND LAND CLASSIFICATIONS

As required by the Coastal Area Management Act, the land use plan must relate the policies section to the land classification map and provide some indication as to which land uses are appropriate in each class.

A. DEVELOPED AND TRANSITION CLASSES

As mentioned in the discussion of existing conditions, most of the County's growth will occur in and around currently developed and developing areas. These are areas where basic services such as water and community support services are available or might be feasible within the planning period. The developed and transition classes were specifically designated to accommodate these more intensively developed areas and land uses, including residential, commercial, industrial parks and open space, community facilities and transportation. Hazardous or offensive uses such as land application systems, power plants, and bulk chemical storage facilities will be located away from these classes.

B. COMMUNITY CLASS

Intensive development will not be encouraged in this class due to the lack of urban services and/or physical limitations. The general range of acceptable uses are limited to residences, isolated general and convenience stores and churches, and other public facilities. These areas are usually found at crossroads within the "rural" classification. Most of these areas are currently served by the County water system, and because of the low-density development, do not require centralized sewage collection and disposal.

C. RURAL CLASS

The rural class is the broadest of the land classes and is designated to provide for agriculture, forest management, mineral extraction and other low intensity uses. Residences may be located within the rural class where urban services, other than the County water system, are not required and where natural resources will not be permanently impaired. Some large developments may be encouraged in the rural class when there is an absence of otherwise suitable land within the development and transition classes and/or when there is a possible threat to the urban populace. Such large developments or uses include airports, land application sewer systems, and power plants. The County also reserves the privilege of allowing specific types of industrial development in the rural areas if in the opinion of the government there will be no harmful or adverse effects from such a location.

D. CONSERVATION CLASS

The conservation class is designated to provide for effective long-term management of significant limited or irreplaceable areas which include Areas of Environmental Concern (undeveloped shorelines that are unique, fragile, or hazardous for development), and publicly owned gamelands and parks and cultural and historical sites. Development in the estuarine system should be restricted to such uses as piers, bulkheads, marinas, and other water-dependent uses. Policy Statements under Resource Protection, and Resource Production and Management in Section II of this plan address the County's intentions under this class. Also, a more detailed discussion of the Conservation classification, along with permissible uses, is included in the preceding Section III.

SECTION V: INTERGOVERNMENTAL COORDINATION:

SECTION V: INTERGOVERNMENTAL COORDINATION

Throughout the development of this Plan, effort was made to make the policies consistent and compatible with other local, State, and Federal requirements. At various stages during the Plan's development process, contact was made with the Town of Edenton in order to coordinate certain policy issues. Implementation of the Plan will likewise follow the same intergovernmental concern.

APPENDICES

APPENDIX A

CHOWAN COUNTY PUBLIC PARTICIPATION PLAN FOR THE 1985-86 CAMA LAND USE PLAN UPDATE

I. Introduction

Chowan County, in compliance with requirements of the North Carolina Coastal Area Management Act, is preparing an update to its Land Development Plan. The purpose of this updated plan is to generally re-assess growth and development trends of the County in relation to the capacity of community facilities and development constraints. Issues affecting the County's policies on growth and development will also be closely reviewed during this plan updating process.

A significant aspect of the plan updating process is the involvement of the County's citizenry. This Public Participation Plan will outline the means by which the County will foster and encourage such participation throughout the planning process.

II. Public Participation Plan

Public involvement in the 1985-86 Land Use Plan Update will be generated primarily through meetings with the Chowan County Planning Board. This Board is composed of seven (7) local residents. Also, general "public Information" meetings will be held to present and discuss issues before the general public. All such meetings will be publicized through advertisements in local newspapers and posting of public notices. Presentations will also be made before the Chowan County Board of Commissioners and some "joint" work sessions with both boards may be conducted. It should be noted that both the Planning Board and the Board of Commissioners meetings are open to the public.

III. Preliminary Meeting Schedule

The initial preliminary schedule of meetings is as follows:

A. Meeting with the Planning Board to review preliminary development issues, November 12, 1985.

B. Public information meeting with citizens, November 20, 1985.

C. Meeting with the County Board of Commissioners to review preliminary issues, November 5, 1985.

Other meetings/work sessions will be scheduled and appropriately publicized throughout the land use plan update process. The above schedule is presented as being preliminary.

NOTICE OF PUBLIC INFORMATION MEETING

COUNTY OF CHOWAN

1986 CAMA LAND USE PLAN UPDATE

THE CHOWAN COUNTY BOARD OF COMMISSIONERS WILL CONDUCT A PUBLIC INFORMATION MEETING ON WEDNESDAY, JANUARY 29, 1986, AT 7:00 P.M. AT THE COMMISSIONERS' MEETING ROOM,COUNTY COURTHOUSE, EDENTON, N.C., TO DISCUSS THE UPDATE OF THE CHOWAN COUNTY 1986 CAMA LAND USE PLAN. THE COUNTY PLANNING BOARD AND PLANNING CONSULTANT WILL BE IN ATTENDANCE AND DEVELOPMENT ISSUES AND POLICIES CONCERNING THIS UPDATE WILL BE DISCUSSED.

ALL INTERESTED CITIZENS ARE URGED TO ATTEND THIS MEETING.

FOR FURTHER INFORMATION CONTACT THE COUNTY MANAGER'S OFFICE IN EDENTON.

MR. ALTON ELMORE,
CHAIRMAN
CHOWAN COUNTY BOARD
OF COMMISSIONERS

APPENDIX II

SUPPLEMENT TO

CHOWAN COUNTY HURRICANE EVACUATION PLAN

Developed by the Chowan County Civil Preparedness Agency in Conjunction with the North Carolina Division of Civil Preparedness

Hurricane Safety Rules

Hurricane advisories will help you save your life . . . but you must help.
Follow these safety rules during hurricane emergencies:

1. Enter each hurricane season prepared. Every June through November, recheck your supply of boards, tools, batteries, nonperishable foods, and the other equipment you will need when a hurricane strikes your town.

2. When you hear the first tropical storm or hurricane advisory, listen for future messages; this will prepare you for a hurricane emergency well in advance of the issuance of watches and warnings.

3. When your area is covered by a hurricane watch, continue normal activities, but stay tuned to radio or television for all National Weather Service advisories. Remember, a hurricane watch means possible danger within 24 hours; if the danger materializes, a hurricane warning will be issued. Meanwhile, keep alert. Ignore rumors.

4. When your area receives a hurricane warning:

   Plan your time before the storm arrives and avoid the last-minute hurry which might leave you marooned, or unprepared.

   Keep calm until the emergency has ended.

   Leave low-lying areas that may be swept by high tides or storm waves well in advance of the hurricane. If you plan to evacuate, evacuate early.

   Leave mobile homes for more substantial shelter. They are particularly vulnerable to overturning during strong winds. Damage can be minimized by securing mobile homes with heavy cables anchored in concrete footing. However, even if tied down your mobile home does not provide safe shelter during a hurricane.

   Moor your boat securely before the storm arrives, or evacuate it to a designated safe area. When your boat is moored, leave it, and don't return once the wind and waves are up.

   Board up windows or protect them with storm shutters or tape. Danger to small windows is mainly from wind-driven debris. Larger windows may be broken by wind pressure.

   Secure outdoor objects that might be blown away or uprooted. Garbage cans, garden tools, toys, signs, porch furniture, and a number of other harmless items become missiles of destruction in hurricane winds. Anchor them or store them inside before the storm strikes.

   Store drinking water in clean bathtubs, jugs, bottles, and cooking utensils; your town's water supply may be contaminated by flooding or damaged by hurricane floods.

   Check your battery-powered equipment. Your radio may be your only link with the world during the hurricane, and emergency cooking facilities, lights, and flashlights will be essential if utilities are interrupted.

   Keep your car fueled. Service stations may be inoperable for several days after the storm strikes, due to flooding or interrupted electrical power.

   Stay at home, if it is sturdy and on high ground; if it is not, move to a designated shelter, and stay there until the storm is over.

   Remain indoors during the hurricane. Travel is extremely dangerous when winds and tides are whipping through your area.

   Monitor the storm's position through National Weather Service advisories.

BEWARE THE EYE OF THE HURRICANE

If the calm storm center passes directly overhead, there will be a lull in the wind lasting from a few minutes to half an hour or more. Stay in a safe place unless emergency repairs are absolutely necessary. But remember, at the other side of the eye, the winds rise rapidly to hurricane force, and come from the opposite direction.

5. When the hurricane has passed:

   Seek necessary medical care at Red Cross disaster stations or hospitals.

   Stay out of disaster areas. Unless you are qualified to help, your presence might hamper first-aid and rescue work.

   Drive carefully along debris-filled streets. Roads may be undermined and may collapse under the weight of a car. Slides along cuts are also a hazard.

   Avoid loose or dangling wires, and report them immediately to your power company or the nearest law enforcement officer.

   Report broken sewer or water mains to the water department.

   Prevent fires. Lowered water pressure may make fire-fighting difficult.

   Check refrigerated food for spoilage if power has been off during the storm.

Remember that hurricanes moving inland can cause severe flooding. Stay away from river banks and streams and know their elevation.

Tornadoes spawned by hurricanes are among the storms' worst killers. When a hurricane approaches, listen for tornado watches and warnings. A tornado watch means tornadoes are expected to develop. A tornado warning means a tornado has actually been sighted. When your area receives a tornado warning, seek inside shelter immediately, preferably below ground level. If a tornado catches you outside, move away from its path at a right angle. If there is no time to escape, lie flat in the nearest depression, such as a ditch or ravine.

Safe Boating Precautions

1. Heed and have respect for National Weather Service warnings. Begin safe anchorage trip before storm tide arrives.

2. Trailer boats should be removed from the water and stored.

3. Out of area boats should inquire and plan a desirable and convenient location for safe anchorage or follow local boats to a safe anchorage area.

4. Safe anchor rigging should consist of new or good tie ropes, with extra length and at least 3 or 4 substantial anchors for the craft.

5. If possible, boats should anchor in groups with bow lines individually tied high to tree or piling on mainland, with loose rope for rising tide, and the sterns well anchored to hooks. Boats in the group should also be tied together at bows and sterns using protective bumpers of fenders between. Outside boats of the group should be bridled off from stern to protect entire anchored group from angling or extreme movement due to wind and current (smaller boats in center of this type anchorage have been known to fill with water, but could not sink due to the cradle effect between other boats).

6. Do not tie up parallel to bank, receding tides often beach or capsize boats in this type anchorage.

7. Be sure that a navigable passage at stern of secured boats is made available for late arriving boats seeking safe anchorage beyond the first boats anchored.

8. Safe anchorage boats should be tied high, using a half hitch knot (loop knots slip). Rope lengths should be sufficient to take care of excessive high water.

CHOWAN COUNTY
CIVIL PREPAREDNESS AGENCY
ROOM 100 HOTEL JOSEPH HEWES
EDENTON, NORTH CAROLINA

HURRAY D. ASHLEY
DIRECTOR

TELEPHONE
482-3111

TO ALL RESIDENTS OF CHOWAN COUNTY

In case of a hurricane approaching the coast of North Carolina or Chowan County, you and your family will need to know what to do and where to go to survive the high winds, water and disastrous effects that could be caused by severe weather conditions in our area.

The advice contained in this newspaper supplement is a part of the official Hurricane Evacuation Plan for Chowan County. This Plan has been prepared at the request of, and approved by, the Chowan County Board of Commissioners, and the Mayor of Edenton. Participating in the preparation of this Plan were the Chowan County Civil Preparedness Agency and the North Carolina Department of Crime Control and Public Safety - Division of Civil Preparedness.

This newspaper supplement will give all residents of Chowan County their best chance of survival should a hurricane strike. We urge all citizens to carefully study the contents of this Plan and keep it in a safe place where it can be readily found.

Additional information can be secured from the Chowan County Civil Preparedness Agency, County Office Building, East King Street, Edenton, North Carolina - Telephone Number 482-3111.

C. A. Phillips, Chairman
Chowan County Board of Commissioners

Hurricane Facts

The average life of a hurricane is 8 days. The average number of hurricanes developing in a year is four and the greatest number has been 11.

Winds of 190 MPH have been observed in hurricanes (Camille in 1969).

Storm tides are the hurricane's worst killer, not the wind. Consider; a block of water two miles long, 12 feet deep and one mile wide is a battering ram weighing more than 20 million tons.

Wave heights are not part of the value given as storm tide or storm surge.

6000 people lost their lives when a hurricane hit the Texas Coast in 1900. During the worst storm on record, Camille in 1969, only 256 lives were lost. However, more than 100,000 evacuated to higher ground. It has been officially estimated that evacuating saved 50,000 lives.

Tornadoes are a part of the hurricane's bag of hazards.

Breakers coming ashore in a hurricane travel at about one-half the speeds of winds in the storm. Relating this to pressure created by the breakers we have approximately 10,000 pounds per square foot.

Hurricane damage is greatest in the northeast quadrant of the storm.

A storm surge of up to 18 feet can be expected on our beaches.

Warning areas are large for the following reasons: The average error when forecasting landfall 24 hours in advance is 98 miles either side. For a 12-hour landfall prediction the average error is 48 miles. Warning areas usually cover about 200 miles of the coast.

What should you do now in preparation for the hurricane season?

1. Know the elevation of your property above mean sea level.
2. Have a safe evacuation route planned.
3. Learn the storm surge history for your area.

What should you expect following a direct hit from a hurricane?

1. Polluted water, crippled communications, no electricity, sewers backed up and overflowing, structures undermined, severe erosion to shorelines.
2. Personal problems.

HURRICANE WATCHES MEAN A HURRICANE MAY THREATEN AN AREA WITHIN 24 HOURS.

HURRICANE WARNINGS MEAN A HURRICANE IS EXPECTED TO STRIKE AN AREA WITHIN HOURS.

Hurricane Shelters

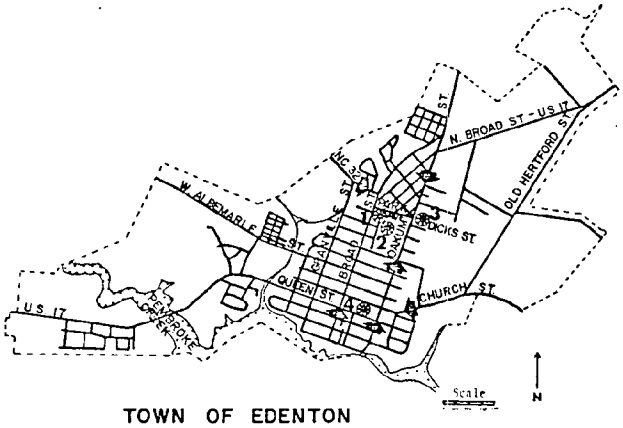
SHELTER NUMBER	BUILDING AND LOCATION
1	National Guard Armory North Broad Street Edenton, North Carolina 27932
2	John A. Holmes High School Woodard Street Edenton, North Carolina 27932
3	D. F. Walker School North Oakum Street Edenton, North Carolina 27932
4	Ernest A. Swain Elementary School Court Street Edenton, North Carolina 27932
5	Chowan High School N.C. Highway No. 32 - North Tyner, North Carolina 27980
6	White Oak Elementary School County Road No. 1226 (1/2 mile west of Tyner, North Carolina - NC Highway 32 - North) 27980
7	Jaycee Building County Road 1119 (Edenton Municipal Airport)Edenton, North Carolina 27932
8	American Legion Building (Ed Bond Post # 40) U.S. Highway 17 - South Edenton, North Carolina 27932

Instructions for Evacuees

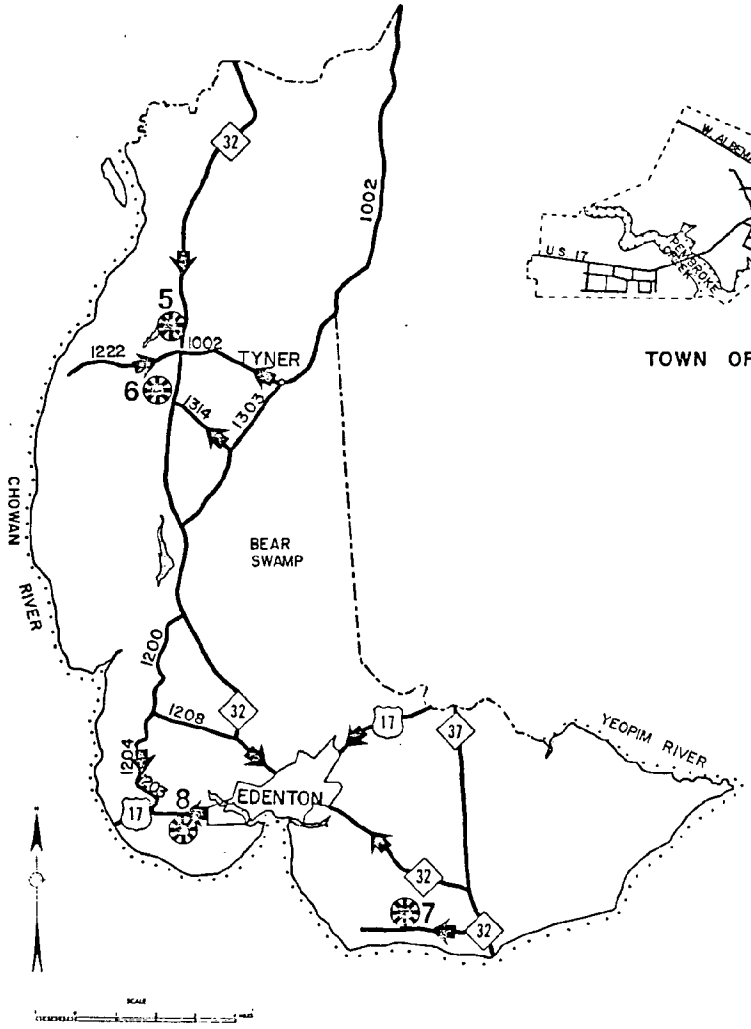
When your local government advises evacuation, keep calm, and follow these procedures promptly:

1. Shut off main gas valve and pull main power switch before leaving home.
2. Head for the designated shelters or evacuation points indicated for your area, as directed on your Evacuation Plan maps and by broadcasts during the emergency. Follow routes indicated on maps. Drive up to shelter entrance, unload, and park car as police instruct. If on foot, proceed to nearest loading station and board buses. No fare will be charged.
3. Take only clothing, food, and special medicine that is necessary, do not try to bring household equipment. Evacuated areas will be policed to prevent looting.
4. Follow instructions of shelter personnel, and volunteer to help with any tasks needed for efficient shelter operation.
5. Remain at the shelter until informed that you may leave. People will not be allowed back into evacuated areas until advised by official public announcement.

Questions should be directed to the Chowan County Civil Preparedness Coordinator, Room 100, Hotel Joseph Hewes, Edenton, North Carolina 27932 (Phone: 919/482-3111)



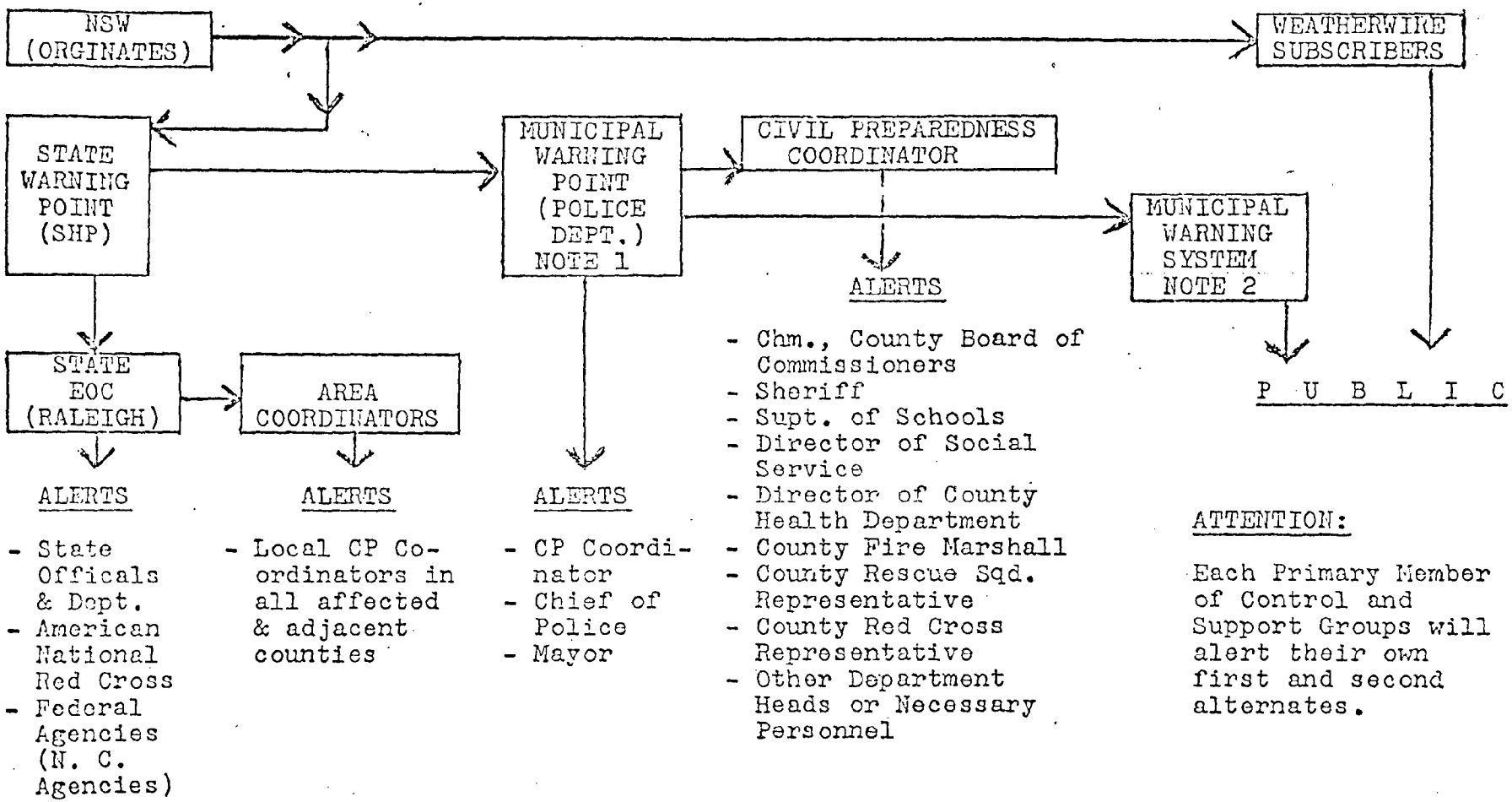
TOWN OF EDENTON



CHOWAN COUNTY

NORTH CAROLINA

WARNING AND ALERTING - FLOW CHART



NOTES: 1. Warnings relayed by PIN. Where no terminal, passed on by phone/radio from nearest terminal by agreement.

2. County & municipal warning systems disseminate warnings to public by radio/tv bulletins, newspaper extras, hand bills, signs, loud speaker or other aural systems, and door to door. Law enforcement, rescue squad and volunteer organizations used to spread warnings when activiated by the Control Group.

ATTACHMENT 2

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

CIVIL PREPAREDNESS COORDINATOR

INCREASED READINSSS ACTION	- Coordination of plans for all agencies. - Overall coordination of operations. - Submitting reports and operations of EOC. - Conducting tests and exercises.
CONDITION 5 Beginning of Hurricane Season	1. Update Hurricane Evacuation Plan. 2. Check warning systems and ensure notifica-cation rosters are current. 3. Release general information to public. 4. Conduct exercise to test entire plan.
CONDITION 4 72 Hours Alert	1. Review plans and procedures and alert personnel. 2. Coordinate preparation as necessary.
CONDITION 3 48 Hours OR Hurricane Watch	1. Partial activation of EOC. 2. Check that key personnel are available and advised of situation. 3. Release hurricane preparedness information. 4. Check all communications system.
CONDITION 2 24 Hours OR Hurricane Warning	1. Place EOC on 24 hour schedule. 2. Liaison with EOC from all operating agencies. 3. All communications operational. 4. Continuous evaluation of information with Control Group. 5. Implementation of decisions.
CONDITION 1 12 Hours OR LESS EVACUATION	1. Gathering and dissemination of information to all agencies. 2. Coordination of all operations. 3. Implementation of decisions.
CONDITION 0 "LANDFALL"	1. Gathering and dissemination of information. 2. Reports to Area Civil Preparedness Agency. 3. Request for assistance as required.
RE-ENTRY	1. Coordination of damage assessment and reports. 2. Clean up and recovery. 3. Coordination of re-entry.

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

SHERIFF

INCREASED READINESS ACTION	- Direction and control of evacuation and re-entry operations. - Serves as liaison officer for all law enforcement agencies within county. - Ensure communication between Control and Support Groups, shelter and traffic control points.
CONDITION 5 Beginning of Hurricane Season	1. Check evacuation plan and update personnel roster. 2. Check warning and alerting procedures.
CONDITION 4 72 Hours Alert	1. Provide all weather advisories to County EOC. 2. Review plans and procedures.
CONDITION 3 48 Hours OR Hurricane Watch	1. Warning Center notify Control and Support Group members that Hurricane Watch issued.
CONDITION 2 24 Hours OR HURRICANE WARNING	1. Notify Control and Support Groups that Hurricane Warning issued. 2. Mobilize personnel. 3. Finalize plans to direct evacuation if ordered. 4. Assist motorist presently evacuating voluntarily. 5. Representative man EOC.
CONDITION 1 12 Hours OR LESS EVACUATION	1. Dispatch vehicles with loudspeakers to areas in which evacuation ordered. 2. Patrol evacuated area. 3. Coordinate communications between shelters, checkpoints and EOC.
CONDITION 0 "LANDFALL"	1. Secure evacuated areas as conditions permit. 2. Move stragglers and stay-behinds to best available shelters.
RE-ENTRY	1. Prevent looting. 2. Request needed assistance. 3. Control access to evacuated areas. 4. Maintain liaison with other law enforcement agencies.

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

DIRECTOR OF SOCIAL SERVICES

INCREASED READINESS ACTION	- Overall shelter operations. - Provide personnel to assist in operation of shelters and registration of evacuees.
CONDITION 5 Beginning of Hurricane Season	1. Update plans and personnel rosters. 2. Conduct refresher training.
CONDITION 4 72 Hours Alert	1. Review plans and procedures and alert personnel. 2. Coordinate preparations as necessary.
CONDITION 3 48 Hours OR Hurricane Watch	1. Coordinate with Red Cross to ensure that shelter requirements will be satisfied.
CONDITION 2 24 Hours OR HURRICANE WARNING	1. Assign personnel to shelters. 2. Coordinate with and assist Red Cross representative.
CONDITION 1 12 Hours OR LESS EVACUATION	1. Provide personnel to assist with shelter registration. 2. Coordinate support of shelter operations. 3. Implementation of decisions.
CONDITION 0 "LANDFALL"	1. Continue support of shelter operations.
RE-ENTRY	1. Continue to assist Red Cross. 2. Provide necessary support to disaster victims.

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

SUPERINTENDENT OF SCHOOLS

INCREASED READINESS ACTION	- Provide facilities to be used as shelters. - Provide personnel to assist in operation of shelters. - Provide school bus transportation when requested.
CONDITION 5 Beginning Of Hurricane Season	1. Ensure that Red Cross Agreements and plans to operate shelters are current. 2. Update personnel list.
CONDITION 4 72 Hours Alert	1. Review plans and procedures and alert personnel. 2. Coordinate preparations as necessary.
CONDITION 3 48 Hours OR Hurricane Watch	1. Make contact with Red Cross on using schools as shelters.
CONDITION 2 24 Hour OR Hurricane Watch	1. Close schools, send pupils home if school in session. 2. Mobilize personnel and assign them to designated shelters with Red Cross. 3. Conduct joint inspection of designated shelters with Red Cross. 4. Representative man EOC.
CONDITION 1 12 Hours OR LESS EVACUATION	1. As Red Cross volunteers, assist in operation of shelters.
CONDITION 0 "LANDFALL"	1. Continue shelter operation
RE-ENTRY	1. Operate shelters as required. 2. Phase out shelter operations.

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

COUNTY HEALTH DIRECTOR

INCREASED READINESS ACTION	- Ensure that health and medical needs are provided during evacuation, shelter and re-entry.
CONDITION 5 Beginning of Hurricane Season	1. Inventory shelter emergency supplies. 2. Update personnel list.
CONDITION 4 72 Hours Alert	1. Review plans and procedures and alert personnel. 2. Coordinate preparations as necessary.
CONDITION 3 48 Hours OR Hurricane Watch	1. Maintain liaison with EOC.
CONDITION 2 24 Hours OR Hurricane Watch	1. Mobilize personnel. 2. Representative man EOC. 3. Ensure adequate health personnel in shelters. 4. Ensure shelters are maintained in a sanitary condition. 5. Report pertinent health information to officials.
CONDITION 1 12 Hours OR LESS EVACUATION	1. Provide health and medical requirements in shelters.
CONDITION 0 "LANDFALL"	1. Continue shelter operation.
RE-ENTRY	1. Determine any health problems affecting re-entry into damaged areas.

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

COUNTY FINANCE DIRECTOR

INCREASED READINESS ACTION	- Maintain financial data. - Adapt accounting system to provide emergency expenditure information upon request.
CONDITION 5 Beginning of Hurricane Season	1. Review emergency accounting procedures.
CONDITION 4 72 Hours Alert	1. Review plans and procedures.
CONDITION 3 48 Hours OR Hurricane Watch	1. Contact and remind all Agency Heads to maintain separate hurricane expenditure records.
CONDITION 2 24 Hours OR HURRICANE WARNING	1. Record all expenditures relating to hurricane in separate account.
CONDITION 1 12 Hours OR LESS EVACUATION	
CONDITION 0 "LANDFALL"	
RE-ENTRY	1. Provide financial data on emergency expenditures to Control Group.

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

COUNTY TAX ASSESSOR

INCREASED READINESS ACTION	- Conduct damage assessments.
CONDITION 5 Beginning of Hurricane Season	1. Review and update damage assessment procedures. 2. Check/update roster of damage assessment personnel.
CONDITION 4 72 Hours Alert	1. Maintain liaison with County EOC.
CONDITION 3 48 Hours OR Hurricane Watch	1. Maintain liaison with County EOC.
CONDITION 2 24 Hours OR HURRICANE WARNING	1. Representative man EOC.
CONDITION 1 12 Hours OR LESS EVACUATION	
CONDITION 0 "LANDFALL"	
RE-ENTRY	1. Assemble personnel. 2. Conduct damage assessment. 3. Furnish damage assessment data to EOC. 4. Revise property records.

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

COUNTY FIRE MARSHALL

INCREASED READINESS ACTION	- Coordinate fire fighting support throughout the county. - Assist Law Enforcement and Rescue upon request.
CONDITION 5 Beginning of Hurricane Season	1. Review and update emergency operational procedures.
CONDITION 4 72 Hours Alert	1. Review plans and procedures and alert personnel. 2. Coordinate preparations as necessary.
CONDITION 3 48 Hours OR Hurricane Watch	1. Gas up all vehicles. 2. Check all equipment.
CONDITION 2 24 Hours OR Hurricane Warning	1. Representative to EOC. 2. Mobilize personnel. 3. Render assistance as requested. 4. Coordinate fire fighting activities.
CONDITION 1 12 Hours OR LESS EVACUATION	1. Provide assistance to other agencies as required. 2. Dispatch personnel to assigned shelters.
CONDITION 0 "LANDFALL"	
RE-ENTRY	1. Render assistance as requested.

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

CHIEF OF COUNTY RESCUE SQUAD
(Other Rescue Officials)

INCREASED READINESS ACTION	- Coordinate county rescue/ambulance operations. - Provide ambulance service to transport non-ambulatory persons.
CONDITION 5 Beginning of Hurricane Season	1. Review and update emergency operational procedures
CONDITION 4 72 Hours Alert	1. Review plans and procedures and alert personnel. 2. Coordinate preparations as necessary.
CONDITION 3 48 Hours OR Hurricane Watch	1. Gas up all vehicles. 2. Check all equipment.
CONDITION 2 24 Hours OR HURRICANE WARNING	1. Representative to EOC. 2. Mobilize personnel. 3. Move non-ambulatory persons and provide other assistance as requested.
CONDITION 1 12 Hours OR LESS EVACUATION	1. Provide assistance to other agencies as required. 2. Dispatch personnel to assigned shelters.
CONDITION 0 "LANDFALL"	
RE-ENTRY	1. Conduct rescue operations. 2. Inform Control Group of personnel and equipment needs.

INCREASED READINESS ACTION CHECK LIST

Agency Responsibilities

AMERICAN NATIONAL RED CROSS

CHOWAN COUNTY CHAPTER

INCREASED READINESS ACTION	- Operate designated Red Cross shelters. - Provide other Red Cross assistance.
CONDITION 5 Beginning of Hurricane Season	1. Ensure shelter agreements and plans to operate shelters are current. 2. Conduct training for shelter management personnel.
CONDITION 4 72 Hours Alert	1. Review plans and procedures. Alert personnel. 2. Coordinate preparations as necessary.
CONDITION 3 48 Hours OR Hurricane Watch	1. Mobilize personnel. 2. Designate and assign personnel to specific shelters.
CONDITION 2 24 Hours OR HURRICANE WARNING	1. Brief shelter managers. 2. Conduct joint inventory of shelters with school and other personnel. 3. Representative man EOC. 4. Upon EOC direction, open and operate shelters. 5. Keep EOC informed of shelter situation.
CONDITION 1 12 Hours OR LESS EVACUATION	1. Maintain liaison with EOC. 2. Keep EOC informed of shelter situation.
CONDITION 0 "LANDFALL"	1. Keep EOC informed of shelter situation.
RE-ENTRY	1. Operate shelters as long as necessary. 2. Render assistance to needy persons.

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