HAVELOCK

LAND USE PLAN UPDATE 1986
CITY OF HAVELOCK, NORTH CAROLINA

MAR 1987

Adopted by the
Havelock Board of Commissioners
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CITY OF HAVELOCK, NORTH CAROLINA

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EXECUTIVE SUMMARY - HAVELOCK LAND USE PLAN UPDATE 1986

Introduction

This planning document is a comprehensive update of Havelock's 1981 and 1976 Land Use Plans that were also prepared in accordance with the North Carolina Coastal Area Management Act of 1974 and the Act's planning guidelines. The guidelines have been revised somewhat since 1981, requiring local governments to address more thoroughly local policies effecting water quality and hurricane damage prevention. In addition, the plan presents an analysis of changes in the man made and natural environment occuring during the last five years, addressing significant changes in plans, policies, and regulations effecting the community now. Projections of desired and expected changes in the City are made in light of locally adopted growth management policies.

Highlights of Major Changes

There were few major policy changes needed in this plan update. However, a great deal of change has occured in Havelock during the last five years. This is reflected in the following list of the more significant changes that were examined in preparation of this update; changes that may continue influencing Havelock for many more years.

1. The Federal Emergency Management Agency published detailed flood mapping and the City prepares to adopt a local ordinance so that flood insurance can continue to be offered to Havelock.

2. The City funds Phase I- Water System Improvements to meet current needs and better meet increasingly higher demands for new development service.

3. The City funds Phase I - Sewer Improvements in order to increase treatment capacity to keep pace with development service demands.

4. The Air Installations Compatible Use Zone Study for MCAS Cherry Point is updated and amended reducing high level noise impacted residential areas. The City accepts noise factors but does not adopt recommended accident potential zone recommendations.

5. The City amends Water/Sewer Rates to place more emphasis on creating fund balances to help raise monies for needed systems improvements.

6. The City amends Water/Sewer Tap Fees upward, better reflecting true costs created by new development for systems operation, maintenance, reserve capacity, and future improvement needs.

7. The City extended its extraterritorial jurisdiction, increasing the area under City zoning, subdivision, and related land use controls.

8. Priority for the Havelock By-Pass slips by five years. The 1986 Department of Transportation TIP schedules right-of-way acquisition for 1995.

9. Croatan National Forest 2005 - Management Plan is published, clearly indicating the forest management; recreational policies in effect for Havelock's major neighboring land use.

10. There is a sharp increase in Townhouse/Condominimum development, moving from 11 to 19% of all housing stock. If these trends continue, residential development may not have to spread out as much as it would if single-family housing were to continue dominating the market.

11. The good health and increased mission of MCAS Cherry Point is reflected in increased local development. The previous plan was prepare under a period of stable but reduced military activity at Cherry Point.

12. Havelock's Community Appearance Commission becomes active and people seem to be more aware of how good community asthetics positively effect quality of life.

13. Craven County Tourism Development Authority is created and the potential for increased tourism business related to MCAS Cherry Point and the Croatan National Forest is recognized.

14. Recreation improvements increase sharply as a result of City's Subdivision Ordinance Provisions for land dedication or fee in lieu of dedication.

15. The City commissioned the Preliminary Engineering Report on the McCotter Drainage Basin, which is published in October 1984. It recommends a major drainage plan for East Havelock to help solve serious local flooding problems.

16. Increased public awareness of drainage problems caused by new development could translate to support for funding major drainage programs and adoption of developer impact fees.

17. Sedimentation/Erosion Control Ordinance enforcement authority is taken back by the North Carolina Department of Natural Resources and Community Development over enforcement questions raised concerning the Woodhaven Street extension across Joe's Branch.

Population, Economy, and Land Use Changes

The last detailed land use and development analysis for Havelock was presented in the 1976 CAMA Plan. Because of the substantial community growth experienced during the last five years, this plan update includes a completely updated examination of land use changes and accompanying large scale mapping.

Population. Havelock's population was estimated at 21,600[1/] in 1985, up 3,882 over the 1980 Census figure of 17,718. The non-MCAS Cherry Point portion of this increase was 3,673 which translates into an average annual increase of 735 people. The total off-station Havelock population increased from 4,627 to 8,300 in five years. By the year 1995, if the City can continue providing needed water, sewer, and other basic public services to keep pace with demand, population is expected to reach 13,800. Therefore, the plan update afforded an opportunity for a reexamination of growth management policies and utilities services capacities to sustain a projected ten year addition of 5,500 more people and projected conversion of 1,167 acres of undeveloped land into various land use categories.

Economy. Havelock's economic well-being continues to depend on the continued stability of employment, both military and civilian, at the Cherry Point Air Station and the Naval Air Re-work Facility (NARF). Military payroll for 1985, at Cherry Point was over 300 million dollars. Civilian payroll added another 147 million to the area's economy. Of 5,779 civilians working on-station, 957 reside in Havelock. Although it is difficult to project, the near future outlook for Cherry Point seems very stable with probably some increase in its mission given the emphasis placed on a strong national military posture.

Nearly all of the rest of Havelock's principally service and construction industry with over 500 local business enterprises is in good condition and growing.

Land Use. In Havelock and its planning area, between 1976 and 1986, nearly 1,000 acres (one and two-thirds square miles) of land area has been converted from forest and field into streets, houses, new businesses, active recreation lands, and other land uses associated with a growing suburban community.

The January 1986, land use survey revealed 3,652 housing units in Havelock and its planning area, finding 1,626 more than were in place in 1974. The survey also found that 19 percent of Havelock's housing was in townhomes, apartments, and condominiums, up from 13 percent in 1974, but that single-family detached houses on individual lots are still preferred by most buyers with 65 percent of all housing being of this style. Finally, the survey found 591 mobile homes, 46 more than 1974, but comprising only 16 percent of all units, down from 27 percent in 1974.

Development of retail and other service industry businesses has also been brisk. The four and a half mile long "downtown" commercial strip along U.S. Highway 70 is filling in rapidly. During the past twelve years the number of establishments has more than doubled to over 500. The last six years has seen the building of East Plaza, Westbrook Shopping Center, Cherry Plaza and others along with two motels and a third now under construction. By the year 1995, another 121 acres of land will be needed for commercial land use activities. Because vacant frontage along U.S. 70 is dwindling redevelopment of marginal older businesses sites with more efficient site

1/ N. C. Office of Management and Budget population estimate including annexations through July 1, 1984.

useage is expected to occur. In addition, some neighborhood service business is expected to occur in the NC 101 and McCotter Boulevard vicinity.

Constraints To Development

Havelock still has significant natural and man-made contraints to its continued expansion. Although for the ten-year planning period adequate room is available within the planning area to accomodate the anticipated need for 1,167 acres of new development space, the City is faced with longer term growth restrictions that must be planned for.

The major constraints are virtually unchanged from those described in earlier plans; they are: 1) high ground water table and poorly drained soils, 2) limiting bounds of Croatan Natural Forest, 3) MCAS Cherry Point lands, 4) the high noise and accident potential zones depicted in the Air Installations compatible Use Zone (AICUZ) program, and 5) sensitive natural lands generally within the 100-year flood plains of area creeks.

This plan update has provided a more accurate mapping of two of these constraints, inorder to provide better information for local land use planning, there are: (1) the 100 year-flood plains and floodways of Slocum and Hancock Creek are now shown reflecting 1985, Flood Insurance Rate Maps and Floodway Boundary Maps published by the Federal Emergency Management Agency and U.S. Army Corps of Engineers; (2) secondly, the 1981 Updated Air Installations Compatible Use Zone study's delimited high hazard noise and accident potential zones have been added to the map. Both of these mappings were also used in preparation of the Land Classification Map update, thereby more clearly showing which sensitive areas will be better protected from new development.

Public Participation in Policy Development

Included in the plan update was an extensive community attitude survey of residents concerns and awareness of community services, environmental issues, and development issues. This survey occurred ten years following Havelock's first CAMA Plan preparation when a nearly identical survey of the communities residents was undertaken. Comparisons of the highly publicized second survey with the first one was a major plus in focusing the attention of the City Planning Board and City Commissioners on evaluating past performance in addressing local land use issues. These issues were closely examined in developing the ten year plan. This update was especially important to these boards because only one Planning Board member and the Mayor from the current administration had been involved with developing the first plan and there was little local satisfaction nor use of the update that was prepared and adopted in 1981.

The plan update was prepared by the planner working closely with the Planning Board and City staff and with input from the Craven County Planning Director, MCAS Cherry Point officials, Craven County Emergency Preparedness Coordinator, National Forest Service, the Chamber of Commerce and numerous other local, state, and federal agencies.

Policies and Growth Management Decisions for the Next Ten Years

Regarding the number one local issue of public concern --- poor drainage --- there was a great deal of debate. Local officials are expected to consider during the next five years a combination of assessment tax districts and developer impact fees for making system-wide drainage improvements in the McCotter Canal and East Prong of Slocum Creek drainage basins. Monies from these sources could then be used to help finance improved drainage of large sections of East Havelock that experience very serious localized flooding during heavy rain storms. The preliminary drainage plan recommending these improvements was published in October 1984, how implementing that plan would effect pollution of Slocum and Hancock Creeks was not evaluated in this plan update. However, related to the draining issue in East Havelock, this plan proposes with the exception of limited potential commercial development along U.S. 70 between Havelock and the proposed U.S. 70 bypass, to stop development at the McCotter Canal and the Croatan National Forest boundary. If substantial development does occur east of McCotter Canal, a twenty-fold increase in storm-water runoff rates would be expected over current levels.

Land Use Controls. The Havelock Board of Commissioners and Planning Board will continue to use the City's existing zoning and sub-division regulations to manage development within the City's jurisdiction. No major changes in basic zoning regulations or patterns are projected, nor considered necessary during the ten year planning period. Two zoning topics were addressed during the preparation of this plan that will effect local development policy and environmental issues. Firstly, the City adopted a reduction by one-third its requirements for paved off-street parking space in non-residential development. This will provide a long term reduction in required undeveloped land conversion and reduce storm-water runoff. Secondly, local officials are exprected to adopt and enforce flood plain zoning regulations later this year.

Hurricane Storm Hazards. The policies addressing the hurricane storm hazard mitigation and post disaster recovery issue were addressed in the 1981 Plan. However, this update endorses policies addressed in the Craven County Hurricane Evacuation Mitigation and Post-Disaster Reconstruction Plan prepared by George Eichler & Associates, Inc. June 1984, as it pertains to Township 6 and Havelock. Further more,, as mentioned, the City intends to adopt a Flood Plain Zoning Ordinance in late 1986. Thereafter enforcing construction/permit regulations under the FEMA Regular Insurance Program. Because of Havelock's limited water front exposure, these regulations will be a major part of the City's post disaster re-building policy. Flood proofing or elevation of non-residential construction and elevation of residential construction above the 100-year flood levels, plus restrictions on filling or development in floodways will provide a significantly higher level of protection of properties subject to flooding or destruction during a hurricane disaster. The other important aspect of this policy is to continue working with the Craven County Emergency Management Office and Cherry Point in coordinating disaster preparedness, emergency operations, and post disaster recovery.

Major Land Classification Changes

At least four events necessitated changes in the City's Land Classification Map adopted in 1981. These were: (1) substantial residential growth,, occuring with annexation of nearly a square mile of developing lands, (2) extension of the City's extraterritorial limits to include lands previously covered under the Craven County CAMA Plan (1982 update), (3) publication of accurate flood plain information which has influenced accurate Conservation Class mapping of wetlands and waterways, and (4) publication of the 2005 Croatan National Forest Management Plan.

Developed class. There is an increase of 631 acres in the developed classification resulting from expansion of city water and sewer services associated largely with developer petitioned annexations.

Transition class. Approximately 2,000 acres of land was added to the City's planning jurisdiction in 1982,by the extension of the City's extra-territorial jurisdiction. Also, five (5) sub-categories of the transition classification have been defined and mapped to better reflect projected development types and densities and planned utility service extensions with future annexations. These sub-classes include: (1) R-L Residential low density with average lot sizes above 15,000 square feet; (2) R-M Residential with lot sizes averaging 10,000-15,000 square feet, (3) R-M-H Residential with average lot sizes from 5,000-10,000 square feet, (4) C-C Commercial Cluster, and (5) L-I, Light Industrial.

Rural class. With the expansion of developed and transition lands there is a much reduced projection for needed rural classification.

Community class. There were no community classifications shown in either the earlier plan or this update.

Conservation class. One major change in the conservation classification category resulted from more accurate mapping of the 100-year flood plain. Secondly, approximately 1,300 acres of Croatan National Forest was added to the conservation classification and removed from the rural classification.

Summary

In conclusion, this plan update reflects local desires for continuing Havelock's progress in growth with concern for protecting the natural and man-made environment. The policies, plans and regulations currently in place and those under consideration as implementation strategies provide adequate protection of Areas of Environmental Concern. Finally, examples of policies and implementation strategies that will further the goal of contributing to the environmental integrity of coastal lands included in this plan that were not previously adopted are: 1)change of approximately 1,000 acres of Croatan National Forest located within Havelock's extraterritorial area into the conservation from the rural land classification category, 2) proposed adoption of a Flood Plain Zoning Ordinance in conformance with the Federal Emergency Management Agency's regular insurance program, 3)adoption of an amendment to the City's zoning

ordinance requiring one-third less paved parking for commercial land use development, which will reduce stormwater runoff intensity, 4)improved access to the estuarine waters of Slocum Creek and a preliminary greenway/ trail plan strategy, and finally 5)encouraging new development in Western Havelock where fewer problems occur from high ground water tables and poor surface drainage.

CHAPTER I

INTRODUCTION

PURPOSE OF STUDY

The City of Havelock prepared a Land Use Plan in 1976 and updated it in 1981 in response to the Coastal Area Management Act, passed by the North Carolina Legislature in 1974. The purpose and intent of the act is best described in Section .0101"Introduction to Land Use Planning" Subchapter 7B - Land Use Planning Guidelines (as amended 06/17/85):

.0101 Introduction

(a) The Coastal Area Management Act of 1974 establishes a cooperative program of coastal area management between local governments and the state. Land use planning lies at the center of local government's involvement, as it gives the local leaders an opportunity and responsibility to establish and enforce policies to guide the development of their community.

(b) The purpose of these state guidelines is to assist local governments in each of the 20 coastal counties with the preparation of their own individual land use plans. Each county and the municipalities within the coastal counties are encouraged to develop a plan which reflects the desires, needs and best judgement of its citizens. The land use plans prepared under these guidelines, when considered together, form the basis for "a comprehensive plan for the protection, preservation, orderly development and management of the coastal area of North Carolina," which is the primary objective of the Coastal Area Management ACt of 1974.

Further in the guidelines in Section .0201 (c), the heart of why North Carolina communities and counties need to prepare land use plans is described.

.0201 Introduction

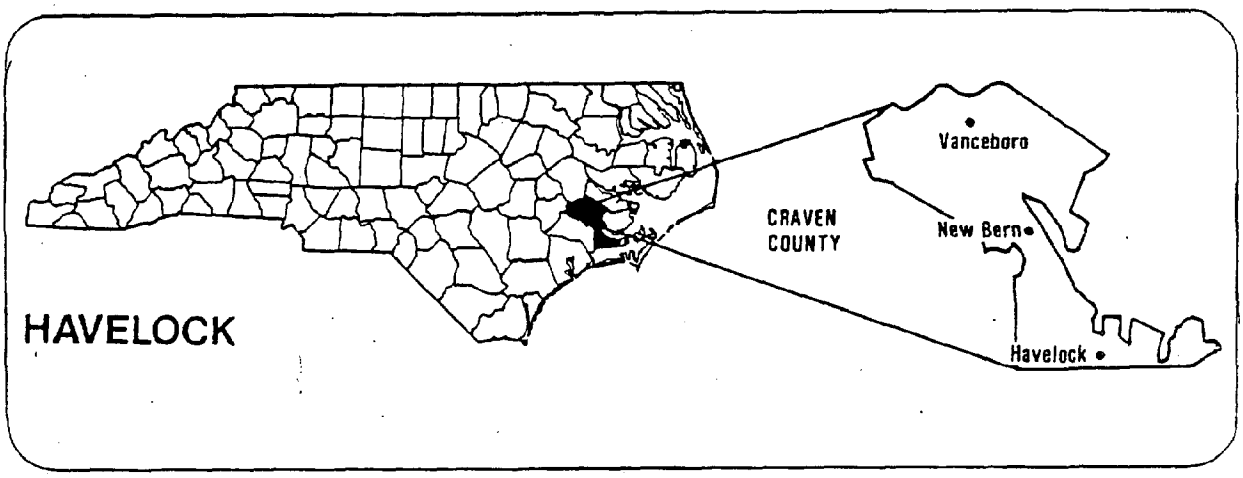
(c) Local governments, through the land use planning process, address issues and adopt policies that guide the development of their community. Many decisions affecting development are made by other levels of government, and local policies must take account of and coincide with established state and federal policies. Most decisions, however, are primarily of local concern. By carefully and explicitly addressing these issues, other levels of government will follow local policies that deal with these issues. Policies which consider the type of development to be encouraged, the density and patterns of development, and the methods of providing beach access are examples of these local policy decisions.

More significant even that the "requirement" that communities prepare Land Use Plan every five years is the uses that are made of the local plans once they have been completed. In the publication, The Impact of State Regulation of Coastal Land in North Carolina, prepared by Charles D. Liner of the Institute of Government at Chapel Hill, he noted the impact of local land use plans on state and federal decisions:

> ...Land-use plans have a potential effect on (local) land use because:
> (a) CAMA Permits may not be issued for development that is inconsistent with land-use plans (since CAMA permits are required only in AECs, this effect is limited to land within AECs).
> (b) Local ordinances and regulations that apply to AECs must be consistent with the land-use plan; local ordinances and regulations affecting land outside AECs are subject to review by the Coastal Resources Commission, which is authorized to recommend modifications to the local government.
> (c) Federal actions involving grants, licenses, permits, and development projects must be consistent with local land-use plans, as required by Section 307 of the FCZMA.
> (d) In accordance with the Governor's Executive Order Number 15, certain state agency actions and policies must be consistent with land-use plans.

THE STUDY AREA

The City of Havelock is Coastal (as shown in Map 1) near the southeastern edge of Craven County and within the southeastern Coastal plain of North Carolina.



Map 1 . . . . Location of Havelock to the Region

Previously described in the first two CAMA Plans for Havelock, the City has two "planning areas". Both include the City of Havelock plus lands lying beyond the corporate limits. Map 2 shows these planning areas.

One of them is unchanged since preparation of the earlier CAMA Plans. It is the 10.09 square miles of land included in the City's projected sewerage facilities planning area to the year 1995. Officially referred to as the "201 Wastewater Facilities Planning Area," it is also called the "201 Planning Area". The engineering firm of Moore-Gardner Associates prepared the 201 Plan for Havelock in 1973. That plan and facilities designed within its framework are used by the City and the North Carolina Division of Environmental Management in judging funding decisions for improvements or expansion of the city's wastewater treatment systems.

The second planning area, referred to as the City's extraterritorial area, has changed since the 1981 CAMA Plan update was published. The City extended the extraterritorial area in 1982 westward by a mile up to the Hickman Hills community along both sides of U.S. 70 West. This area includes the developing Westbrook Subdivision and shopping center area and the Connor Manufacturing Company. The extended jurisdiciton also includes about 1,000 more acres of Croatan National Forest to the west and south of Havelock. It was also extended over a mile along N. C. 101 toward Harlowe.

Within these areas the City's zoning, subdivision regulations, and building code enforcement programs were put into effect. Craven County also administers state building codes and subdivision regulations, but does not have zoning regulations.

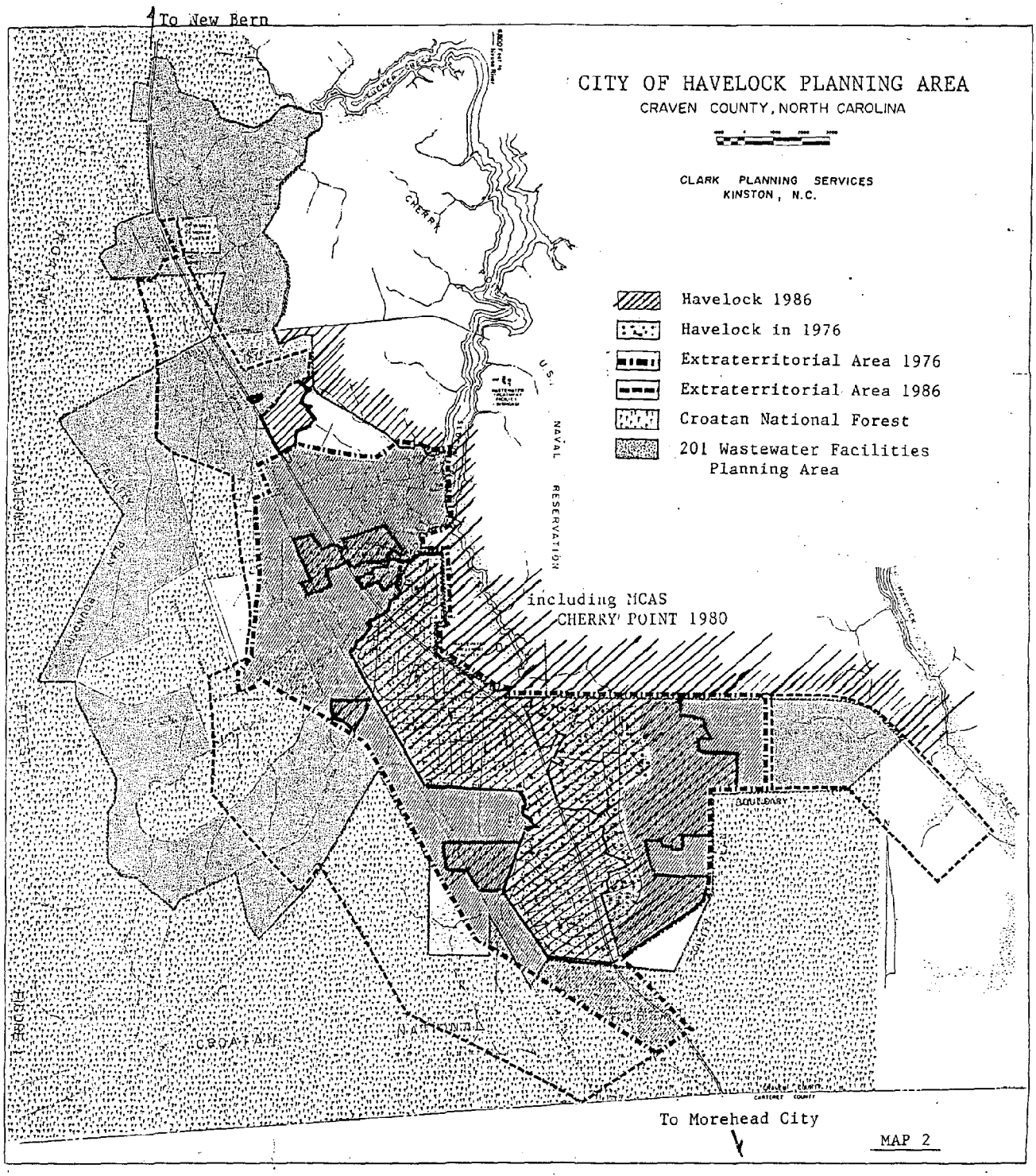
For the purposes of this plan, with the exception of MCAS Cherry Point, the City of Havelock and its extraterritorial jurisdiction is the planning area for which data collection, and analysis and plans and policies have been updated.

CITIZEN PARTICIPATION

Successful planning for any unit of local government must include the involvement of the citizens for which the plan is being prepared. The necessity of citizen participation in the planning process is recognized by the State of North Carolina and is, therefore, one of the requirements of the Land Use Planning Guidelines of the CAMA Act.

There are various forms citizen participation can take. Some are more successful than others.

The City of Havelock was fortunate to have developed an extensive program of public awareness about land use planning and development issues in preparation of the 1976 CAMA Plan. The house to house survey of


To New Bern
CITY OF HAVELOCK PLANNING AREA
CRAVEN COUNTY, NORTH CAROLINA
CLARK PLANNING SERVICES
KINSTON, N.C.
Havelock 1986
Havelock in 1976
Extraterritorial Area 1976
Extraterritorial Area 1986
Croatan National Forest
201 Wastewater Facilities Planning Area
including MCAS CHERRY POINT 1980
U.S. NAVAL RESERVATION
CROATAN NATIONAL FOREST
To Morehead City
MAP 2

nearly 50 percent (50%) of Township 6 off-station residents was very helpful to the Citizens Advisory Committee and Planning Board in gauging local public opinions about how Havelock should develop as a community in the future.

Because ten years had passed since that first opinion survey, Clark Planning Services (CPS) personnel discussed with the Planning Board whether to repeat the survey as part of the plan update. The Planning Board members agreed that some form of opinion survey--asking the same or similar questions, would provide an objective comparison of the issues believed important then and now. A follow-up survey would help the board explain just how well the City's development had matched earlier expectations, providing perhaps more insight in deciding how much emphasis should be placed on the various development issues and policies that would evolve into this futuristic plan.

What form should the survey take? Should it be conducted the same as before? What about including the on-station military residents since the City's population does include them now? Were all of the earlier survey instrument's questions useful or relevant? How could the survey instrument be improved? These and other questions were discussed with the Planning Board at their regular meetings in November and December 1985.

During the Planning Board's discussion of these and other related questions some members expressed concern that it would be difficult for them to conduct a survey as before without substantial help from, say another active Citizen's Advisory Committee that would need to be created for the task. Others felt that a sample survey, scientifically administered by telephone or with in-person interviews might provide a better, if not easier or quicker, means of surveying. The Planning Board members decided they would have CPS repeat the ealier survey following agreed to revisions. Additionally, CPS was to look into several methods of conducting the survey within Havelock and the extraterritorial planning area, developing a schedule for conducting it, and provide information to the public about the survey before it is conducted. Finally, the survey results would be shared with the public through local media. The whole experience would increase the likelihood that Havelock's Land Use Plan would be prepared with a maximum of public participation.

Therefore, in an effort to determine local opinion about planning and development, Clark Planning Services engaged the assistance of Behavior Research Associates, Kinston, North Carolina, a professional opinion surveying company to conduct a random-cluster sample survey of households throughout the City and extraterritorial area. The survey was conducted in February 1986[1/]. The survey team used 136 personnel interviews and 75 telephone interviews. The survey contained questions about the respondents' personal characteristics and questions regarding planning, land use controls, public facilities, and growth. A copy of the survey and summary data collected is included in the appendices of this plan.

1/ Behavior Research Associates, George M. Britton, PhD., Director Kinston, NC, February 2-6, 1986.

Results of the Survey

The following summary analysis of the opinion survey is from a report prepared by Behavior Research Associates.

> "An attempt was made to sample each residential area and to randomly select the households to be included in the survey. A clustered, focused sample was utilized in order to assure that the sample was indeed representative of Havelock and surrounding planning jursidiction areas.
>
> Many ancillary remarks were made and noted. The interviewers were instructed to present their questions/statements and to make note of any ancillary remarks. The remarks were discussed and presented as part of this report as attachments to each page of the survey instrument.
>
> Our survey team was well received by the community. We were welcomed in almost every instance with a friendly willingness to cooperate. Those persons interviewed seemed grateful that the Havelock Planning Board was interested in their input."

How large should Havelock be 10 years from now? Seventy-seven percent (77%) of the respondents favored some increase to a substantial amount of growth for Havelock. Many of those same respondents were some of the seventy-nine percent (79%) who felt there should be more business development (shopping opportunities) in Havelock. The interviewers frequently heard people say a shopping mall would be desirable. At the same time however, a significant 75 percent believed the City "must" control growth to allow services to keep pace. Furthermore, this issue. . . . . "frequently set off an elaboration on what was perceived as "growth pains": development in swamps, overcrowding in the schools, traffic problems at 7 am and 4 pm, drainage, etc.

Planning was perceived by 71 percent of respondents to be a help in dealing with problems of City growth, because. . . . "many perceived Havelock to be growing randomly without plan or purpose."

The natural environment of the area was believed an important asset to the community. Even with a long standing public desire to attract more private industry for economic stability, 85 percent believed an environmental impact statement should be required first. Likewise, 69 percent want to protect the Croatan National Forest from more development. Judging too, from the knowledge most respondents had of the problems development in "swamps" particularly in

City seeks ideas of future usage

For the second time in a decade residents of Havelock are being asked what they like and dislike about the community, what they want it to be in the future and how to best attain those goals.

In 1976 almost 50 per cent of those residences returned their surveys, listing their likes and dislikes, desires and fears. Those results were implemented into a land use planning and development by the Citizens Advisory committee. The forms were distributed by Boy Scout organizations and included a complete sampling of all residential units.

This time, according to Robert Clark, now principal planner of Clark's Planning services, the sampling will be done in the form of an opinion survey, either in person or by telephone, to a cross-section of residents. Clark in the initial survey was employed with a state agency in Washington, N.C. and since has left state employment to form his private firm. He is still working with the Havelock Planning Board.

"Comparng the results from this opinion survey from a similar one done 10 years ago should prove interesting for all those involved," he said. "Rarely do communities make the time or direct the effort to formally ask people what they think about city services and where-how they feel the town should change in years to come."

"The public forums that follow the survey should be very helpful to me and the Planning board in reommending local and state policies or programs to address the issues that are important."

The 1986 survey will be similar to the one conducted in 1975 except it will be done in a sampling of 10 per cent of the in-city and extra-territorial residents. Clark said it would be telephonic and in-person interviews of major age groups (the elderly, middle-aged and younger adults). He said the survey would also obtain responses from military, non-military, retired people, males and females and would be grouped for comparisons.

The survey will be conducted this month and during March with public forums scheduled for March to discuss the survey results and examine the identified issues. Finally Clark and his people will prepare a summary of the issues and alternative policy statements for the Planning board. The Planning board will select the most appropriate means for implementing the policy recommendations.

According to the schedule, during April a second public forum will be held to discuss the existing and possible amendments to the Land Classification plan and Land Development plan before the proposed plan is submitted to the board of commissioners. Then in May a final public hearing will be held jointly by the Planning board and the city board before adopting the CAMA plan update.

Clark's data on the 1975 survey shows 842 citizens, or citizens' homes, responded to the study. Of these 530 lived within the city limits, 257 lived in the extraterritorial limits, and there were 55 "other".

The bulk of the returns were submitted in the age categories of 18 to 54. Of these 179 were between 18-24, 193 were between 25-34, 208 were between 35-44 and 183 were between 45-54. Owners of homes were 543 while 118 were renters. The military responders were 347 with 183 employed in civil service, 114 were in business service-support and 108 were retired. Of those answering, 232 had lived in the community less than two years, 135 had lived here 2-4 years, 125 here for 4-6 years, 139 6-10 years and 178 more than 10 years.

For services offered by the community 23.6 per cent said they thought the Rescue Squad offered excellent services, 15.4 per cent thought the same for fire protection. Of the 22 categories, these two were the only ones rating double digits in excellence. Garbage and sanitation nudged the public schools for third and fourth place, 8.9 and 8.1 per cent.

For facilities only three categories received double digits in the excellence category, garbage and rescue tying at 14.3 per cent with fire protection ranking third at 11 per cent.

'Very poor" rankings in the services category scored several in the double digits category: storm drainage led the list with 24.5, adult recreation programs, 23.6; sewage, 22.6, commercial airport, 22.4; medical services, 21.5; and teenage recreation, 18.8.

Ranking "very poor" in terms of racilities were almost the same ones.

The 1975 survey found most thought the community's appearance was good, 26.0 or average, 42.3; thought city relations with the county were god, 21.3 or average, 41.1 and relations with Cherry Pont were good, 36.5 or average, 28.5

East Havelock, was causing in localized flooding problems, it seems reasonable to conclude that many do not feel it appropriate to allow more development in these areas to further add to poor drainage problems.

The Planning Board felt the survey was a good lesson in need for continuing public involvement in the planning process; because although the survey revealed a significant percentage perceived the city to be growing hapazardly, members felt the city "was" largely planned, especially since the mid '70's when the 201 Facilities Plan and first CAMA Plan were prepared. Furthermore, most of the development of subdivisions, townhouses, and apartments were in compliance with street design controls contained in the City's zoning and subdivision regulations. The members also believed the City and developers were responsible, that the City has little choice but to deal with development in areas of poor drainage because there is so little room for Havelock to grow otherwise.

In a sense, both views are correct. The City has been progressive in its planning and regulations of development. As a new community with rapid growth a number of clearly modern regulations are in effect in Havelock's planning area, such as: planned development regulations, recreation land dedication or fees in lieu of dedication to provide adequate recreational opportunities as development occurs, and limiting driveway cuts on thoroughfares like McCotter Boulevard as new subdivisons are laid out.

However, because Havelock has grown up so quickly, sandwiched between MCAS Cherry Point and Croatan National Forest, and generally limited to having soils with high ground water levels in most areas, the City has problems that must be accomodated to some degree and not necessarily totally solved (i.e., poor drainage).

Major traffic congestion along U.S. 70 is not an easily solved problem either. One possible solution to alleviating much of this problem would be with the construction of a by-pass as called for in the Havelock Thoroughfare Plan (1977). The survey respondents were asked about whether the N. C. Department of Transportation should develop the by-pass. Interestingly, the respondents were strongly split on this one. Forty-six percent (46%) favored the by-pass and thirty-eight percent (38%) were against it. Those against generally offered two reasons for their opposition. They either feared loss of "beach business" traffic to Havelock's established businesses or they saw a major loss of Croatan National Forest as negative points.

The City's drinking water was rated very low by those surveyed.

> " The interview team was frequently subjected to samples of rust or muddy colored water with a distinct taste. "

Overall the survey found the public was well informed of community issues and felt much the same about the city as those who responded to the 1976 opinion survey. In general, the survey was very well received and recognized as a tool the City officials would use in planning future growth.

In addition to the survey, people in the Havelock area were exposed to the planning process through excellent media coverage from January through December 1986, with articles on land use issues and progress reports on plan preparation. A half dozen articles about the land use plan appeared in the Havelock Progress or the Sun Journal, Havelock Edition.

And furthermore, the Planning Board held a public forum on April 1, 1986, and met in open joint session with the Board of Commissioners on the 25th of August and September 22, 1986.

Finally, the Board of Commissioners held an advertised public hearing on December 8, 1986, prior to adopting the plan.

Throughout the rest of this document, an attempt will be made to describe how the survey results and other factors important to developing the plan update will mold a rationale set of policies for managing Havelock's development during the coming ten years.

CHAPTER II

ANALYSIS OF CHANGE

Basic to the CAMA planning process is the required examination of changes that have occurred since the 1981 CAMA Plan was prepared. This updating has afforded an opportunity to re-examine previously identified land use issues, development policies, and short-range projections with five years of hindsight.

Largely, this chapter summarizes recent changes in population, economy, and land use patterns as indicators of how Havelock's resources (its people, natural and built environment), are changing; giving basic information for projecting future changes and developing local policies that help direct wise land use managment choices.

As will be seen in the following pages, people are coming to Havelock at a quickening pace, the economic base is still strongly linked to MCAS Cherry Point, residential development is occuring with a quick pace in response to a demand for new housing, and the U.S. 70 commercial strip is filling in with service related businesses.

POPULATION

Table 1 shows population growth trends for Havelock, MCAS Cherry Point, Township 6, and Craven County from 1940 to 1985. As reported in previous plans, the area has had continuing population increases since MCAS Cherry Point was developed in the early 1940's. While the 1981 CAMA Plan indicated Havelock's population growth rate had slowed somewhat following a 3 percent average annual rise for the preceding ten years, the last five years very clearly show a return to rapid population growth for Havelock with a 79.4 percent increase in the off-station resident population.

Table 2, Annexation History was prepared to show that the last five years have added approximately 531 acres to the City, but only 266 of the 3,673 increase in Havelock's population was attributed to annexation of existing populations. Therefore, the City experienced a 73.6 percent real increase.

Craven County too, has experienced an 8.3 percent growth in population in the last five years, adding 5,912 people. Significantly though, Havelock's 3,407 new population growth represents 57.6 percent of the County's increase.

Table 1 . . . Population Trends - Havelock, MCAS Cherry Point, Township 6, and Craven County 1940-1985

Year	Havelock		MCAS Cherry Point		*Havelock Cherry Point	Township 6	Craven County
1940	100					623	31,298
1950	1,500		10,000		11,500	11,695	48,823
1960[1/]	2,433					18,053	58,773
1970[1/]	3,012					20,798	62,554
1980[1/]	(4,627	+	13,091)	=	17,718	21,963	71,043
1985[2/]	(8,300	+	13,300	=	21,600	25,843	76,955

Sources: 1/ U.S. Census of Population 1960, '70, and '80

2/ N. C. Office of State Budget & Management; other estimates by Clark Planning Services, Kinston, NC based on analysis of City utility records, windshield survey, data supplied by the Facilities Development Department, MCAS Cherry Point.

* The City of Havelock annexed MCAS Cherry Point and off-station military housing on December 28, 1979, adding 13,091 military personnel and dependents to the City's population.

With MCAS Cherry Point's resident population estimated at 13,300 in 1985, Havelock's total population has risen from 17,718 in 1980, to 21,600 in 1985.

Under such rapid change it's no wonder some people who where surveyed were concerned development of Havelock may be out of control.

What has fueled such rapid population increases for Havelock is the increasing level of activity and personnel loadings both military and civilian at MCAS Cherry Point. Table 3 further illustrates this relationship. The total military and civilian personnel associated with the air station and NARF increased by 5,493 from 23,791 to 29,284 between 1979 and 1985.

Table 4 was included to show how significant the air station's employment is to Havelock and the region. According to the information supplied by the Facilities Development Department, MCAS Cherry Point, in June 1986, there were 957 civilians working on station who listed Havelock as their place of residence. Interestingly too, 1,431 reside in New Bern with another 745 commuting from the close by City of New Port.

Table 2 . . . Annexation History 1975-1985

	Number of Areas	Est. Area in Acres	Population	Housing Units
1975	8	238	237	61
1976	-	-	-	-
1977	-	-	-	-
1978	1	69	0	0
1979	1	5,000	17,500	2,617
1980	10	139	0	0
1981	2	20	0	0
1982	14	279	171	96
1983	6	159	4	66
1984	3	27	11	7
1985	5	46	80	39
Total 1975-85	50	5,976	18,003	2,886

Source: Annual Boundary and Annexation Surveys, 1975-85 filed with the U.S. Bureau of the Census; Havelock City Clerk's Office

IMPACT OF SEASONAL POPULATION

There is no appreciable seasonal population in Havelock or its planning areas and none is anticipated in the ten year planning period. Beach and resort communities of Morehead, Beaufort, Emerald Isle vicinities receive seasonal population impacts. The 304 motel rooms in Havelock principally serve the visitors and temporary transfer personnel to Cherry Point. There are no time-sharing units, nor fishing/hunting camps within the jursidiction.

ECONOMY

Obviously the socio-economic health of Havelock, Craven County and much of the region is dependent on the level of activities, military personnel and civilian employment, at MCAS Cherry Point.

Military payroll for 1985, at Cherry Point was over 300 million dollars. Civilian payroll added another 147 million to the area's economy. Although it is difficult to project, the near future outlook for Cherry Point seems very stable with probably some increase in its mission given the recent emphasis placed on a strong national military posture.

Table 3 . . . MCAS Cherry Point Military & Civilian Population
1979, 1985

	1979[1/]	1985[2/]	Change	%
MCAS Cherry Point, NARF & Hospital				
Military	8,291	11,966	3,675	44.3%
Civilian	4,500	4,980	480	10.6%
Dependents	11,000	12,338	1,338	12.2%
Total	23,791	29,284	5,493	23%

*includes 2d MAW, Cherry Point (9,809) plus NARF (94), and Naval Hospital (269)

1/ Cherry Point Master Plan (1980), estimates by public relations personnel

2/ Fact Sheet, Marine Corps Air Bases Eastern Area, updated June 1985, Management Assistance Office

Table 4 . . . Local & Regional NARF & MCAS Cherry Point Off-Station Civilian Population Commuting Patterns, June 1986

Selected Cities	Civilian Employees	Counties	Civilian Employees
New Bern	1,431	Craven	2,818
HAVELOCK	957	Carteret	1,766
New Port	745	Onslow	419
Morehead City	395	Pamlico	252
Beaufort	337	Jones	102
Jacksonville	180	Lenoir	45
Swansboro	135	Beaufort	37
All other towns	1,317	All others	58
		total	5,497

Source: MCAS, Cherry Point, Facilities Development Department, June 13, 1986

TABLE 5 . . .Existing Housing Types in Havelock and Extraterrritorial Jurisdiction, January 1986

	Single Family	Mobile Homes	Multi-Family (Apts, Townhomes, Condominiums)	Total Units
Havelock (inside City limits) 1/	1,627	345	682	2,654
Within Extraterritorial Jurisdiction	736	246	16	998
Total Planning Area	2,363	591	698	3,652

Clark Planning Services, windshield survey January, 1986

1/ City limits as of January 1, 1986, not including MCAS Cherry Point or off-station housing (i. e., Fort Macon Village, Slocum Village)

Building activity is another indicator of economic health. During the last several years increases in housing and non-residential building construction have placed the city in the top twenty-five in North Carolina cities. Table 6 shows the total value of building construction for Havelock from 1982-1986.

Table 6 . . . Total Value of Residential and Non-Residential Construction Havelock, North Carolina 1982-May 1986

	$ Value Residential	$ Value Non-Residential	$ Value Total
1982	$ 8,702,931	$ 1,215,906	$ 9,918,837
1983	$ 9,040,697	$ 2,094,419	$ 11,135,116
1984	$ 3,288,875	$ 4,385,718	$ 7,674,593
1985			$ 8,183,485
1986 (5 mos.)			$ 5,156,631
Total			$ 42,068,662

Source: Havelock Building Inspections Department

Development of retail and other service industry businesses has also been brisk. The four and a half mile long "downtown" commercial strip along U.S. Highway 70 is filling in rapidly. During the past twelve years the number of establishments has more than doubled to over 500. The last six years has seen the building of East Plaza, Westbrook Shopping Center, Cherry Plaza and others along with two motels and a third now under construction.

EXISTING LAND USE

The last detailed land use and development analysis for Havelock was presented in the 1976 CAMA Plan. Because of the substantial community growth experienced during the last five years, this plan update includes a completely updated examination of land use changes and accompanying large scale mapping.

Westbrook Subdivision. . .This house site is filled to create positive drainage from the lot. The City's Subdivision Regulations discourage total tree clearance in new housing developments.

Single family detached site-built homes represent 65 percent of Havelock's housing.

The following pages contain an analysis of existing land use in Havelock and its extraterritorial jurisdiction. The analysis was made from the results of a "windshield survey" conducted by Clark Planning Services at various times in December 1985, and January 1986. The survey was intended to inventory existing development and identify: 1) significant land use compatibility problems; 2) major problems which have resulted from unplanned development which may have implications for future land usage; and 3) areas experiencing or likely to experience changes in predominant land use.

Prior to conducting the survey, it was determined that land uses would be identified under eight categories. . .residential, commercial, industrial, government/institutional, recreation, undeveloped, forest, and barren or cleared lands. In order to assess housing types, residential uses were classified into single-family, detached, mobile homes, and multi-family (included townhouses, apartments, and condominiums). These various land use patterns are depicted on Map A-1, Existing Land Use Map, which is provided as a foldout in the back pocket to this document.

Table 7. . . Existing Land Use in Havelock and its Planning Area - January 1986

	1986		
Land Use	Acerage	% Developed	% of Total
Residential	1270.8	48.2	16.4
Commercial (inc. office space)	278.0	10.5	3.7
Industrial	25.0	0.9	0.3
Transportation, Communiciations & Utilities	684.8	25.9	8.8
Government & Institutional	154.6	5.9	2.0
Cultural, Entertainment, & Recreation	223.0	8.5	2.9
Total Development	2636.2	100%	34.0
Croatan National Forest	1452.0	-	18.7
Restricted Wetlands & Water	600.0	-	7.7
Other Undeveloped Lands	3071.8	-	39.6
Total Undeveloped Lands	5123.8	-	66.0
Total Planning Area	7760.0	-	100.0

Source: Clark Planning Services, Land Use Survey, January 1986

Table 7, identifies land use by acreage in the planning area. Approximately 34 percent of the 7,760 total acrea within the planning area was developed. The remaining 66 percent, or 5,133.8 acres of undeveloped lands are categorized as (1) Croatan National Forest with 1,452 acres, (2) restricted wetlands and water areas at 600 acres, (3) and 3,071.8 acres of undeveloped vacant, barren, or wooded lands.

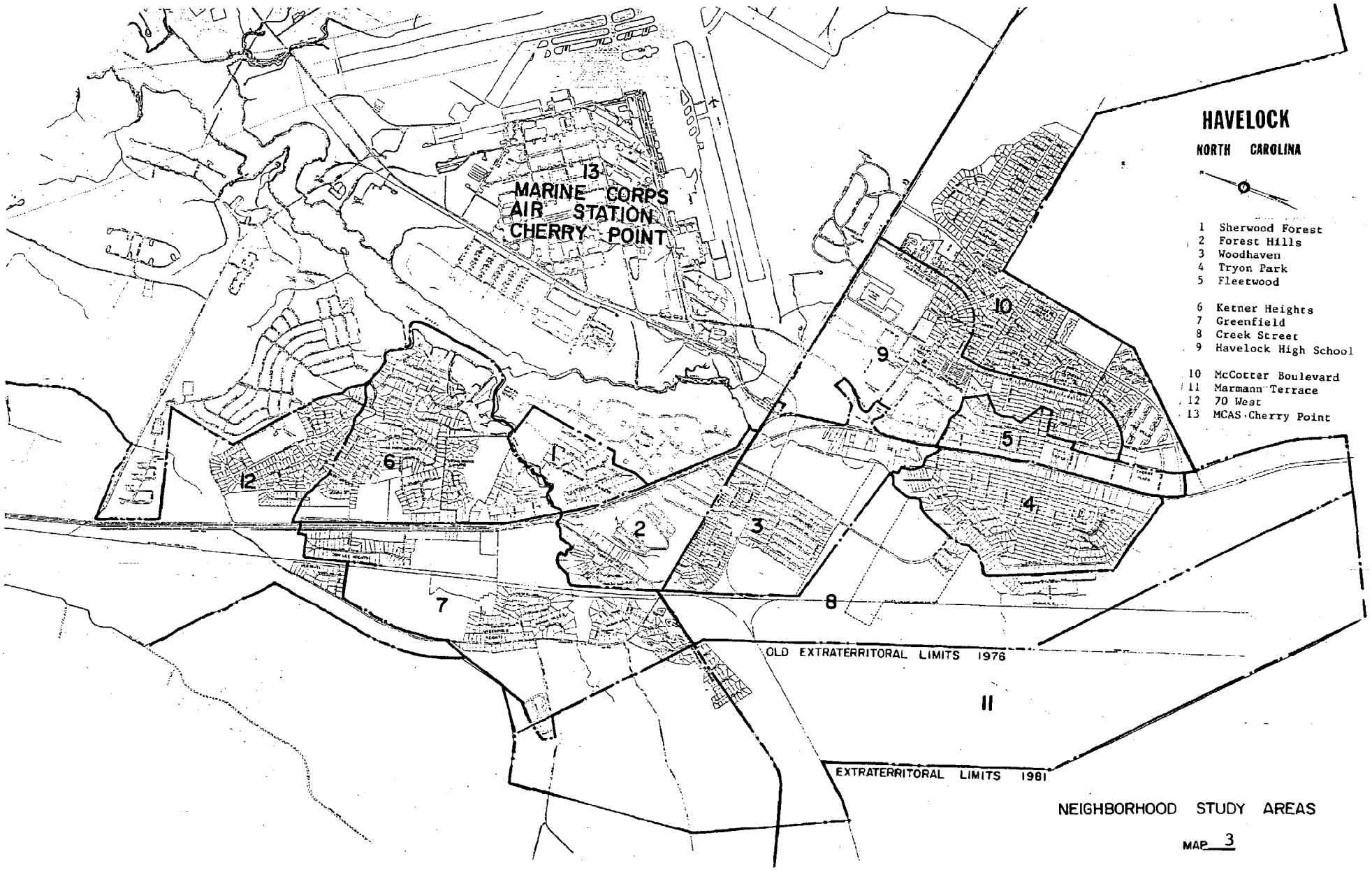
Residential. To facilitate analysis of where various housing types are occuring over time, the City and its planning area were subdivided into thirteen neighborhood study areas. These areas were considered to have similar land use characteristics. They are shown on Map 3 and are referred to by number and common name in the various tables that follow. Neighborhood study areas 1-9 are the same as those that data was collected for in two earlier land use surveys (1962 and 1974). Areas 10, 11, and 12 were added to encompass additions to Havelock's off-station planning area since 1974. Area 13 represents the MCAS Cherry Point. All family and bachelor military housing data, both on and off-station, were documented separately and are included in the City, planning area, or neighborhood area totals. Table 8 provides a three decade comparison by neighborhood study area of the housing development trends.

Single family and multi-family housing increased sharply by 358 units in the Havelock High School Area (Area 9). The greatest increase, however, occurred in the McCotter Blvd. area (Area 10), where no housing existed twelve years earlier a total of 546 units were surveyed. Most of those housing units were built just in the last five years.

In Area 12, the 70 West Area, a total of 196 housing units were added between 1974, and 1986, with most of that increase occurring in the Westbrook Subdivision.

The land use survey revealed little change in the numbers of mobile homes within the planning area. They increase by 9 percent from a total of 545 to 591 units. This was perhaps one of the more surprising findings of the survey because in the earlier land use plans it was assumed that the highly transient nature of military personnel and their families living off-station would have meant more mobile homes for Havelock as personnel loadings at the station increased. One major 313 lot preliminary development plan was approved East of McCotter Boulevard in 1983, but the mobile home subdivision has not developed. Perhaps some of the demand for mobile homes has gone to other area communities or has been absorbed by the trend for more multi-family (particularily townhouses) units.

The chart in Figure 1, was prepared to show the percentages of each housing type found in the Havelock planning area in 1962, 1974, and 1986. The data indicates that although there was an increase in the number of mobile homes in the last twelve years, as a percentage of all housing types mobile homes dropped by 9 points from 27 to 16 percent. Whereas, townhouses and other multi-family housing rose steadily from 13 to 16 percent



NEIGHBORHOOD STUDY AREAS

MAP 3

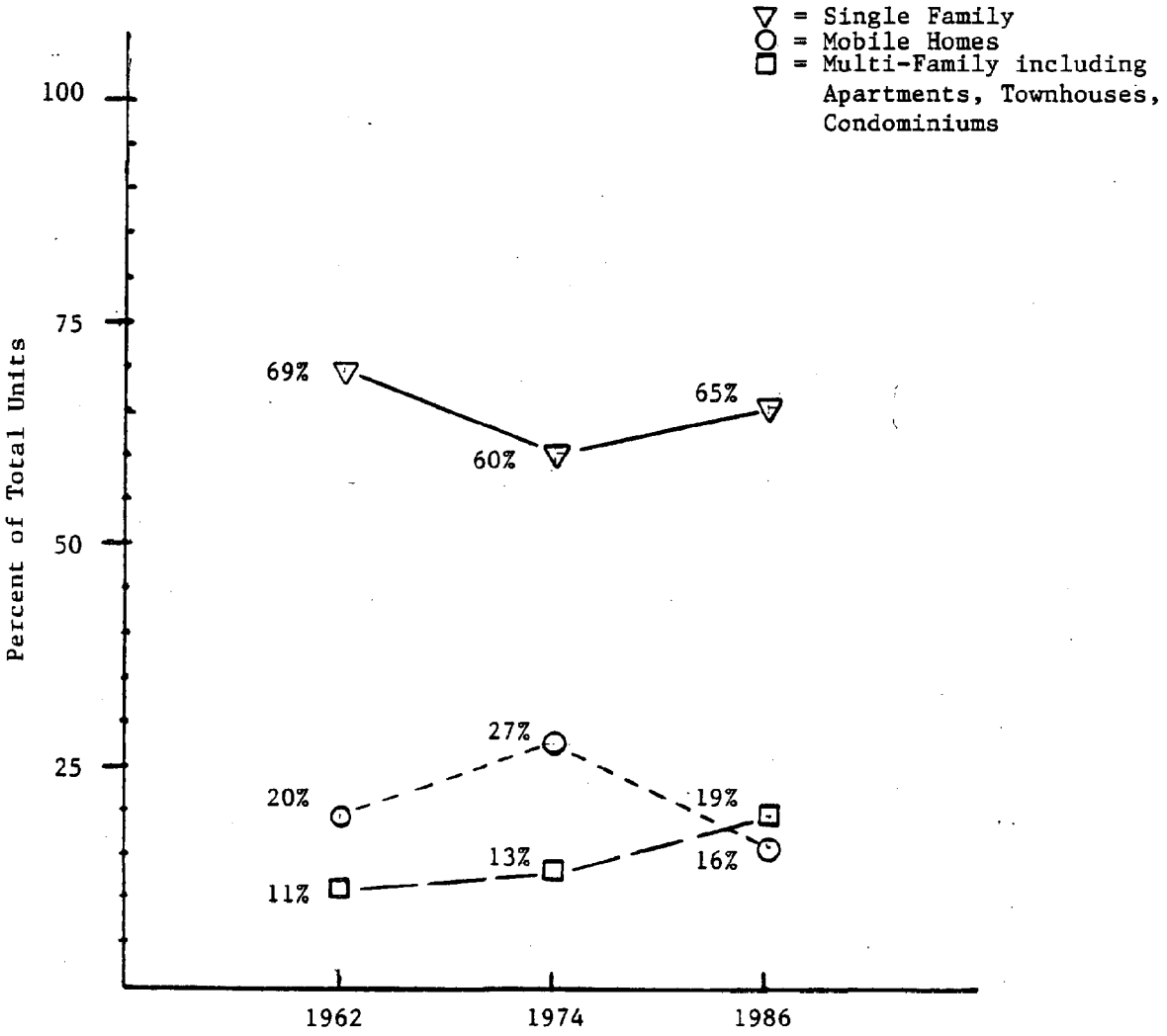
TABLE 8 . . .Housing Trends *by Neighborhood Study Areas 1962, '74, '86
Havelock, NC (Less MCAS Cherry Point and off-station military housing)

Neighborhood Study Area	Single-Family Houses			Mobile Homes			Multi-Family Units Apts, Townhomes, Duplexes		
	1962	1974	1986	1962	1974	1986	1962	1974	1986
1. Sherwood Forest	28	69	73	0	0	0	0	0	0
2. Forest Hills/Jackson Trailer Park	29	54	72	111	208	220	1	4	2
3. Woodhaven	180	258	358	5	40	36	2	30	25
4. Tryon Park	149	326	358	7	2	2	5	89	116
5. Fleetwood	63	65	95	25	42	23	5	24	30
Total in 1974 City Limits	449	772	956	148	292	281	13	147	168
6. Ketner Heights	56	250	337	13	92	98	4	6	8
7. Greenfield	59	116	215	8	119	110	0	0	26
8. Creek Street	27	34	58	0	1	3	4	0	0
9. Havelock High School	0	23	255	0	9	10	74	105	230
Total in 1974 Extraterritorial Area	142	423	865	21	221	221	82	111	264
10. McCotter Boulevard	0	0	286	0	0	0	0	0	260
11. Marmann Terrace			60			71			0
12. 70 West			196			18			6
Total in old one-mile area[1/]	14	28	542	5	32	89	0	0	266
Total	605	1,223	2,363	174	545	591	95	258	698

Sources: *The 1962 housing data from: Land Analysis and Sketch Plan, Havelock NC (Division of Community Planning);
The 1974 data program: Havelock Land Use Plan, 1976, Department of Natural & Economic Resources;
The 1986 data by windshield survey, Clark Planning Services, Kinston, NC

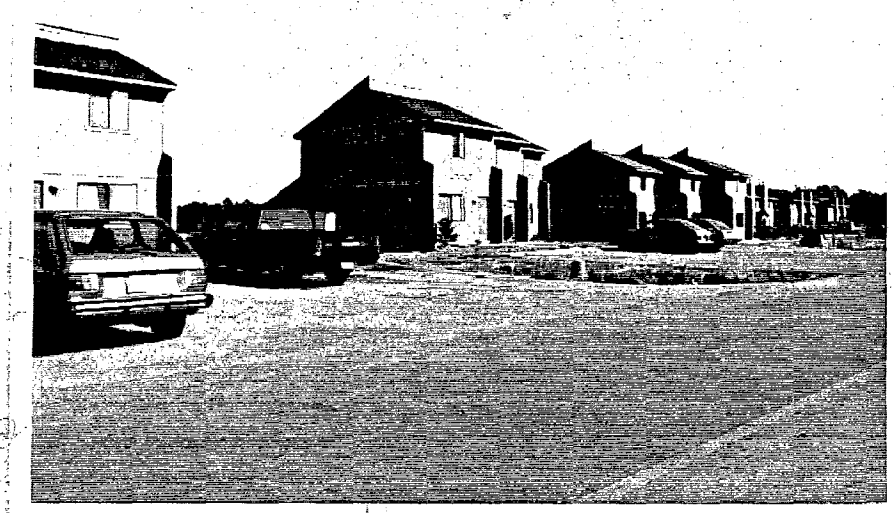
1/ The current Extraterritorial area boundries follow geographic features whereas the old one mile limits from 1962, were undefined archs. Otherwise, both encompass the same developed areas.

FIGURE 1
Percentage of Housing Stock by Type
in Havelock and the Extraterritorial Area*
1962, 1974, 1986[1]/

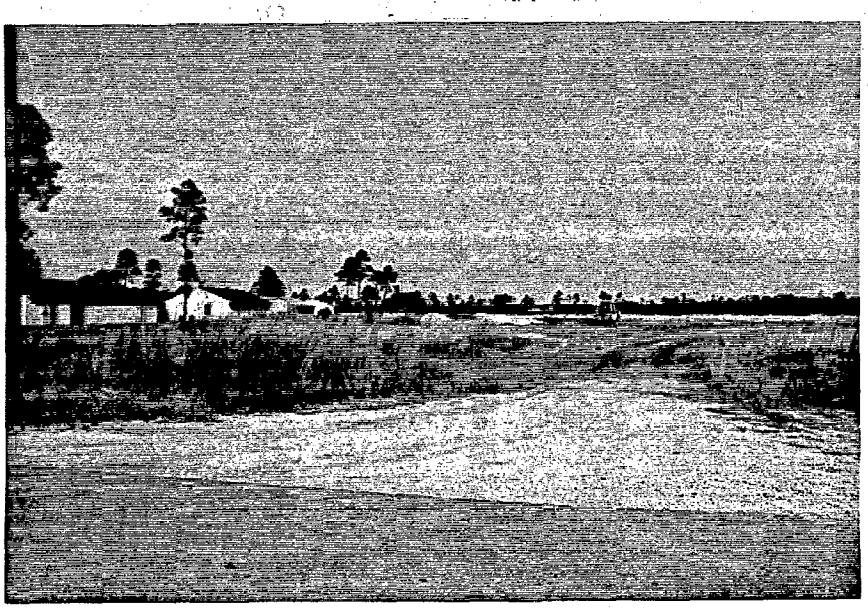


1/ 1976 Land Use Plan, Havelock, NC, Department of Natural & Economic Resources and Clark Planning Services: 1986 Land Use Survey

*Does not include MCAS Cherry Point



The greatest percentage increase in housing styles between 1981-1986 was in townhouses, increasing from approximately 13 to 19 percent of all housing units.



Bulldozer clears land for housing. In less than 6 months the field above located off Kim Avenue changed into 20 triplex townhouses.

of all housing types during the same period. Single family detached houses on individual lots remained the preferred housing style with 65 percent of the market in the most recent survey; halfway between a high of 69 percent in 1962, and the low of 60 percent in 1974.

Table 9 provides a comparison of total housing units by type for the same surveyed years. The most recent count found 3,652 total units within the same area that had 874 housing units in 1962, compared to 2,026 units twelve years ago.

It is evident through examination of local building permit data illustrated by Table 10, that much of the housing construction described above has occurred in the four year period from 1982, to 1986, when building permits were issued for 781 building permits.

Table 9 . . .Housing Trends 1962, '74, & '86, Havelock, N.C.*

	Single-Family		Mobile Homes		Multi-Family Including Duplexes		
	Number	% of Total	Number	% of Total	Number	% of Total	Totals
1962[1/]							
Total	605	69%	174	20%	95	11%	874
Havelock	449	73%	148	24%	13	2%	610
One-Mile	156	59%	26	10%	82	31%	264
1974[2/]							
Total	1,223	60%	545	27%	258	13%	2,026
Havelock	772	64%	292	24%	147	12%	1,211
One-Mile	451	55%	253	31%	111	14%	815
1986[3/]							
Total	2,363	65%	591	16%	698	19%	3,652
Havelock	956	68%	281	20%	168	12%	1,405
One-Mile	1,407	63%	310	14%	530	24%	2,247

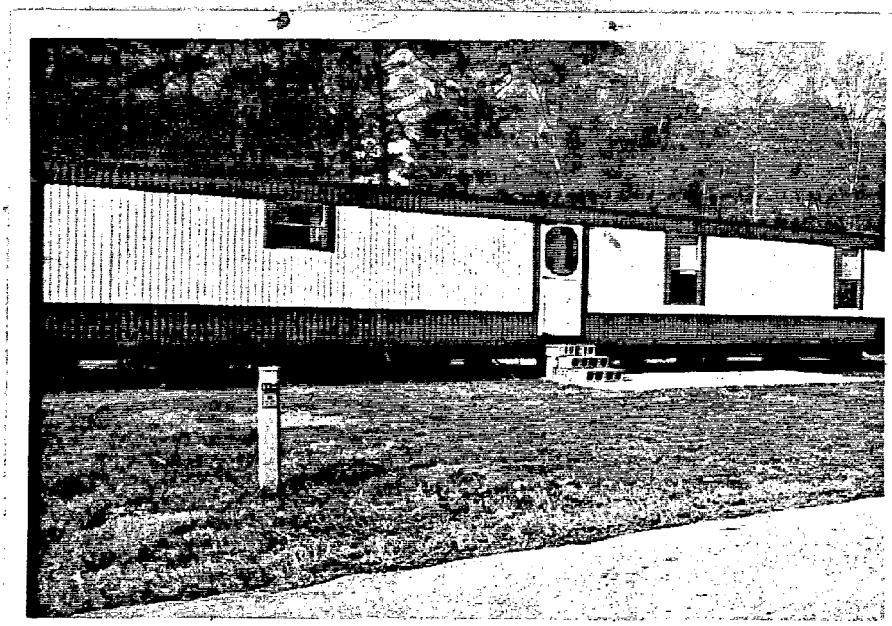
*Data does not include MCAS, Cherry Point nor off-station military housing. Also, in order to negate the housing changes resulting from annexation and changes in the extraterritorial area, all figures reflect 1974 City limits and the current extraterritorial boundary.

1/ Land Use Survey and Analysis, 1962, Division of Community Planning, Raleigh, NC

2/ Land Use Survey, January 1974, Division of Community Assistance, NC Department of Natural & Economic Resources, Washington, NC; and water meter records July, 1975, for both in and outside city, Havelock Utilities Department.

3/ Clark Planning Services, Land Use Survey, January 1986.

Jackson Trailer Park. . .making roo for more mobile homes. The City regulates fill materials, limiting biodegradable materials, providin stable building sites.



The City enforces hurricane zone tie down requirements for mobile homes.

Commercial. The four and a half mile long "downtown" commercial strip fronting on either side of Main Street is filling in rapidly. Development of new retail and office services has been brisk during the past decade with approximately a doubling of such establishments from 250 to nearly 500. Table 5 shows that although residential construction has dominated the value of building construction from 1982 to 1986, non-residential building activity has been increasing its share of the total dollar amount. More retail and service type businesses have sprung up to serve the rapidly increasing resident population of the civilian and military community. Since 1979, the City has witnessed construction of the Westbrook Shopping Center, Cherry Plaza, East Plaza, the expansion of several other centers, including Century 21 Plaza, and two new motels with a third one now on the way.

The land use survey revealed that commercially related land uses had increased from 132 acres in 1974, to 278 acres lin 1986. Since most of that change had occurred in the preceeding 6 years, which translates into an average annual increase of 23 acres for the period.

Besides the continued spread of the business district north and south along U.S. 70, signs of private redevelopment are also appearing in older sections of the strip as some newer buildings are beginning to replace older shops. This is evident by the example of a new two story office condominium under construction opposite the Public Safety Building. No attempt was made here to perform a market analysis of office or retail space demmand nor to determine what impact might there might be on service businesses if through traffic were diverted to a Bypass.

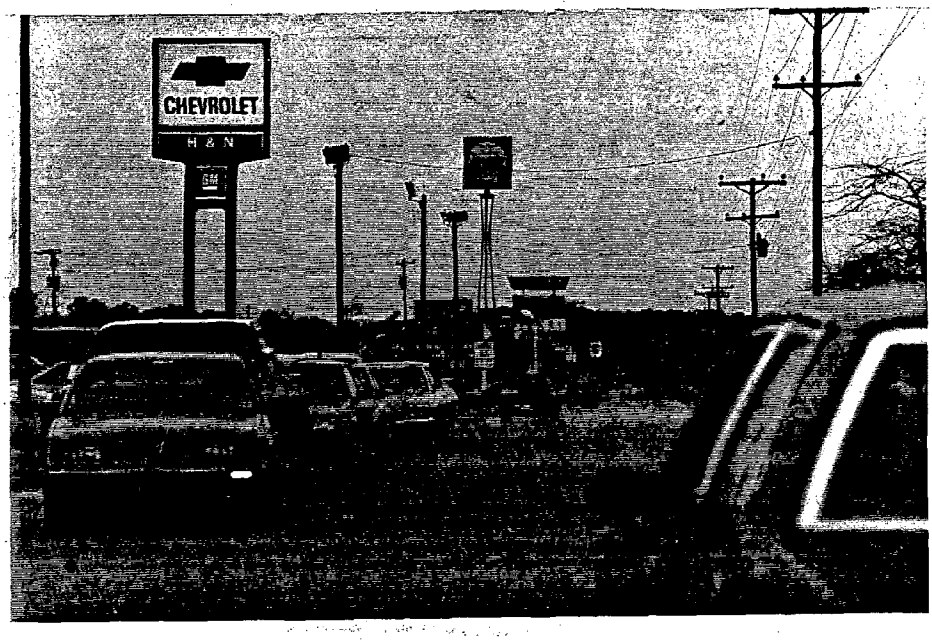
The survey also noted that convenience type businesses were starting to appear near the intersection of N.C. 101 and McCotter Blvd. This activity was predicted in the previous CAMA Plans.

Table 10 . . . Havelock Residential Building Activity 1982-1985

Year	Single Family Units	Duplex Units	Condos Units	Towhhouse Units	Apt. Units	Motel Units	Triplex Units	Quadra-Plex Units	Totals
1982	122	40	-	34	66	36	3	12	313
1983	124	10	-	37	-	-	3	4	178
1984	64	-	-	-	-	18	-	4	86
1985	83	26	-	-	-	-	27	68	204
Totals	393	76	0	71	66	54	33	88	781

NOTE: All figures are expressed as housing units not structures built.

Source: Havelock Building Inspection Department



Increasing traffic congestion remains a major concern for area residents.

Afternoon rush hour traffic between Main Street and Cherry Point's Main Gate at N. C. 101.

Industrial. One of the primary objectives for Havelock that was included in the two previous CAMA Plans was to increase the industrial employment base in order to be less dependent on employment fluctuations at the military base. Little change, however, has occurred in the amount of land devoted to manufacturing. The survey showed a slight increase from 18 to 25 acres devoted to industrial uses; including the Connor Homes Manufacturing Plant located north of the City near the intersections of US 70 and Greenfield Boulevard, and the Blue Bell building and a vacant building west of Belltown Road at Woodhaven Street.

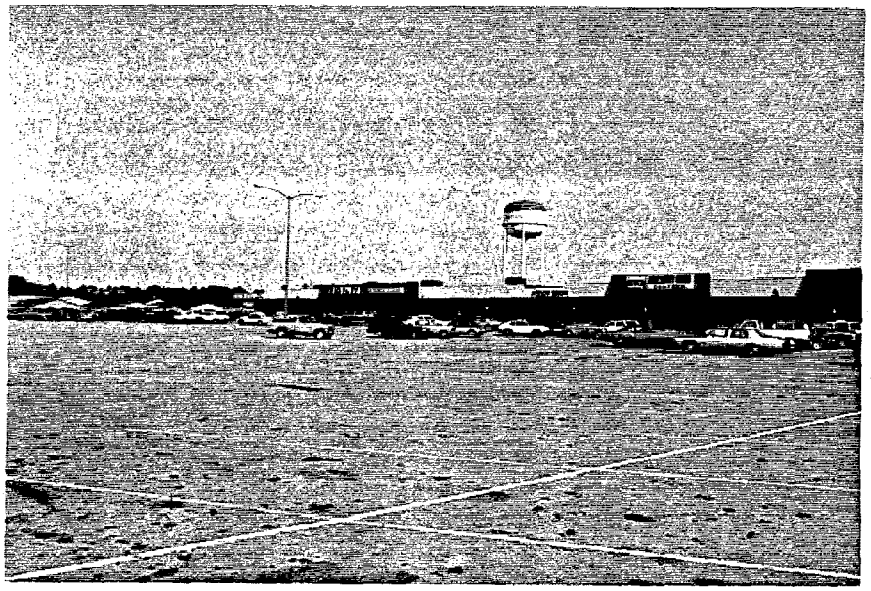
Transportation, Communications, and Utilities. This land use category includes utility right-of-ways, locations of the city's water and wastewater treatment plants, streets and railroad right-of-ways. A total of 684.8 acres or 25.9 percent of the planning area is used for these facilities and services. The major changes in this category has been caused by the corresponding increases in residential street right-of-way dedication and new street construction.

Government & Institutional. Not including Havelock's largest occupant of 5,000 acres contained in the air station or other federal properties such as the Croatan, there are 154.6 acres of land used for government and institutional purposes. Schools and public buildings and grounds are included in this category. The Existing Land Use Map (A-1) shows the location of the new Roger Bell Elementary School east of the High School off N.C. 101. Havelock is proud, too, of the new Public Safety Building and newly renovated City Hall located off Hatteras Blvd. This municipal government complex also includes the Public Works Building, a newly refurbished former Rescue Squad building that now serves as a new Senior Citizen's Community Center. Also, located here is the newest symbol of the community--a Harrier Jet, permanently mounted atop a pedistal and displayed in clear view of motorists traveling along Main Street.

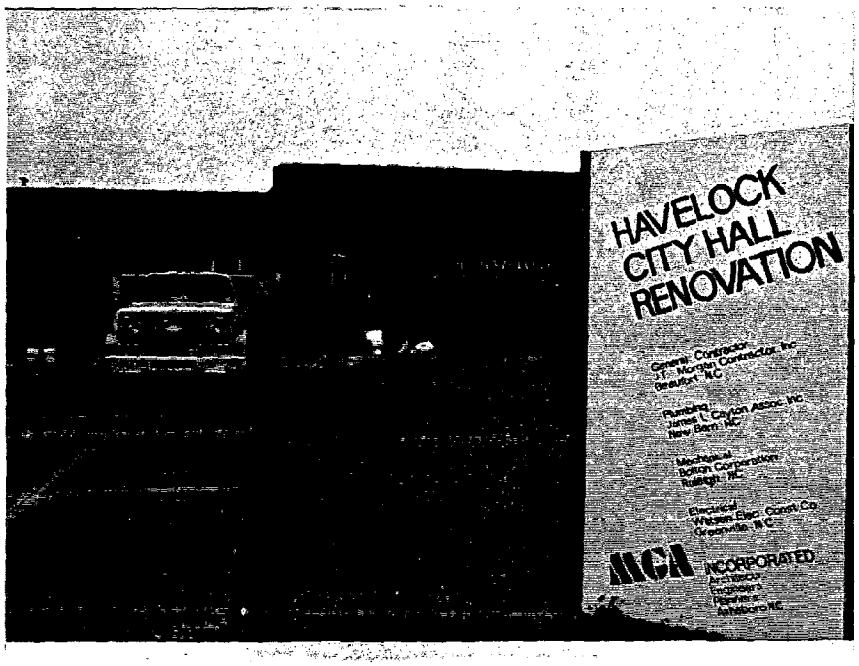
Cultural, Entertainment, & Recreation. There are 233 acres of land included in parks, churches, lodges, theaters, and cemeteries. About a dozen neighborhood parks from as small as an acre to the nearly 5 acres have been added to the acreage in recreation use by developer donation as called for in the City's subdivision regulations. Space for an air museum that has been proposed by the Alfred A. Cunningham Air Museum Foundation, Inc. is presently being sought in addition to a million dollar plus sports and convention center that has been proposed by the City Recreation Department.

Croatan National Forest. There are 1,452 acres in the Croatan National Forest, containing mostly managed forests, located within the ity's extraterritorial area. The Citizen's Opinion Survey found that 69 percent of the respondents did not want to see more of the Croatan sold for development. The Croatan boarders the City limits and jurisdiction east of McCotter Canal and the planning area northwest of Greenfield Boulevard.

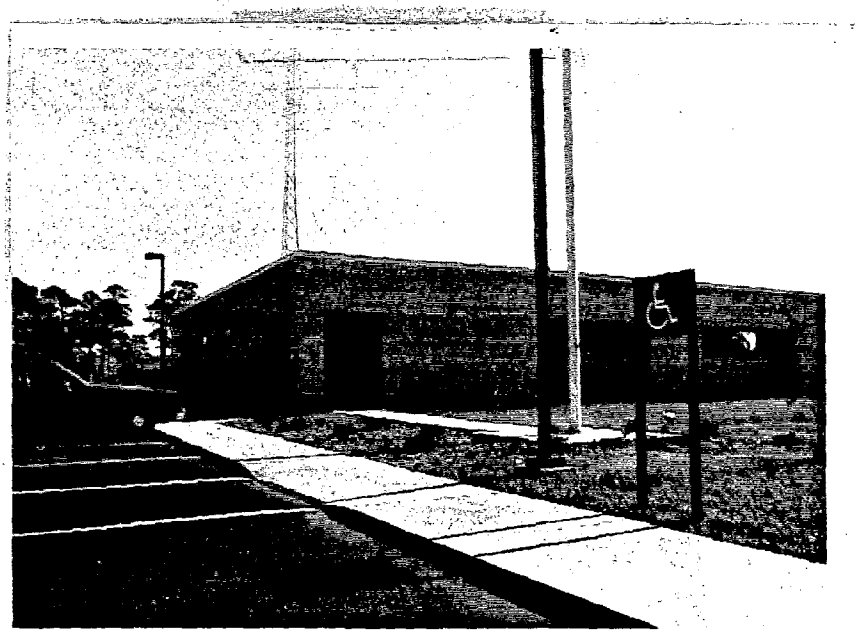
Havelock has had sign regulations for ten years, but sign clutter is still evident. Notice how the portable sign above blocks driver vision from on-coming traffic.



More attention could be paid to providing landscaping in many parking lots. The City reduced requirements for off-street paved parking by one third in 1986.



City Hall undergoes major internal renovation in 1986.



New Department of Public Safety houses police and rescue.

The picnic shelter and grounds of the new Walter B. Jones complex were added in 1985, to the area across from City Hall.

The City desires to conserve natural wildlife habitat in wooded swamps and flood plains along the tributaries of Slocum and Hancock Creeks.

Restricted Wetlands and Water Areas. The Existing Land Use Map includes information denoting the floodplains of local creeks as taken from the preliminary Flood Insurance Maps for Havelock (September 1985). Wet and very poorly drained soils not suitable for development together with wooded swamps are generally located withing the 100-year flood plain. There are 600 acres of these lands and water areas located within the planning area. This is not to imply that all poorly drained wet soils are confined to the 100-year flood plain. Indeed this is not the case since nearly all of the soils in the planning area have from severe to moderately severe wetness hazards (see related discussions in the chapter on Constraints to Development).

Other Undeveloped Lands. Those lands that were found to be vacant, cleared, wooded, partially cleared, and barren grounds were included in the land use category labeled Other Undeveloped Lands on the Existing Land Use Map. Approximately 300 acres of this category were in transition from wooded to cleared for development of housing. Altogether, 3071.8 acres were included in the undeveloped land category.

CURRENT PLANS, POLICIES AND REGULATIONS

Below is a list of the current plans, policies, and regulations that are presently in effect in Havelock. Each one of these are affecting land use in Havelock today. The existing plans will provide information which will assist in the preparation of this plan update. They also serve as a base from which change can be measured. The current policies and local regulations will be reveiwed in view of recommedations adopted in the 1976 CAMA and 1981 plans and any problems which may have developed over the past five years. The listing of relevant state and federal regulations provides a basis for determining whether local regulation of any possible land use problems is warranted. Furthermore, current local policies and regulations should be evaluated from time to time to insure they reflect local desires and are still consistent with changes in state or federal law that may have occurred during the past five years. This summary provides a guide to the City and developers when a land development project is proposed.

Changes made between 1981-86.

Since the 1981 CAMA Plan update the following plans have been published that should be added to the earlier listings:

1. Air Installation Compatible Use Zone (Update) Cherry Point MCAS, 1981. The first AICUZ plan was adopted in 1975. The update included acknowledgement of major changes in aircraft operational changes implemented following noise studies, review of operational levels, and flight paths. Operational changes were made that significantly reduced noise over development on and off-station. Also, a more accurate noise description using the day/night average sound level (LdN) replaced the earlier composite noise ratings (CNR). More accurate determinations of accident potential zones resulted in larger areas being impacted than before. Havelock zoning ordinance changes were subsequently made to reflect these changes.

2. Land and Resource Management Plan Croatan and Uwharrie National Forests 1986-2000, National Forest Service, May 1986. The comprehensive management plan is a major policy document that clearly designates forestry land management practice for National Forest lands including those in Havelock's planning jurisdiction. Three management groupings are identified for these lands; including: a) No. 2 (located west/northwest in the Greenfield Boulevard vicinity) described as:

> "Old timber and car-touring areas. Timber harvested for wood and wildlife habitat. Many old trees left. Animals needing old stands favored. Off-road vehicles permitted on designated routes."

b) No. 3 (located southwest and south of Havelock,) as:

> "Commercial timber and hiking. Stands thinned and harvested at 40-to-80-years for high-quality sawtimber. Many roads closed to public. Animals needing young stands favored. No off-road vehicles. Visitors use mainly on foot or horseback."

c) No. 5 (located adjacent to and southeast of the McCotter Canal and City's jurisdiction), described as:

> "Modified natural areas. Trees not cut for timber production. Openings created for wildlife. Most roads closed. Little human disturbance of animals. Visitor entry on foot or horseback."

All of the above described Croatan holdings and management areas are depicted on the Constraints to Development Map (A-2) and considered in preparation of the Land Classification Map (A-3).

3. Craven County, North Carolina Hurricane Evacuation, Hazard Mitigation and Post Disaster Reconstruction Plan, George Eighler & Associates, Inc., June 1984. This plan was prepared using the process outlined in Before the Storm - Managing Development to Reduce Hurricane Damages; (August, 1984) by McElyea, et al. It includes recommended policies and implementation techniques for Craven County including Township 6.

4. Craven County Land Use Plan Update, Craven County, North Carolina, John Schofield, AICP, Consultant Planner and Donald Bumgardner, County Planner (February 1982). The plan was an update of the CAMA Plan (1976) prepared under the planning guidelines of the Coastal Area Management Act. An amendment to the Land Classification Map adopted May 6, 1983, changed from Community and Rural to Transitional land adjacent in the Westbrook Subdivision area prior to extension of the City's extraterritorial jurisdiction. Coordination of the Craven County and Havelock's Land Use Plan and development policies is required by the CAMA guidelines.

5. Flood Insurance Study, Havelock, North Carolina, Federal Emergency Management Agency, September 23, 1985. The study includes Havelock and its extraterritorial jurisdiction. Flooding caused by hurricane induced storm surge is studied in detail. Areas projected for development in areas possibly subject to flooding through 1988, were studied in detail also. The study, flood insurance rate map and floodway boundary map

were most helpful in preparing the Constraints to Development Map (A-2) and Land Classification Map (A-3), and in helping define those limited areas subject to flood damage during hurricanes. A Flood Plain Zoning Ordinance will be adopted in late 1986, by Havelock to put in place required and necessary building controls and flood plain protection measures in conformance with the Federal Emergency Management Agency's Flood insurance program.

6. Preliminary Engineering Report on McCotter Canal Drainage Basin for the City of Havelock, North Carolina, James E. Stewart & Associates, Inc., October 1984. Major drainage problems in the face of increasing development in East Havelock prompted the City to commission this preliminary drainage plan. It proposes alternative systems of artificial drainage structures and ditching improvements that would shed stormwater and seasonal high water ground water from developed and developing sections of the City, and the rest of the McCotter Canal/ Shop Branch drainage basin. The McCotter Canal is proposed under Alternative I for channelization by an open concrete channel. Total preliminary cost estimates indicate approximately $6.3 million would be required to build a system of concrete and earth channels or $2.4 million using all earth channels.

   Limited new ditching and some improved maintenance has occurred following the study. However, methods of financing the recommended improvements have not been determined.

   The plan has not been evaluated concerning the potential for water pollution in the Shop's Branch, Hancock Creek, and Slocum Creek estuarine systems.

Policies and regulations effecting land use in Havelock that have been adopted within the last five years include:

1. Standard Design Criteria and Operating Procedures--Streets, waters, sanitary sewer, storm sewer-City of Havelock, North Carolina, prepared by Moore-Gardner & Associates, Ashboro, North Carolina, adopted by the Havelock Board of Commissioners January 10, 1983. The ordinance includes provisions requiring temporary and permanent erosion control measures in accordance with approved erosion control plans. In addition the City requires establishment or seeding of ground cover on new development sites prior to issuance of a certificate of occupancy by the Inspections Department.

2. Capital Reserve Ordinances - Water System Expansion and Wastewater treatment of Havelock, North Carolina, adopted June 25, 1984. These reserve funds are providing a means of setting aside monies to use for major improvement to the City's Water treatment and distribution and wastewater systems enabling the city the ability to match state Clean Water Funds and expand or improve these utilities to meet increasing demand.

3. Revised Water and Sewer Connection Fee Schedules were adopted by the Havelock Board of Commissioners, September 28, 1981. These user fees provide for "impact" monies; those needed to enlarge and upgrade the water and wastewater utilities as a result of new development being added to these systems. Revenues over costs of operation go into the capital reserve funds.

4. Fiscal 1986-87 Budget, City of Havelock, which includes funds for Phase I Water System Improvements ($467,000) and Phase I Wastewater Treatment System Improvements ($850,000). The use of these funds is explained in Chapter III under Community Facilities.

5. Amendment to Section 3, Article II, Appendix A of the Havelock Zoning Ordinance, September 25, 1984, when the Accident Potential Zones I and II plus updated noise zones from the AICUZ Plan Update (1981). These amendments were made in response to the AICUZ Plan Update as a tool to aide in implementing the compatible land use objectives of the AICUZ program for MCAS Cherry Point and Havelock.

6. Amendment to Article III, Section 1, Appendix to the Havelock Zoning Ordiance reducing off-street parking area requirements for non-residential uses by one-third (August 1986). In recognition that excessive paved off-street parking was being required for non-residential development, the City reduced by one-third the number of spaces required. This has the recognized (long term) benefit of saving scare land for open space, landscaping, and building construction. Furthermore, less paved area should mean less polluted storm water runoff into area streams.

7. Enforcement of the North Carolina Sedimentation Erosion Control Act requirements under jurisidiction of the City of Havelock, by ordinance was taken over by the North Carolina Department of Natural Resources and Community Development, Division of Land Resources. The local Sedimentation Erosion Control Ordinance includes provisions for erosion control of lots as small as 7,000 square feet, whereas the states jurisdiction stops at a minimum of one acre.

The Division of Land Resources took over enforcement of the Act's provisions in 1984, following their findings that Havelock was not adequately enforcing the ordinance as it related to the Woodhaven Street crossing of the East Branch of Slocum Creek.

8. Minimum Housing Code of the City of Havelock (October 1, 1981). Although Havelock's housing is relatively new and in good condition, the city adopted a minimum housing code similar to the North Carolina Model Minimum Housing Code prepared by the N. C. League of Municipalities (1978). The Building Inspections Department enforces this code. The City should be commended for enforcing these regulations as a preventative maintenance policy that too many other North Carolina communities with poor housing conditions have not adopted.

9. The Zoning Ordinance was amended in 1985, to add the R-7 MH, Mobile Home Subdivision section. It permits development of planned subdivisions for the sale or rental of lots for manufactured housing. Until this ordinance was enacted mobile homes were required to locate in mobile home parks. Minimum lot size was set at 5,000 square feet.

Relevant Federal and State Regulations. The North Carolina Division of Coastal Management, North Carolina Department of Natural Resources and Community Development published, "A Guide to Protecting Coastal Waters through Local Planning, May, 1986." The guide contains a comprehensive summary of various state and federal laws effecting water and land disturbing activities in coastal North Carolina. This plan includes the guide's summary by reference.

SIGNIFICANT LAND USE COMPATIBILITY PROBLEMS

The most significant land use compatibility problem facing the future development of Havelock remains the noise and crash potential caused by military aircraft operations over or near populated areas.

A second area of concern to the community is drainage of existing developed sections of the city, particularly eastern segments, and planning and funding major drainage improvements. The Coastal Resources Commission has added another factor to the equation--reducing the pollution potential of urban storm water runoff on coastal waters.

Military Aircraft Operations at MCAS, Cherry Point. The development of the Havelock commuity has occured as a direct result of the presence of the air station. The economic and social well-being of the city and region are very much effected by changes in military and civilian employment at Cherry Point and NARF. This is well understood by most of the residents living off-station who live, work, and play under the everpresent military aircraft operations. Not too surprisingly then, interviewers conducting the Citizen Attitude Survey last February found that over 75 percent of the sampled population were "concerned" about noise and aircraft operating overhead, but they also stated they knew about these things when they moved there and very much supported the military base. These survey results were similar for civilian as well as military respondents. George M. Britton, of Behavior Research Associates, summed it up by saying: "It (aircraft noise, etc.) was a popular non-issue."[1/] Regardless, however, of the majority opinion, the military and city officials need to take the issue even more seriously than they have during the last ten years as more development unsuited to locating near aircraft operations pressures for available space.

To prevent further encroachment of incompatible development, thereby providing a quieter and--safer environment for the people in Havelock and to protect the mission of the air station and its economic benefits, the Air Installation Compatible Use Zones (AICUZ) Program was instituted at MCAS, Cherry Point in 1975, and updated in May 1981.

The 1981 AICUZ Update was published too late to be referred to in the previous CAMA Plan Update. Significant changes had occured in the operational functions at the air station between 1978 and 1981, as a result of noise

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[1/] Citizen Opinion Survey, Havelock, N.C., Behavior Research Associates, Kinston, N.C. (February 1986).

surveys in an effort to reduce high noise levels over populated areas on and off the air station. The executive summary to the 1981 AICUZ Update of the earlier program:

> "Two important changes in the methodology of determining a station's AICUZ have been implemented since the 1975 surveys . . . The day/night average sound level (Ldn) noise discriptor has been used instead of the composite noise rating (CNR) descriptor. Ldn is an objective noise measure that predicts more accurately (emphasis added) the impact of noise on people. The method of determining accident potential zones (APZ's) has also changed; resulting in a larger area being impacted. This change more accurately reflects the potential for accidents."1/

The updated AICUZ's noise and accident potential zones are shown on Map A-2, The Constraints to Development Map of this plan. It reflects a significant reduction of higher noise levels over populated areas; but more area off runway 5 is located in APZ's because of the more accurate criteria mentioned above.

Even while the first AICUZ plan was being prepared the air station's command and logistics personnel worked closely with City officials in seeing that the AICUZ' goals would be implemented by the City. The City was the first North Carolina community located near an airport to adopt and enforce a comprehensive package of policy and regulatory controls to help implement such a compatible land use plan. These actions included:

1. Zoning ordinance amendments to reflect AICUZ standards;
2. Zoning map amendments to reflect AICUZ footprints;
3. Use of Subdivision Regulations to screen residential subdivision proposals;
4. Adoption of a noise disclosure ordinance requiring notice to home buyers to noise levels effecting the property; and
5. A development moratorium for potentially highest noise and accident potential zones that kept incompatible residential subdivisions from developing.

After the 1981 Update was published Havelock amended its zoning ordinance to incorporate the new APZ's. This was not accomplished until September 1984, after the city first extended its extraterritorial area in 1983. Also, and perhaps because of the substantial change in noise levels over populated areas, the Fair Disclosure Ordinance has not been enforced or amended. Although it should be mentioned that both the Veteran's Administration and Federal Housing Administration operate under a Federal directive that necessitates their acceptance of noise levels being within acceptable limits before approving financing for new housing projects.

Not knowing what the future mission changes will be at the air station makes it difficult to plan for compatible land use ten years or more into

the future. There are already signs that runway 32, east of N.C. 101, will see more aircraft activity. With this in mind and as recommended in the 1981 AICUZ Update, the military has recently acquired about 100 acres on the east side of the curve in N.C. 101 and parallel to runway 32. This provides a small amount of buffer considering the Noise Zone 3 (75 Ldn) extends across the highway several hundred feet over private property which is under consideration for development as a part of a 150 acre planned development project. The City will need to act cautiously, as it has in the past, to work within the objectives of the AICUZ program. During the fall of 1986, the City Board of Commissioners acted prudentially, following advise from Base personnel, in first denying a developer's request to re-zone an area located in a Noise Zone 3 area from a residential--agricultural (R-20A) "holding zone" to medium to high density residential (R-7 and R-M), opting instead to pursuade the applicant into a more compatible commercial zoning for 50 acres closest to the high noise and re-arranging the remaining 100 acres for the planned residential development. The Land Classification Map (A-3) reflects similar patterns.

The unsubdivided vacant lands located off the end of runway 5, between Woodhaven and Foxcroft subdivisions is subject to various APZ's and is zoned light industrial which would generally permit development of property in conformance with the AICUZ. However, residents from within the Woodhaven subdivision who live near the Blue Bell factory expressed concerns on the opinion survey that they did not want to see more factories locate nearby. Property located across the railroad and within APZ's is owned by the National Forest Service, which will be retained in the Croatan in support of the AICUZ.

In summary, there needs to be a continuing dialog between officials for the city and the air station in order that future development conflicts can be avoided.

Drainage and Soils. Poor drainage, especially in eastern Havelock, together with the all too frequent heavy rain showers was on everyones minds when the opinion survey was conducted in February, much as it was when the first attitude survey was conducted ten years earlier. People throughout the community are, however, more aware of the problem now , yet more development is effected by poor drainage than ever before. Storm water drainage was . . ."the number one issue amoung the persons selected by the survey." Furthermore, the surveyors noted:

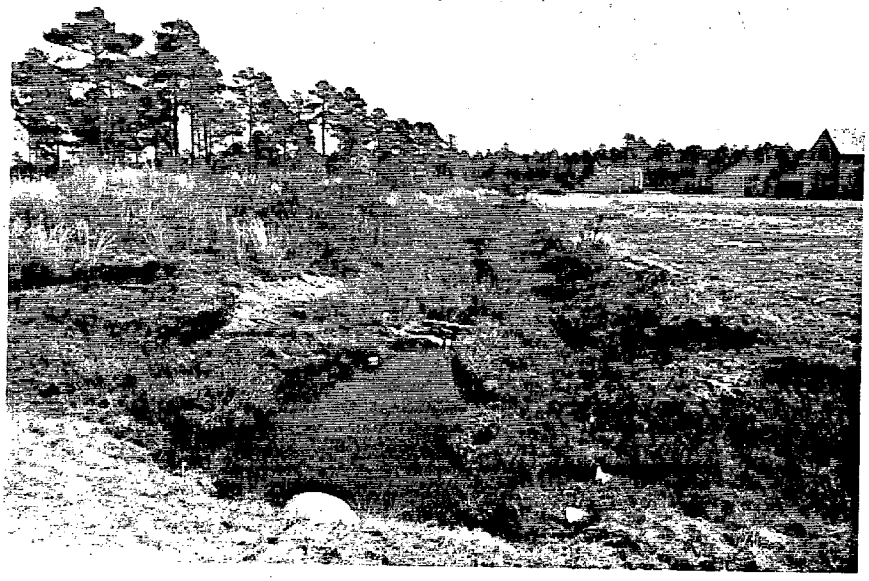
> "Even those not effected by this problem cited this as a major problem for others, therefore a major issue. Most persons seemed to want to place the 'blame' on development that was allowed in flood plain or 'swamp' areas." 1/

The City has spent money and energy attempting to solve the drainage

1/Citizen Opinion Survey, Havelock, N.C., Behavior Research Associates Kinston, N.C. (February 26, 1986), p. 2.

The above photo shows good example of shallow well-maintained open ditch or swale along McCotter Boulevard.

The large ditch below drains eastward toward McCotter canal. Ditch maintenance is a constant problem.



problems. The 1976 CAMA Plan included ample descriptions of the existing and future concerns and some of the consequences of the City's continuing growth on flat terrain and soils with high ground water tables with inadequate drainage systems. With this in mind the City adopted a strategy for dealing with the problems which started with (1) having City wide large scale plainimetric maps with detailed topographic information prepared; and (2) having an engineering study prepared to analyze the existing drainage systems in light of expected development impacts on increasing storm water runoff. The drainage study would then provide short term and long range recommendations for improving drainage throughout the City and its jurisdiction. More discussion of the drainage constraints on development and some of the related issues are described further in Chapter III, Constraints to Development.

PROBLEMS FROM UNPLANNED DEVELOPMENT

Since the early to mid-seventies the City of Havelock has been actively engaged in planning for the growth and development that was predicted would occur. The City's Zoning Ordinance, Subdivision Regulations, utility planning and extension policies have all been adopted inorder to provide growth management. The earlier CAMA Plans, 201 Wastewater Facilities Plan, two drainage studies, Standard Design Criteria, and many other plans, policies, and regulations have been put into use for the purpose of reducing potential for problems of unplanned development. Even with these land use tools and those of the federal, state, and county governments too, all potential problems from past and future development may not have been dealt with properly in the past nor may they be totally avoided in the future. One of the purposes on this plan update is to identify policies and implementation strategies to address those land use problems that can be anticipated.

Some of the more obvious problems from unplanned development have already been mentioned above, namely: incompatible residential development in high noise and accident potential zones; or too rapid development on poorly drained soils when downstream drainage systems won't handle the added storm water runoff. Other problems have been a hodgepodge of mixed commercial, residential, and office uses that built along Main Street with inadequate parking lots, driveways, and setbacks from the road--mostly before there were any zoning or other development regulations.

Controversial zoning issues have arisen from time to time even with the land use tools available to the city. Residents of established single family large lot neighborhoods generally do not desire higher density (smaller lot) subdivisions or multi-family housing to locate next door. Concerns generally revolve around increased traffic and a feeling that existing property values will be adversely affected.

Curbs and gutters channel street storm water into drains in this West Havelock subdivision.

Open ditches and no curbs and gutters in this area of east Havelock retain some water days following rain showers.

AREAS EXPERIENCING OR LIKELY TO EXPERIENCE MAJOR LAND USE CHANGE

From examination of existing and approved development proposals in view of historical trends and the grown projections discussed in Chapter IV,

Havelock will continue to develop outwardly from the City as well as have some degree of infill on available lands that are already undergoing residential and commercial development. Generally for the ten year planning period the area southeast and east of McCotter Blvd. and along N.C. 101 toward its curve near runway 32 will see continued development with most of it in housing (this of course if the various constraints discussed in Chapter IV are satisfactorily addressed). Additional residential development is also anticipated southwest of the Tryon Park area, northwest of the city in the Greenfield Blvd. area, and north of the Westbrook Subdivision. The principal land use that will be displaced as a result of continued City expansion will be forest lands.

CHAPTER III

CONSTRAINTS TO DEVELOPMENT

INTRODUCTION

Havelock continues to grow within the confines of significant man-made and natural constraints. Careful planning is required in order for Havelock to continue developing in a way that will lessen the quality of life for present and future residents, nor distroy natural resources the community is fortunate to be surrounded with. As described in Chapter IV, Estimated Growth Demand, there is adequate land available with few constraints or ones for which careful planning and sensible actions will overcome identified constraints, to provide the estimated 1,167 acres of development room needed in the next ten years.

The major constraints to development are virtually unchanged from those described in the earlier CAMA plans, namely:

1) High ground water table and poorly drained soils in 90 Percent of the planning area;
2) Flooding both caused by development in poorly drained areas and from larger storms that may cause major flooding in the floodplains of local creeks;
3) Steep slope areas along the terraces that overlook local creeks;
4) Fragile natural areas such as coastal wetlands, wooded bottomlands, areas that sustain remnant plant or animal species;
5) Boundaries of the Croatan National Forest;
6) Boundaries of properties owned by the MCAS, Cherry Point;
7) The high noise and accident potential zones depicted in the AICUZ within the planning area; and
8) Adequacy of community facilities to sustain growth.

Soils--Suitability and Limitations. The Soil Conservation Service published detailed soils information for the Havelock area in August 1973. There were 39 soil mapping units identified in the survey, all but the Kalmia loamy sand soils with 2 to 6 percent slopes have severe restrictions for septic tanks caused by high ground water tables. Except where construction of new streets, parking lots, houses, commercial buildings, and other development has disturbed surface conditions the soil survey is still current.

Flooding Caused by Poor Drainage and Development. The preceeding chapter included some descriptions of the symptoms of developing a community in an area with generally flat terrain and poorly drained soils. Flooding of ditches, yards, and streets occurs frequently following locally heavy rains.

The City commissioned the engineering firm of Townes, Edwards, & Fisher of Morehead City, N. C., to prepare a drainage study of Havelock and the extraterritorial area in 1977. The study was completed in August 1977, and reviewed by a special drainage committee for the Planning Board.[1/] By 1978, an extensive listing of recommended immediate and long term solutions were adopted. There are too many actions contained in the report and program-of-work to list here. A copy of the study is on file at the Public Works Department for reference. Suffice to say, the ity began implementing many of the maintenance recommendations and also acquired a 60 foot wide easement from Weyerhouser Corporation east of the Tryon Park subdivision for use as a major diversion ditch for storm water runoff from the Cherry Plaza commercial area. Havelock seemed to be on its way toward solving some of its drainage problems.

Meanwhile, development picked up quickly as the air station's activities increased and after the City was able to begin allowing more tap-ons to the ity's sanitary sewer and water systems. Between 1980, and 1986, approximately 900 housing units were built in the McCotter Boulevard and Havelock High School areas. A second drainage study was commissioned by the ity as a result of compounded flooding problems in the eastern drainage basin to McCotter Canal. The engineering firm of James E. Stewart and Associates, Inc., Jacksonville, N.C., indicated in their report that was presented to the city in October, 1984, that the McCotter Canal was not low enough and did not have enough grade to allow the accelerated ground water and storm water runoff to drain from individual development projects.[2/] In essence, a major overhaul of the McCotter Canal and the feeder ditch system was suggested. Two basic alternatives were presented. One called for mostly concrete channels at an estimated cost of 6.6 million dollars. The second was less expensive initially at approximately 2.4 million dollars, but because it called for mostly earthen open cut channels it would have higher maintenance costs associated with failing embankments.

Since the McCotter Canal drainage study in 1984, the City has been exploring various methods of funding the improvements. A combination of drainage basin special tax assessments, new development impact fees to pay for improvements required downstream to accomodate additional runoff from new development, and general funds, bond financing, and state assistance are all being considered. In addition, the City is expected to reexamine its Standard Design Criteria, with consideration of adopting some form of a storm water management criteria so that future development would need to submit alternative drainage plans with an emphasis of storm water retention. In addition, the State Environmental Management Commission and Coastal Resources Commission strongly favor local governments to evaluate the effects urban storm water runoff has on coastal waters. Using holding ponds and avoiding development of areas requiring extensive artificial drainage is preferred by the state in order to protect down stream water quality.

1/ The drainage committee included Jim Elder, Jim Shank, Art Watson, Ken Barnes, and William A. Townes, P.E.

2/ Preliminary Engineering Report, McCotter Canal Drainage Basin, for the City of Havelock, James E. Stewart & Assoc., Inc., Jacksonville, N.C., October, 1984.

Another point was made by the consulting engineers to the McCotter Drainage basin study that is worth mentioning here. On page P-20, of the study was the following statement:

> "This report assumes that those areas lying to the Northern and Western sides of the existing McCotter Canal are or will be developed in the near future. The area lying South and East of McCotter Canal commonly known as the Forest Service and Weyerhauser properties is assumed not to be developed within the foreseeable future."1/

Given the current and anticipated significant drainage problems that need to be overcome on the Northern and Western side of the McCotter Canal, the City does not believe it will be desireable for Havelock to promote development East of the McCotter Canal during the next ten years. The same is generally true for the area South of the Canal with the exception that the City believes it is very important to extend McCotter Boulevard Southwestward as proposed in the Thoroughfare Plan. The Land Classification Map (A-3), therefore shows approximately 100 acres of forested land Southwest of U.S. 70 in Transition Class. While the majority of Forest Service land Southward is shown in the Conservation Class.

Flooding Along Area Creeks. The City has been waiting for ten years for the detailed maping of the 100 year flood plains and floodways and the Flood Insurance Study so that a Flood Damage Prevention Ordinance could be adopted. The City is expected to adopt such an ordinance late in 1986, begin enforcing it and enter the Regular Insurance Program. The ordinance will help the ity to prevent obstructions to the floodways of creeks, lessening potential flooding damages to properties. The Land Classification Map includes not previously filled or developed lands within the 100-year flood plain in the Conservation Class, to further protect them from incompatible development.

Steep Slope Areas. The 1976 CAMA Plan suggested the existance of a number of places in Havelock near Slocum Creek and the East and West Prongs of Slocum Creek where slopes exceeded 12 percent. The slopes are subject to excessive erosion if vegetation is removed. The detailed planimetric mapping of the City showing one foot contours and elevations should now be consulted to locate these areas more precisely.

Fragile Natural Areas. Chapter V, includes basic descriptions of Areas of Environmental Concern and other fragile habitats in the Havelock area and the policies and strategies for protecting them.

1/ Stewart, p-20, October 31, 1984.

Boundaries of the Croatan National Forest. Within the planning area the boundaries of the Croatan have remained fixed since before the 1981 CAMA Plan Update. The Croatan limits outward expansion of development to the Southeast, South, Southwest, West, and Northwest. The Land and Resource Management Plan Croatan and Uwharrie National Forests 1986-2000, contains a comprehensive management program for all the lands within the Croatan. Very detailed descriptions of wildlife habitat, remnant species, such as the red-cockaded woodpecker, recreation opportunities, and timber management are included.1/

Boundaries of MCAS Cherry Point. As mentioned elsewhere in this plan update, the very existence of the City of Havelock and the development that has been witnessed since 1941, has been directly a result of the air station. The City does not anticipate any significant changes in the Base's property holdings in the near future.

AICUZ. A summary of the constraints to development caused by aircraft operations at the air station are described in Chapter II, pp. 27-29. The current Air Installations Compatible Use Zone Plan for Cherry Point provides a complete program for the air station and community to minimize development conflicts within the planning area. Reference should also be made to the Constraints Map (Map A-2) in the back pocket of this plan. The map shows a portion of the 1981 AICUZ noise and crash hazard footprints together with new flight patterns identified by the base in 1986.

1/ Land and Resource Management Plan 1986-2000, Croatan & Uwharrie National Forests, USDA Forest Service Southern Region.

WATER SYSTEM

The Havelock water system started operating in 1968. Table 11 illustrates the growth in customers served by the expanding system. In August 1975, there were 1,638 customers on a system that was in need of additional elevated storage tank and treatment pumping cpacity to keep up with the growing demand from potential residential and business customers especially in East Havelock. Beginning with plans prepared by the firm of Moore-Gardner and Associates, Ashboro, North Carolina in August 1973, the City has undertaken a number of water treatment system improvements, allowing service of new subdivision development and annexed areas. These improvements included a 300,000 gallon elevated storage tank located behind Cherry Plaza in East Havelock, treatment filters and distribution lines. By June 30, 1986, the water system had added 1,055 users of all types, a 64 percent increase from 1975, with an average annual growth rate of 96 customers.

Table 11. . . Growth in Water and Sewer Services
1975 and 1986

	1975[1/]	1986[2/]	% Change	Change	Average Annual Growth
Single Family, trailers, small businesses	1,546	2,564	66%	1,018	99.5
Apartments, larger businesses, churches, and schools	92	129	40%	37	3.4
All Users	1,638	2,693	64%	1,055	95.9

Source: Havelock Utilities Department

1/ August 30, 1975
2/ June 30, 1986

Presently, the 900,000 gallons per day pumping capacity is adequate for most of the year, but is insufficient to maintain current customer demand and provide adequate fire protection reserves in the elevated storage tanks during extended dry periods. During extreme emergencies, if the water plant becomes inoperable or fire fighting volumes are needed it is possible to obtain water from the MCAS Cherry Point water system by turning interconnecting valves.

Improvements to the water system budgeted in the 1986-87 City budget includes$467,500 for Phase I of the Water Plant Expansion. These funds are

earmarked for construction of an additional underground storage tank. In 1988, the City plans to add additional water treatment capacity of 1.5 million gallons per day by construction of a second treatment plant adjacent to the Cherry Plaza elevated storage tank. State Clean Water Grant funds and funds from the City's Capital Improvements Fund for water system improvements are projected to be sufficient to meet these needs.

Table 12 shows volume totals of treated water distributed to the public from July 1984 to June 30, 1986.

Table 12 ... Havelock Water Distribution 1984-1986[1/]

	(in millions)		
	1984	1985	1986
July	2.57	2.78	---
August	2.66	2.69	---
September	2.46	2.68	---
October	2.45	2.62	---
November	2.28	2.52	---
December	2.34	2.52	---
January	---	2.52	2.61
February	---	2.52	2.36
March	---	2.57	2.70
April	---	2.72	2.93
May	---	2.66	3.00
June	---	2.98	2.84

Source: Havelock Utilities Department

[1/] Treated volumes of water sold to the public per month.

Current tap on fees for connection to the water system were established November 1, 1981, based on recommendations from the City's consulting engineers at the rates shown in Table 13 . These rates were set to equitably pay for user costs to the system for operation, maintenance, and routine replacement of equipment and facilities. These rates are in conformance with all Federal regulations pertaining to the construction grants program.[1/]

Table 13. . . Water Tap Fees

"The fees to be charged as tap on or connection fees are as follows:

Water Tap on or Connection Fees

(a) Tap ons or connections prior to November 1, 1982 within subdivisions recorded on or before October 31, 1981 and subsidivions having received Step II approval on or before October 31, 1981 under the Havelock Subdivision Ordinance form the Board of Commissioners:

3/4 inch meter.	$ 150.00
1 inch meter.	$ 200.00
1-1/4 inch meter.	$ 300.00
1-1/2 inch meter.	$ 425.00
2 inch meter.	$ 550.00
3 inch compound meter	$ to be negotiated
Outside city limits add	$ 50.00

(b) Tap ons or connections except as provided otherwise in Subparagraph (a) above, and all tap ons or connections on and after November 1, 1982:

3/4 inch meter.	$ 650.00
1 inch meter.	$ 700.00
1-1/4 inch meter.	$ 800.00
1-1/2 inch meter.	$ 925.00
2 inch meter.	$1,050.00
3 inch compound meter	to be negotiated
Outside city limits add	$ 50.00

The foregoing fees under this Subparagraph (b) shall be increased by $500.00 for each residential living unit in excess of one served by a master water meter.

Source: Havelock City Code

1/ Moore-Gardner & Associates, User Charge System, Havelock 201 Facilities Plan, June 1979.

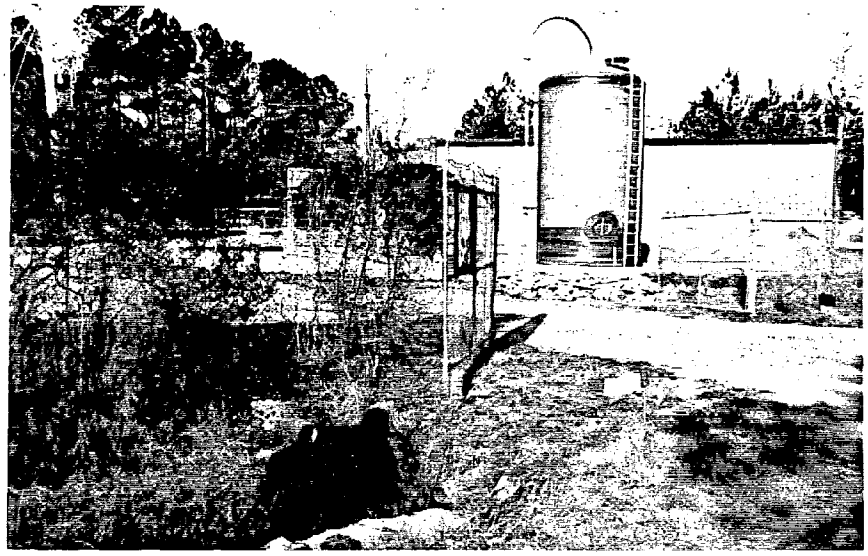
In 1984, the City adopted a Capital Reserve Fund for water and sewer treatment facilites improvements. Most of the added tap-on fees collected since then from new development has gone into this fund. These monies plus State Clean Water monies and pay as you go General Fund dollars are being used to undertake the Phase I improvements to both systems.

The 1986-87 budget also includes $35,000 for construction of loop connections: one at Highway 101 and Shipman Street; one between Speight Street and Nunn Street of Shepard Street; and one on Lynnwayne Circle. These loops are part of the City's continuing program to upgrade its water distribution systems for domestic use and fire fighting purposes.

Table 14 . . . Water/Sewer System User Trends 1985-86

	1985						1986					
Rate Schedules and Meter Size	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Inside Water & Sewer code (01) 3/4"	2355	2376	2403	2413	2428	2450	2482	2490	2510	2526	2544	2564
Inside Water (Only) code (02) 1"	65	64	63	63	63	63	64	64	64	64	64	63
Outside Water & Sewer code (04) 1½"	2	2	2	2	2	2	2	62	62	62	62	62
Outside Water (only) code (05) 1½"	63	63	63	63	63	63	63	63	64	64	64	64
Total	2485	2505	2531	2541	2556	2578	2611	2619	2640	2656	2674	2693

Source: Havelock Utilities Department



The City's drinking water received low marks by those surveyed in February 1986. The treatment plant and elevated 300,000 gallon storage tank on Lynwayne Circle will be supplemented by improvements to pumping capacity at the Webb Boulevard site in 1987. Other improvements scheduled for the next five years will just keep pace with demand.

The public opinion survey conducted in February 1986, indicated that the residences using the Havelock water supply were generally dissatisfied with the color and taste of their drinking water. The interview team was frequently subjected to samples of rust or muddy colored water with a distinct taste. According to the Public Works Director, sediment periodically enters the water system when the treatment plant's water softeners are down. When storage capability is sufficient and during off peak demand periods the following solutions to the problems are suggested as possible means of reducing the amount of line sediment and improving water color.

(1) Initiate a systematic hydrant/line flushing program starting closest to the treatment plant and working outward. This could be assigned to the Fire Department which would also give them the opportunity to perform pressure tests;

(2) Initiate a line cleaning or "pegging" system to loosen scale and sediment as part of the hydrant flushing program.

These programs, or others, may help provide more consistently clear drinking water, but could raise public complaints during flushing periods. A public education program with notices to customers in advance of such procedures would be appropriate.

SANITARY SEWER

The City of Havelock ownes and operates a 1.25 million gallon per day (mgd) capacity nitrification type sewage treatment plant, located off of Jackson Drive and adjacent to Slocum Creek. The City is operating under a permit (called a Special Order of Consent or SOC) issued by the North Carolina Division of Environmental Management. The present average daily sewage flow treated at the plant is 1.0 mgd. The SOC allows the City to treat another 115,350 gallons per day--nearly at the plant's capacity. Phase II treatment plant improvements have been approved by the Division of Environmental Management to raise treatment capacity to 1.5mgd. These improvements include adding a new circular clarifer, new lines from the existing contact beds, and an intermediate pump station. All construction must be completed and the plant operational before September 1987, so that the City may stay in compliance with state regulations and meet its commitments for development to tap on to the system.

Havelock's 1986-87 fiscal year Capital ImprovementsFund includes appropriations of $850,000 for completing the Phase II sewer plant expansion. The revenues for the project come from the following sources:

1.	Transferred from reserve for Plant Expansion	- $222,000.
2.	Transferred from General Fund	- $200,000.
3.	State Clean Water Funds	- $413,280.
4.	Interest Earned	- $ 14,720.
	Total	- $850,000.

Once Phase II is completed the expanded treatment plant will be able to accomodate projected sewage treatment demand until the end of the ten-year

planning period. The City's long range wastewater treatment plans call for quarter million gallon per day increases in capacity--staying ahead of demand--eventually reaching a maximum of 2.5 mgd capacity at the Jackson Drive plant.

The City has a progressive sewer tap on or connection fee schedule and requires new developments to install sewage collection lines in accordance with its subdivision regulations and standard design criteria. Current fee schedules are shown in Table 15. No significant policy changes regarding sewer system utility extention are anticipated in the planning period.

Table 15 . . . Sewer Tap Fees

Sewer Tap on or Connection Fees

(a) Tap ons or connections prior to November 1, 1982 within subdivisions recorded on or before October 31, 1981, and subdivisions having received Step II approval on or before October 31, 1981 under the Havelock Subdivision Ordinance from the Board of Commissioners:

4 inch service lateral.	$ 90.00
6 inch service lateral.	$ 165.00
If service lateral must cross a paved street, add.	$ 110.00

(b) Tap ons or connections except as provided otherwise in Subparagraph (a) above, and all tap ons or connections on and after November 1, 1982:

4 inch service lateral.	$ 590.00
6 inch service lateral.	$ 665.00
If service lateral must cross a paved street, add.	$ 110.00

The foregoing fees under this Subparagraph (b) shall be increased by $500.00 for each residential living unit in excess of one served by a master water meter.

Source: Havelock City Code

EDUCATION

Elementary and secondary public school facilities are provided to the Havelock area by the Craven County Public School system, which merged with the City of New Bern public schools in 1982. There are presently four schools in Havelock with the new Roger Bell Elementary School under construction and scheduled for opening for the 1986-87 school year. This new school is located off NC Highway 101, one-half mile east of Havelock High School.

Table 16, below, summarizes school enrollments and building capacities anticipated for Havelock area schools during the 1986-87 school year.

Table 16 . . . Havelock Area School,
Enrollments and Building Capacities

	1986-87 Est. Enrollments	Building Capacity
Havelock Elementary	610	750
West Havelock Elementary	960	1,050
Roger Bell Elementary	506	750
Graham Barden Elementary	560	750
Havelock Jr. High School	850	1,000
Havelock Highschool	800	1,000

The new elementary school will substantially reduce over crowding that has been a problem in West Havelock Elementary and Havelock Elementary Schools, where temporary classrooms have been used for several years to handle an excess demand of approximately 300 elementary school students.

Projected population increases in the Havelock, Harlowe, Township 6 area indicate expansions or additional classroom space will again be needed toward the end of the ten year planning period.

CHAPTER IV

ESTIMATED GROWTH DEMAND

INTRODUCTION

Having discussed many facets of how existing development has occured in Havelock, and having provided analyses of the relative strengths and weaknesses of existing land use patterns, an attempt will be made in this chapter to determine future demands which will be placed on the land. These demands will include population and economic growth and the relationships of that growth to future land needs to accomodate it. The period of concern is from 1985 to 1995.

Much of this chapter is devoted to discussions of development issues concerning economic and community development which are prescribed by land use planning guidelines of the Coastal Resources Commission. However, if they were not required, it would be necessary to discuss most of them because of their applicability to future development in Havelock. From these discussions and projections of future growth will emerge a set of policy statements (in the next chapter) which will include existing City policies toward development, as well as possibly new policies which may have heretofore not been considered or adopted.

POPULATION GROWTH

Recalling the increase in population referred to in Chapter II it is relatively safe to anticipate continued growth of Havelock's population in the future. While positive population growth is anticipated...and shown on the following table of populations projections...it must be noted that there are numerous variables and relationships between them which must be maintained in the future as they have in the recent past. For example if the two major area employers MCAS Cherry Point and NARF reduce civilian employment or military personnel, and no new employment opportunities are made available to absorb the resulting unemployment, it is reasonable to assume that there would be a significant exodus of Havelock's residents to other employment centers. The exodus in this example would be comparable to the one experienced in other military towns during the late 70's when major reductions in force (RIF) took place at some military facilities. Havelock's slowing in population increase during this same period was largely the result of a slight reduction in force at Cherry Point. Employment at NARF and MCAS Cherry Point and future military personnel loadings are expected to increase slightly--but steadily through the planning period.

Restated, there has to be a balance between employment opportunities, capacities of public facilities to accomodate growth, availability of safe, affordable housing and many other factors before population growth can be assured. At the present time all of those variables appear to be in proper balance. Because of that, reasonable projections of future population can be made.

Table 17 shows projections of future population by five-year periods. These projections were prepared by assuming 5 and 10 year increases slightly higher than those experienced during the 1970-1980 period, approaching the higher rate of the last five years. Counts for Havelock, MCAS Cherry Point, Township 6, and Craven County are shown for comparison purposes. Chapter II, contains an examination of population and development trends, providing a background for the following projections.

Table 17 . . . Population Projections - Havelock, Township 6, and Craven County 1985-1995

	TRENDS					PROJECTIONS		
	1980	1985	1990	No.	%	1995	No.	%
Craven County[1/]	71,043	76,955	81,296	4,341	5.6	86,610	5,314	6.5
Township 6[2/]	21,963	25,843	29,000	3,157	12.2	31,500	2,500	8.6
Havelock [2/]	4,627	8,300	11,200	3,000	36.1	13,800	2,500	22.1
MCAS Cherry Point	13,091	13,300	13,900	600	4.5	14,600	700	5.0
Total Havelock[2/]	17,718	21,600	25,200	3,600	16.7	28,400	3,200	12.7
Extraterritorial[2/]	2,523	2,500	1,800	(-700)	(-28)	1,700	(-100)	(-5.5)
Total Planning (less Cherry Point)	7,150	10,800	13,100	2,300	21.3	15,500	2,400	18.3

Source: 1980 Census of Population Projections: 1/ by NC Office of Management & Budget and 2/ by Clark Planning Services (arithmetic method discounting for projected Base population [Table 18] and adding projected annexed population.

As shown above, the County as a whole can expect an increase of 4,341 more residents within the next five years and a total of 5,314 more between 1990, and 1995; a net ten year gain of 12.5 percent.

Of the projected 9,655 ten year increase in Craven County's population, Havelock can expect, with a continued active annexation program, to gain about 4,700 in population from 8,300 in 1985, to 13,800 by 1995. Approximately 800 of the 5,500 increase in Havelock's (net MCAS Cherry Point) population is expected from annexation of existing subdivisions lying within the extraterritorial area, which shows a decrease from 2,500 to 1,700 in population occuring during the same ten year period as Havelock's city limits are extended.

Havelock's total population with MCAS Cherry Point is expected to increase from 21,500 in 1985, to 28,400 in 1995, a 6,900 increase or 32 percent. An analysis of these population changes on future development and land and community facilities demands is discussed later in this chapter.

Table 18 . . . MCAS Cherry Point Military Housing Projections
1986-2000

	YEAR			Change 86-95	
	1986	1990	1995	& %	2000
Bachelor enlisted quarters	4,078	4,800	5,500	1,422 35%	6,000
Housing for military personnel in transition	206	206	326 58%	120	326
Hostess House temporary lodging	30	30	30	0	30
Married family housing					
1 BR	114	No projections have been made			
2 BR	1,053				
3 BR	1,147				
4 BR	470				
5 BR	3				
Inactive	11				
S.Total	2,798	2,798	2,798	0	2,798
		(assumed same levels)			
Totals (units)	7,112	7,834	8,654	1,542 22%	9,154

Source: Facilities Development Department, MCAS Cherry Point, July 31, 1986.

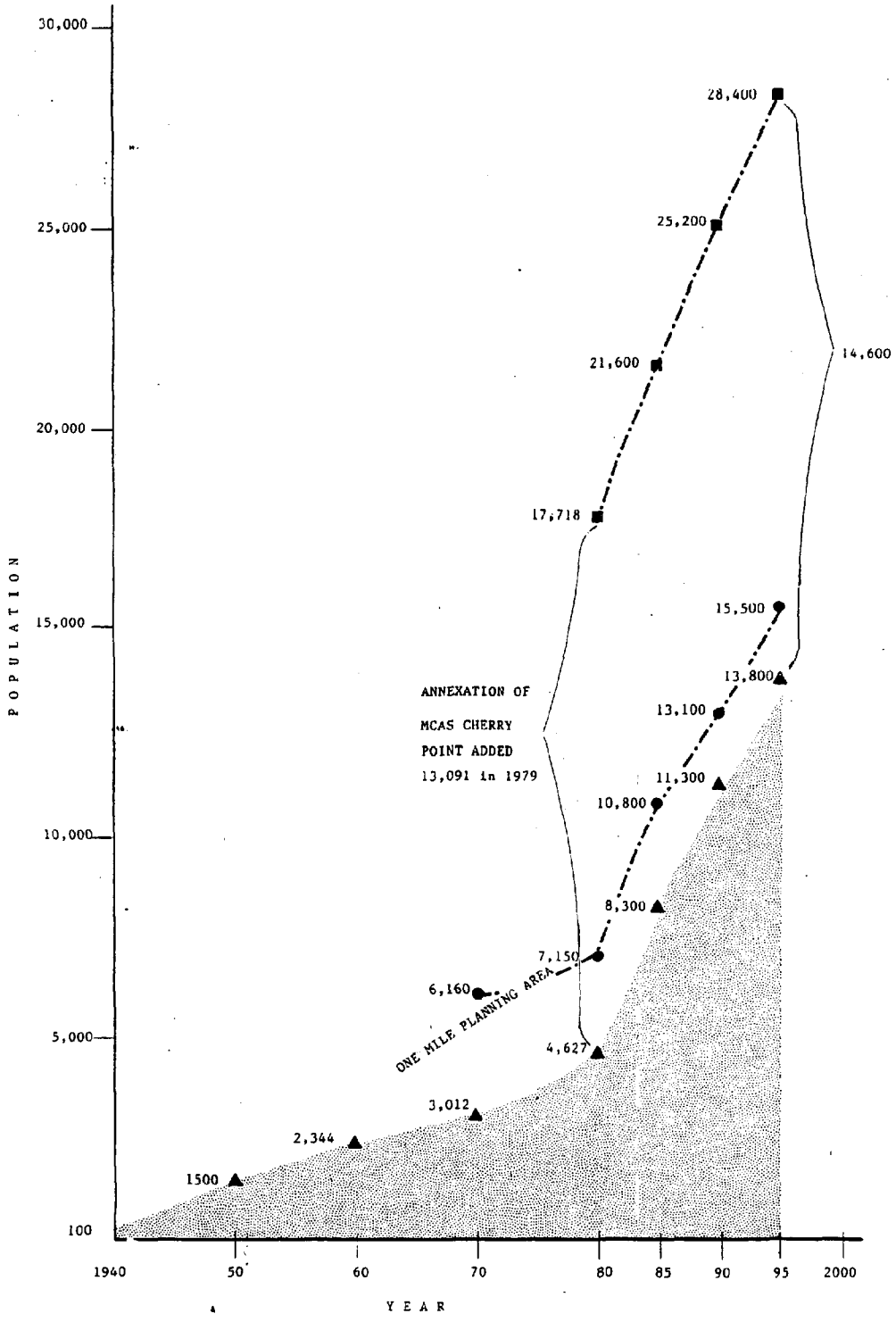


FIGURE 2 . . POPULATION TRENDS & PROJECTIONS HAVELOCK, N.C.

IMPACT OF GROWTH ON COMMUNITY DEVELOPMENT

Considering the projected growth in population and the anticipated stability and growth in the local economy, how then, will this growth take place? Where will it take place and what types of growth can Havelock reasonably expect and/or desire? An attempt to answer these questions is made in the following paragraphs.

Using the population projections shown on Table 18 and the existing land use acreages shown on Table 19 , ratios of population per acre of each land use were calculated for the City and its planning area. By assuming that these ratios will remain constant over the next ten years, they can be multiplied by the projected 1995 populations of each area, resulting in the total number of acres needed for each land use. To determine the additional number of acres which will be needed during this period, the total 1995 acreages are subtracted from those in 1986. Table 19 contains the results.

The existing land use analysis in Chapter II, indicated there are 3,071.8 acres of undeveloped land within Havelock and its planning area that has some development potential. Table 19 reveals a projected total development demand of 1,167.2 acres by the year 1995. Therefore, it appears possible to reasonably accomodate this high level of land demand without unduly needing to pressure sensitive wetlands, the Croatian National Forest, or high hazard noise and accident potential zones.

Table 19 . . . Projections of 1995 Acreages by Land Use in Havelock and its Planning Area

	1986		1995	
Land Use	Acreage	Pop/Acre[1/]	Total Acreage	Additional Acreage Needed
Residential[2/]	1270.8	8.4	1845.2	574.4
Commercial (inc. office space)	278.0	38.8	399.5	121.5
Industrial	25.0	432	35.9	10.8
Transportation, Communications & Utilities	684.8	15.8	981.0	296.2
Government & Institutional	154.6	69.9	221.7	67.1
Cultural, Entertainment, & Recreation	223.0	48.4	320.2	97.2
Total Development	2636.2	4.1	3803.5	1167.2

1/ Planning Area total populations of 10,800 estimate for January 1, 1986 and 15,500 for 1995 were used in these calculations.

2/ Residential land use acreage is net area for streets and right-of-way (approx. 25%)

TABLE 20 . . . Available platted or approved lots, units, and spaces by housing types in Havelock and its Extraterritorial Area, January 1986[1/]

Housing Type	Available lots/space: City Water/ Sewer Available	+	No Sewer	=	Total	Average Lot/ Space Size in sq. ft.	Approx Acerage
Single Family	476		156		632	14,000	235
Multi-family (Apts, Townhomes, Condos)	334		0		334	4,400	34
Mobile Homes	443		18		461	5,000	17
Totals	1,253		174		1,427		286

Note: These figures do not include MCAS Cherry Point

1/ Data estimated by compiling information from windshield survey, January 1986, and reviewing approved subdivisions and development plans on file in the Havelock Director of Inspections Office.

Existing Approved Land Capacity. Recalling that on page 44, the estimated additional population of 4,700 people (net gain not including effects of annexation), the next question arises: How many and what types of housing should be expected to be added to the existing housing stock? In order to determine an estimate an assumtion was made that average occupied household size would remain at 3.1 people. Dividing 4,700 by 3.1 equals 1,510 occupied housing units, with another 75 added at an assumed 5% vacancy rate yields 1,585 units. Again, assuming the same percentages of units in each major housing type today remains constant for the ten year period and the following numbers of single family, multi-family, and mobile home units would be expected:

	1995 est. demand
Single Family (65%) x 1585 =	1,030
Multi-Family (19%) x 1585 =	301
Mobile Homes (16%) x 1585 =	254

Then, from the above the estimated 1995, demand for new single family houses would be 1,030; an additional 301 multi-family units would be needed; and 254 more mobile homes. Where then will these projected housing units locate? Table 20, above includes data that suggests the availability of 1,253 lots or spaces that have already been approved

for City' water and sewer (approved subdivision and development plans). Another set of assumtions must be made to estimate how many of the projected housing units by type will be absorbed. An 80 percent fill up rate was assumed for single family house lots, a 90 percent fill up rate was assumed for multi-family and mobile home developments. The following projections can then be made:

		1995 on City water & sewer
Single family	(80% fill) x 476 =	381
Multi-family	(90% fill) x 334 =	300
Mobile homes	(90% fill) x 443 =	399
		1,070 total

If the above figures are subtracted from the total demand by housing type, it is possible to estimate the residual demand that will seek other available lots that do not have City sewer or developers will consider requesting additional development approvals. Below are the results:

		1995 residual demand for new developments
Single family	1,030 - 381 absorption =	649
Multi-family	301 - 300 " " =	1
Mobile homes	443 - 399 " " =	44
		694 total

The above exercise was provided as an illustration only of the possibilities that perhaps as many (or more) as 1,070 new housing units could be absorbed by existing approved developments with City water and sewer committments. The remainder, 694 would require new developments with most being of the single family variety.

CHAPTER V

DEVELOPMENT ISSUES AND POLICY STATEMENTS

INTRODUCTION

Growth management of a rapidly developing coastal community requires serious thought regarding values; including conflicting desires for growth, economic prosperity, quality of life, quality and protection of the environment. The Coastal Area Management Act places responsibility on the local governing board to see that local policies are consistent with the Act's goal of protecting valuable coastal resources.

The land use plan prepared under the Act's guidelines must address five general policy topics, which are: 1) Resource protection, 2) Resource production and management, 3) Economic and community development, 4) Continuing public participation, and 5) Storm hazard mitigation. Other issues and policies to address them may be locally determined.

The 1981 CAMA Plan included locally adopted policy statements, objectives, policy alternatives, and implementation/enforcement decisions by the City of Havelock to address subjects within each of the first four topics listed above. Each policy was re-examined during the preparation of this plan update as discussed in the following pages. Additionally, the Storm hazard mitigation policies are added to this chapter.

Table 21 (pp 52 to 56) provided to show a compilation of issues and actions taken to address them during the last 5 to 10 years. Pending or proposed actions and policies are described for upcoming years.

Issues. A total of 14 issues were identified in the first CAMA Plan. Four others were added in the 1981 Plan Update. These issues and some of the actions taken to address them are itemized in the first section of the chapter entitled "Changes." In addition 15 more issues of varying degrees of concern are added by this plan update.

Table 21 ... CHANGING ISSUES AND ACTIONS TAKEN OR PENDING TO ADDRESS THEM 1976,'81,'86

1976 CAMA PLAN Fourteen Issues	IMPLEMENTATION PROGRESS: ACTIONS TAKEN TO ADDRESS ISSUES	IMPLEMENTATION PROGRESS: PENDING OR PROPOSED ACTIONS & POLICIES
1. 90% of soils beyond sewerage system would not accept septic tanks & high demands for increasing wastewater treatment capacity and sewer line extensions must be met if growth is to occur as projected	No change in soils, but most lots in Westbrook I, and the Indian Hills II, and Marmann Terrace subdivisions have developed with septic tanks; approximately 1000 housing units connected to wastewater treatment system 1980-'85	Phase I Wastewater treatment will raise capacity from 1,000,000 to 2.25 million gallons per day by 1988 sufficient for ten year planning period
2. A desire to reduce traffic congestion of US 70	NC Department of Transportation has primary control, however: 1) city and DOT adopted Thoroughfare Plan in 1977, 2) center turn lane added from Miller Blvd. eastward, 3) cross-over turn lanes added east and west in 1986. Westwood St. is completed in 1986, and progress continues on developing McCotter Blvd.	Congestion will remain through planning period. The City is split but generally favors 70 bypass as in Thoroughfare Plan. DOT's 1986 TIP schedules right-of-way purchase for 1995. Also, MCAS Cherry Point seeks rear (West) access to 70 to reduce peak hour traffic congestion. Protection of corridors for proposed minor thoroughfares is high priority.
3. Very poor drainage in much of the city with no plan for drainage improvements & no plan for system-wide access easements for ditch maintenance	Topographic mapping and first preliminary drainage study completed in 1977. A more detailed preliminary drainage study of the McCotter Canal & drainage basin is completed in 1984, with alternative concrete and/or earth channel designs costing from $2.4 to $6.6 million. Limited easements acquired, developers required to design drainage into their subdivisions with concern for downsystem impact.	Portion of Webb Blvd. petition for closing open ditch and adding sidewalk is pending, decision of various funding methods for much of the '84 drainage study recommendations expected in planning period: 1) developer impact fees, 2) drainage basin special tax assessments, 3)bond issue, 4) and other funding sources to be considered.
4. Lack of good land for industrial development to aide in diversifying industrial jobs	Little change has occured. The new Westwood Street extension from US 70 to Belltown Rd. improves visibility and accessibility for additional manufacturing on the East side of Belltown Rd.	Additional efforts by the Committee of 100 and the Craven County Development Commission are needed together with the city and county to acquire or option property for industrial recruitment. Additional light industrial zoning in high noise areas east of Havelock along NC 101 will be considered in the planning period.
5. Incompatibility of land uses with noise and crash potential from aircraft using MCAS Cherry Point	The city adopts AICUZ Plan (1975) policies in '76 CAMA Plan, adds zoning amendments in '77; the '81 CAMA Plan Update endorses AICUZ; the 1981 AICUZ Plan Update is published substantially reducing noise impact on city but enlarging and more clearly defining accident potential zones; city incorporates changes in zoning ordinance. The Foxcroft subdivision, Bent Creek planned development, and a multi-family housing redevelopment proposal for Finney's Plaza are examples of continuing residential development pressures close to high noise or accident potential zones (APZ).	The potential for incompatible residential and recreational and other uses still exists as development pressures for these uses continue eastward toward runway 32 and in the Belltown Rd. area. Uncertainty over predicting future MCAS Cherry Point activity means the city will continue monitoring new development proposals with a conservative eye where greatest potentials for increased aircraft activities may occur. Policies directing incompatible uses away from or in promimity to noise zone 3 and APZs will continue.

Table 21 . . . CHANGING ISSUES AND ACTIONS TAKEN OR PENDING TO ADDRESS THEM 1976, '81, '86 (Continued)

1976 CAMA PLAN Fourteen Issues	IMPLEMENTATION PROGRESS: ACTIONS TAKEN TO ADDRESS ISSUES	IMPLEMENTATION PROGRESS: PENDING OR PROPOSED ACTIONS & POLICIES
6. Lack of off-station private rental housing	Overall the availability of rental housing did not improve as demand increased during the past five years. Actually, as a percentage of total housing types, mobile homes decreased from 27% to 16% between 1974 and 1986. However, between 1983 and 1986, 403 mobile home lots were approved. Multi-family housing did increase sharply during the same period from 13% to 19% of all housing, but most of this was in townhouse owner occupied housing.	MCAS Cherry Point projects an additional 1,422 bachelor enlisted quarters by 1995, with 722 of them scheduled by 1990. Some of this increase will accomodate increased personnel loadings, but it is uncertain how many units will be reduced from the local housing market. Temporary housing for military personnel in transition is expected to increase by 102 units during the planning period.
7. Strip development of U.S. 70 is a concern and possibly NC 101 where frontage roads or controlled access may be needed	The four-mile commercial strip along U.S. 70 has extended on to nearly five miles since 1976, along with in-fill and some redevelopment of older commercial sections has occured. NC 101 from the High School eastward is showing signs of commercial road frontage development. On the positive side, the Westbrook, Cherry, Plaza East, and other strip shopping centers were built with limited driveway access to U.S. 70. Signage regulations seem to have done a fair job in keeping down increased sign proliferation.	A slight extension of clustered shopping centers with limited areas is expected near the projected McCotter Boulevard intersection with East Main Street. Infill commercial and office development along Main Street will continue during the planning period. U.S. 70 bypass is not expected during the next ten years. An analysis of its projected impact on local business should be conducted
8. Not enough available land for 9 % annual increase in single-family housing construction	This rate of increase did not occur as it had in the early 70's. The '81 AICUZ Plan Update also substantially reduced the amount of high noise zone 3 restricted properties.	The analysis and projections shown in Chapter IV, estimated Growth Demand, and additional 574 acres will be needed for residential development by 1995. Most of this will be converted from unproductive vacant or barren lands.
9. There was a perceived or real lack of coordination among officials from Craven County Havelock, and Cherry Point concerning common problems (e.g., recreation, health, public safety, education, and land use planning)	The most recent Citizen Survey showed Havelock's relations with Cherry Point to be excellent compared to generally good responses to this question ten years ago. Relations with Craven County rated good to satisfactory this year and average to poor ten years earlier. The Tourism Development Board, consolidated New Bern/Craven County schools and emergency management appear to be examples of satisfactory or good coordination. However, Havelock's desire to establish more county services in Havelock in addition to main offices in New Bern have strained relations at times between the County officials and counterparts in Havelock. Except for periods when the AICUZ plan was updated, the City's jurisdiction was extended, or during hurricane readiness/emergencies these agencies have not met routinely to discuss common issues.	The 1976 CAMA Plan recommended a City-County-MCAS laison meeting on perhaps a quarterly basis to share ideas and coordinate various services and facilities planning. This and other possible forums is still recommended for the future.

Table 21 . . . CHANGING ISSUES AND ACTIONS TAKEN OR PENDING TO ADDRESS THEM 1976, '81, '86 (Continued)

1976 CAMA PLAN Fourteen Issues	IMPLEMENTATION PROGRESS: ACTIONS TAKEN TO ADDRESS ISSUES	IMPLEMENTATION PROGRESS: PENDING OR PROPOSED ACTIONS & POLICIES
10. Lack of informing people of what local government is all about	Both the 1976 and 1986 Citizen Attitude Surveys proved the value of involving the public in identifying public concerns and community planning. The process helps inform people that they are part of local government. The interviewers for the '86 survey reported that most respondents were pretty well informed about city services AICUZ, drainage problems, and a host of other local issues.	The City will undertake Citizen Attitude Surveys on a five year basis. Most respondents to the '86 attitude survey indicated they kept abreast of local government activities through the three local newspapers and radio stations. The City will continue using these forums to advise the public and welcome their participation in board and commission meetings.
11. Too much clear-cutting versus selective tree clearing as development occurs--deteriorates community appearance	During the 1986, Citizen Attitude Survey, the community appearance question resulted in many ancillary remarks regarding Havelock's "strip city" appearance. The City's Subdivision Ordinance encourages preservation of open space and existing tree cover. However, the January 1986 land use survey revealed a pattern of developers retaining more tree cover in West Havelock where natural drainage is better. More land grading in poorer drained soils in east Havelock has resulted in a loss of most of tree cover there. Nearly all trees have been cleared in advance of commercial development.	During 1987, the City will re-examine its current regulations, methods and enforcement procedures for retaining more tree cover in all development projects. Also, the City will study the costs/benefits and feasibility of requiring new vegetation and tree plantings in new commercial and subdivision developments. Both studies will be assigned to the Planning Board and Community Appearance Commission.
12. No public boat access to Slocum Creek	Public boat access to Slocum Creek has not occured. The Yaht Club still maintains a members only marina at Crystal Lake off Slocum Creek. Havelock has acquired a rather unique "fishing" and nature access for pedestrians by development of a 350' elevated wooden walkway and fishing point with parking in the Stonebridge Landing Subdivision. The nearly 5 acre wooded swamp and the monies for the improvements were acquired by the City through its subdivision ordinance requirement for land dedication or fee-in-lieu of dedication provisions.	The desire for a public boat access will remain a goal. Further on in this chapter is a discussing of policy and implementation strategies that will lead to a plan for an interconnected trail/access/park system that will hopefully increase pedestrian access to the natural and scenic waters of Slocum Creek. A funding request to Division of Coastal Management will be made for Fiscal Year 1987-'88.

Table 21 . . . CHANGING ISSUES AND ACTIONS TAKEN OR PENDING TO ADDRESS THEM 1976, '81, '86 (Continued)

1976 CAMA PLAN Fourteen Issues	IMPLEMENTATION PROGRESS: ACTIONS TAKEN TO ADDRESS ISSUES	IMPLEMENTATION PROGRESS: PENDING OR PROPOSED ACTIONS & POLICIES
13. No-use of vacant federal government open space although some of it could be used for development of housing, industry, or recreation	The former "flat-tops" military family housing between Cunningham Boulevard and Roosevelt Boulevard is largely impacted by high noise and accident potential zones from aircraft using runway 5. The City is in the process of leasing approximately 17 acres of property east of Roosevelt Boulevard for recreation. The City has constructed its new Public Safety Building and the Walter B. Jones park improvements east of City Hall on some of that vacant property.	Expansions of the City's public buildings to the east in front of Ft. Macon Village is expected during the next ten years. The City is interested in seeing the Tourism Development Authority's proposal for an Air Museum become a reality on the government property near Roosevelt Boulevard and NC 101, although this proposal is not presently compatible with the AICUZ Plan.
14. Too few landowners hold a majority of undeveloped land in the planning area (private, National Forest, (NFS), and Cherry Point)	During the past five years more private land holdings have been developed or approved for future development. Approximately 1,427 lots or spaces that have been approved are estimated to be available for development in the entire planning area. The Forest Service has not swapped any properties near Havelock in recent years. Other than the public uses mentioned in 13 above, the Cherry Point has not permitted any non-military development of its property. In 1986, the military acquired approximately 100 more acres between NC 101 and runway 32 (all within a noise zone 3).	No major changes in National Forest Service or Cherry Point land holdings are anticipated in the ten year period within Havelock's planning areas. However, several hundred acres of Croatan National Forest west of Greenfield Boulevard is recommended for land exchange between the National Forest Service and private land owners for possible housing development. Also, approximately 100 acres of NFS southeast of Shepard Street in the vicinity of McCotter Boulevard extension is proposed for exchange and development as housing and cluster commercial (see the Land Classification Map A-3).
1981 CAMA PLAN UPDATE Four More Broad Issue Categories Added		
15. Resource Protection (AEC's and Constraints)	For one example see item #12 in the above list concerning preservation of hardwood bottomland along estuarine shore in Stonebridge Landing. City looses enforcement of State provisions of Local Erosion and Sedimentation Control Ordinance, retaining control of less than acre provisions. Resulted from differences between City and State over Woodhaven Street construction through East Prong Slocum Creek.	This Plan update endorses National Forest Service forest management practices for Croatan National Forest(see subject heading in this chapter) A Flood Damage Prevention Ordinance will be passed in late 1986, increasing control of development in fragile floodplains. The City will continue supporting policies and regulations to implement AICUZ and add procedures for receiving Base comments on questionable development proposals. The update includes a Storm Hazard Mitigation, Poast-Disaster Recovery, and Evacuation Plan later in this chapter.
16. Resource Production and Management	See discussion and policies under this heading later in chapter.	City supportive of protection of forest resources in Croatan National Forest. The City will support limited land swapping per NFS policy and Land Classification Map (A-3).

Table 21 . . . CHANGING ISSUES AND ACTIONS TAKEN OR PENDING TO ADDRESS THEM 1976, '81, '86 (Continued)

17.	Economic and Community Development	Under rapid growth pressures for land and public services the City adds approximately 1000 housing units in five years. Development occurs under City's various land use regulations, but community becomes increasingly aware of constraints on land for development. Flooding from poor drainage in East Havelock increases. City funds water and sewer systems improvements to meet desired moderate growth projections.	City will continue working toward goals established in prior plans. Land Classification Map provides room to grow within existing developed areas and transition land classes. The City can accomodate public desire for moderately paced growth without adverse environmental consequences under sound land use regulations. The City will continue trend of improving "quality of life" through recreation programs, improved community appearance, efforts to reduce traffic problems, etc. See policies on these and other subjects later in this chapter.
18.	Continuing Public Participation	Normal methods of continuing public involvement through active boards, news media coverage of events, and public meetings are continued. Havelock's residents are very active in local government.	The Citizen's Attitude Survey's of 1976 and 1986, proved very helpful for good public relations and for getting issues identified and priorities established. A similar survey will be repeated in five years.

RESOURCE PROTECTION POLICIES

A. Areas of Environmental Concern

Estuarine System Categories. The first AECs discussed collectively are those water and land areas of the coast that contribute enormous economic, social, and biological values to North Carolina and Havelock as components of the estaurine system. Included within the estuarine system are the following AEC categories: estuarine waters, coastal wetlands, public trust areas, and estuarine shorelines. Each of the AECs is either geographically within the estuary or, because of its location and nature, may significantly affect the estuary. The maps accompanying this plan in the back pocket show the waters and flood plains of Slocum and Hancock Creeks: Within these areas are all of the local AEC categories.

Management Objective of the Estuarine System. After ten years of experience under the CAMA program Havelock continues to give high priority to the protection and coordinated management to estuarine waters, coastal wetlands, public trust areas, and estuarine shorelines, as an interrelated group of AECs, 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.

[1] ..... Coastal Wetlands

Coastal wetlands 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 wetlands contain some but not necessarily all, of the following marsh plant species:

1) Cord Grass (Spartina alterniflora),
2) Black Needlerush (Juncus roemerianus),
3) Glasswort(Salicornia spp.),
4) Salt Grass (Distichlis spicata),
5) Bulrush (Scriput spp.),
6) Saw Grass (Cladium jamaicense),
7) Sea Lavender (Limonium spp.),
8) Cat-tail (Typha spp.),
9) Salt Meadow Grass (Spartina patens),
10) Salt Reed Grass (Spartina cynosuroides).

Included in this definition of coastal wetlands is "such contiguous and as the Secretary of NRCD reasonably deems necessary to affect by any order in carrying out the purposes of this Section." (G.S. 113-230(a)).

In early 1986, Woodhaven Street was re-constructed on a new fill and roadbed across Joe's Branch and (West Prong of Slocum Creek). After initial construction in 1985, the road was washed out. This stream is bordered by a hardwood bottom land with a floodway and floodplain identified in the City's new Flood Insurance Maps.

House on Shore Drive. . .note smoothly filled house site and yard in flood plain of East prong Slocum Creek.

Coastal wetlands in the Havelock jurisdiction are limited to relatively small areas along the shorelines of Slocum and Tucker Creeks.

(a) Policy Objective

To give highest priority to the protection and management of coastal wetlands so as to safeguard and perpetuate their biological, social, economic and aesthetic values; to coordinate and establish a management system capable of conserving and utilizing coastal wetlands as a natural resource essential to the functioning of the entire estuarine system.

(b) Appropriate Land Uses

Suitable land uses shall be those consistent the management objective in this rule. Highest priority of use shall be allocated to the conservation of existing coastal wetlands. Second priority of coastal wetland use shall be given to those types of development activities that require water access and cannot function elsewhere.

Unacceptable land uses would include, but would not be limited to, the following examples: restaurants and businesses; residences, apartments, motels, hotels, and trailer parks; parking lots and private roads and highways; and factories. Examples of acceptable land uses may include utility easements, fishing piers, docks, and agricultural uses, such as farming and forestry drainage, as permitted under North Carolina's Dredge and Fill Act and/or applicable laws. Earlier in 1986, for instance, Havelock constructed an elevated walkway and small fishing pier in the Stonebridge Landing Subdivision through wetlands in order to provide access to Slocum Creek.

In every instance, the particular location, use, and design characteristics shall be in accord with the general use standards for coastal wetlands, estuarine waters, and public trust areas.

(c) Development Policy Alternatives

Development policy alternatives for coastal wetlands in Havelock including the following: (1) city or other public body acquisition for open space uses; (2) prohibition of private development through regulation; (3) regulated development of appropriate land uses; and (4) action by the Coastal Resources Commission to remove the AEC designation from the area.

The City has used acquisition by its Subdivision Regulation provisions for dedication of land to obtain five (5) acres of wetlands as mentioned above. The City however, may not have the opportunity to use this tool again because all of the developable portions of lands adjacent to wetlands along Slocum Creek have been subdivided and developed with the exception perhaps of a very few lots. Acquisition of some wetlands may be possible through obtaining private donation of conservation easements. The outright negotiated purchases of wetlands is not considered financially feasible by the City.

The desired alternative to accomplish the policy objective is to regulate development insuring appropriate land uses in coastal wetlands. Appropriate land uses are listed under section (b). The Land Classification Map places these areas into the "conservation" category. Havelock will also seek assistance from the N. C. Division of Parks and Recreation in methods of obtaining conservation easements for wetlands.

(d) Implementation/Enforcement

Havelock will implement and enforce the Coastal Wetlands policy objective through strict and vigorous city enforcement of AEC regulations, the City Zoning Ordinance, proposed Floodplain Regulations, and full cooperation with state and federal permitting and enforcement agencies.

[2] .....Estuarine Waters

Estuarine waters are defined in G.S. 113-A-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 the most recent 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."

Estuarine waters in Havelock are the waters of Slocum Creek, Hancock Creek, and Tucker Creeks. The waters of Tucker Creek are not bounded by lands under the city's regulatory control, however.

(a) Policy Objective

To give the highest priority to the conservtion and management of the important features of estuarine waters so as to safeguard and perpetuate their biological, social, aesthetic, and economic values; to coordinate and establish a managment system capable of conserving and utilizing estuarine waters.

(b) Use Standards

Suitable land/water uses shall be those consistent with the management objectives in this Rule. Highest priority of use shall be allocated to the conservation of estuarine waters and its vital components. Second priority of estuarine use shall be given to those types of development activities that require water access and use which cannot function elsewhere such as simple access channels; structures to prevent erosion; navigation channels; boat docks, marinas, piers, wharfs, and mooring pilings.

(c) Development Policy Alternatives

Havelock estuarine waters should be considered a most valuable public asset. Policy alternatives considered were: 1)total and complete conservation of estuarine waters, 2)limited use consistent with public

and private requirements for access under Corps 404 and CAMA permit requirements.

The City believes that protection of water quality and the natural appearance of its Creeks to be important. Some limited access for increased public use of Slocum Creek has been a continuing objective for the City. Within the ten year planning period efforts will be made to secure a public boat ramp. Conservation of estuarine waters is possible at the same time. These Creeks can be used with the value of use far out weighing any harmful effects on these waters. Appropriate uses of these areas are the uses stated in the Use Standards section (b), the City Zoning Ordinance, and proposed Flood Plain Regulations.

(d) Implementation/Enforcement

Havelock will implement and enforce the estuarine waters policy objective through strict and vigorous enforcement of AEC regulations, the City Zoning Ordiance, the below one acre provisions of the Erosion and Sedimentation Control Ordinance, and proposed Flood Plain Regulations.

In every instance, the particular location, use, and design characteristics shall be in accord with the general use standards for coastal wetlands, estuarine waters, and public trust areas.

[3] .....Public Trust Areas

Public trust areas as defined by the State of North Carolina are 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 water mark; all navigable natural bodies of water and lands thereunder to the mean highwater level or mean water level as the case may be, except privately-owned lakes to which the public has no right or access; all water in artificially created bodies of water containing significant public fishing resources or other public resources which are accessible to the public by navigation from bodies of water in which the public has rights of navigation; and all waters in artifically created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication, or any other means. In determining whether the public has acquired rights by prescription, custom, usage, dedication, or any other means. In determining whether the public has acquired rights in artificially created bodies of water, the following factors shall be considered:

(1) the use of the body of water by the public,
(2) the length of time the public has used the area,
(3) the value of public resources in the body of water,
(4) whether the public resources in the body of water are mobile to the extent that they can move into natural bodies of water,
(5) whether the creation of the artificial body of water required permission from the state, and

(6) the value of the body of water to the public for navigation from one public area to another public area.

Public Trust waters in Havelock are limited to the upper reaches of the City's Creeks. The only significant intrusion in the past five years has been the construction of Woodhaven Street across from Joe's Branch.

(a) Policy Objective

To protect public rights for navigation and recreation and to preserve and manage the public trust areas so as to safeguard and perpetuate their biological, economic and aesthetic value.

(b) Use Standards

Acceptable uses shall be those consistent with the management objectives in (c) of this Rule. In the absence of overriding public benefit, any use which significantly interferes with the public right of navigation or other public trust rights which the public may be found to have in these areas shall not be allowed. The development of navigational channels or drainage ditches, the use of bulkheads to prevent erosion, the buildings of piers, wharfs, or marinas are examples of use that may be acceptable within public trust areas, provided that such will not be deterimental to the public trust rights and the biological and physical functions of the estuary. 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 are generally considered incompatible with the management policies of public trust areas. In every instance, the particular location, use, and design characteristics shall be in accord with the general use standards for coastal wetlands, estuarine waters, and public trust areas.

(c) Development Policy Alternatives

Havelock public trust waters should be considered a valuable public asset. Policy alternatives considered where total prohibition of use and conservation of public trust waters or (2) limited use consistent with the use standards of section (b).

Havelock does not believe the first alternative to be realistic. Some of these areas may be used without violating the public trust of the waters with the use value far outweighing any harmful effect created. The second alternative is considered desirable, even with the limited size of these areas in Havelock. This was the case in 1984, when the City first constructed Woodhaven Street. The local concern for improved traffic access justified the crossing of Joe's branch. The floodway restrictions soon to be in place will further restrict development into public trust waters.

(d) Implementation/Enforcement

Havelock will implement and enforce its public trust waters policy objective through strict and vigorous enforcement of AEC regulations,

the City Zoning Ordinance, the City's (below one acre provisions of the) Erosion and Sedimentation Control Ordinance, and proposed Flood Plain Ordinance. The City will cooperate fully with state and federal permitting and enforcement agencies with jurisdiction over public trust waters by notifying effected agencies when potential development activities are proposed near these waters.

[4] .....Estuarine Shorelines

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. This area extends from the mean high water level or normal water level along the estuaries, sounds, bays, and brackish waters as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Natural Resoruces and Community development (described in regulation 0206(a) of the State Code) for a distance of 75 feet landward.

Estuarine shorelines in Havelock are generally of the wooded swamp type and are limited to the shorelines of Slocum Creek (east and west prongs) and Tucker Creek.

(a) Policy

Objective. To ensure shoreline development is compatible with both the dynamic nature of estuarine shorelines and the values of the estuarine system.

(b) Use Standards

(1) All development projects, proposals, and designs shall be to substantially preserve and not weaken or eliminate natural barriers to erosion, including, but not limited to, peat marshland, resistant clay shorelines, cypress-gum protective fringe areas adjacent to vulnerable shorelines.

(2) All development projects, proposals, and designs shall limit the construction of impervious surfaces and areas not allowing natural drainage to only so much as is necessary to adequately service the major purpose or use for which the lot is to be developed. Impervious surfaces shall not exceed 30 percent of the AEC area of the lots, unless the applicant can show that such a limitation will allow no practicable use to be made of the lot.

(3) All development projects, proposals, and designs will comply with the following mandatory standards of the North Carolina Sedimentation Pollution Control Act of 1973;

..i) All development projects, proposals, and designs shall provide for a buffer zone along the margin of the estuarine water which is sufficient to confine visible silitation within 25 percent of the buffer zone nearest the land disturbing development.

Quiet. . .
scenic neighborhoods. . .
Initial visual impressions of Havelock are not representative of the many fine residential neighborhoods found a mile or less from the U.S. 70 commercial strip. Nicely wooded, sloped lots with fine homes are the Havelock most don't see.

The Havelock few see. . . . .

Because Havelock has developed so quickly--without a master trail system and water access plan, views like this one of Slocum Creek, off the Cedar Lane area, are held privately--limiting public access.

..ii) No development project proposal or design shall permit an angle for graded slopes or fill which is greater than an angle which can be retained by vegetative cover or other adequate erosion-control devices or structures.

.iii) All development projects, proposals, and designs which involve uncovering more than one acre of land shall plant a ground cover sufficient to restrain erosion within 30 working days of completion of the grading; provided that this shall not apply to clearing land for the purpose of forming a reservoir later to be inundated.

4) Development shall not have a significant adverse impact on estuarine resources.

5) Development shall not significantly interfere with existing public rights of access to, or use of, navigable waters or public resources.

6) No major public facility shall be permitted if such facility is likely to require extraordinary public expenditures for maintenance and continued use, unless it can be shown that the public purpose served by the facility outweighs the required public expenditures for construction, maintenance, and continued use. For the purpose of this standard, "public facility" shall mean a project which is paid for in any part by public funds.

7) Development shall not cause major or irreversible damage to valuable documented historic architectural or archeological resources.

(c) Development Policy Alternatives

Development policy alternatives for Estuarine Shorelines in Havelock include the following: (1) city or public acquisition of shoreline; (2) prohibition of private development through regulation; (3) regulated development of appropriate land uses; or (4) action by the Coastal Resources Commission to remove the AEC designation from the area.

Fortunately the City has acquired the five acres of wooded swamp in the Stonebridge Landing Subdivision which borders the west shoreline of Slocum Creek. The limited access elevated wooden walk and fishing pier meanders through the natural area barely disturbing it. It serves as an example of the public's desire in Havelock to wisely use its regulatory functions to acquire a valuable natural resource for public use and without endangering the sensitive area. In 1987, the City will request assistance from the N. C. Division of Parks and Recreation to work with the City's Recreation Department in developing a plan for acquiring similar natural areas in floodplains, for the purpose of developing an integrated greenway system.

Furthermore, the City's proposed floodway regulations in the Floodplain Ordinance, Corps 404 and CAMA permit requirements will limit private development in estuarine shorelines. Removal of estuarine shorelines from designation as an AEC is not considered desirable by the City and is not viewed as a realistic alternative.

(d) Implementation/Enforcement

Havelock will implement and enforce the estuarine shoreline policy objective through strict and vigorous enforcement of AEC regulations, the city zoning ordinance, the city's below one acre provisions of the erosion and sedimentation control ordinance, and by informing state and federal regulatory agencies of pending development that may fall under their jurisdictions. As mentioned too, the city will continue its efforts to obtain public acquisition of estuarine shorelines by donation or conservation easements as part of its proposed public access/greenway program.

[5] .....Ocean Hazard Categories

The next broad grouping is composed of those AECs that are considered natural hazard areas along the Atlantic Ocean shoreline where, because of their special vulnerability to erosion or other adverse effect of sand, wind, and water, uncontrolled or incompatible development could unreasonably endanger life or property. Ocean hazard areas include beaches, frontal dunes, inlet lands, and other areas in which geologic, vegetive and soil conditions indicate a substantial possiblity of excessive erosion or flood damage.

There are no ocean hazard category AECs within the Havelock Planning Area.

[6] .....Public Water Supply Categories

The third broad grouping of AECs includes valuable small surface water supply watersheds and public water supply well fields.

There are no identified Public Water Supply category AECs within the Havelock Planning Area.

[7] .....General

The fourth and final group AECs is gathered under the heading of fragile natural and cultural resources areas that are defined as areas containing environmental, natural or cultural resources of more than local significance in which uncontrolled or incompatible development could result in major or irreversible damage to natural systems or cultural resources, scientific, educational, or associative values, or aesthetic qualities.

There are fragile natural areas within Havelock's jurisdiction containing remnant species of animals. Within the Croatan National Forest and in the remaining bottom land hardwood swamps of Slocum Creek and Hancock Creek there exist three threatened or endangered animal species. The red-cockaded woodpecker, American alligator, and potentially the Neuse River

waterdog could be threatened by development in wooded bottomland or by insensitive tree management programs.

The Land and Resource Management Plan Croatan and Uwharrie National Forests 1986-2000 has designated three management areas for National Forest lands within Havelock's planning area as described in Chapter II, p. 22-23. All these area management programs provide long term protection of wildlife resources and maintenance of areas for remanant species.

In the 1976 CAMA Plan, Havelock designated potential areas of environmental concern including those listed in the preceding pages and the category of fragile environments containing remanant species of animals and plants (DCA, pp. 106-109). However, in the 1981 CAMA Plan update this category of locally significant AEC was overlooked, although essentially areas with remnant species are contained within the 100 year flood plain area which are covered by conservation policies adopted under other AEC categories (i.e., estuarine waters, shorelines, wetlands, etc.).

(a) Development Policy Alternatives

Alternative development policies considered by Havelock relating to natural areas within the Croatan National Forest likely to contain remanant species include: (1) placing some, none, or all three management areas into a "conservation" classification thereby indicating to the Natural Forest Service what Havelock's desires are for these lands; (2) adopting no conservation or development recommendations for Natural Forest lands because federal law permits local policy or regulation,

A majority of those residents responding to the opinion survey in February 1986, indicated a preference that more of the Croatan National Forest should not be sold for development. Conflicting desires, were expressed by the same respondents toward efforts by the N. C. Department of Transportation and Havelock to see U.S. 70 bypass built, much of which, would cut through more of the Natural Forest's lands. The City has seriously weighted both desires and decided to continue seeking plans to develop the bypass, but supports the mandatory requirement for a complete "environmental impact" assessment of the impact of such facility on areas that may sustain remnant species and other wildlife resources.

However, during the ten year planning period Havelock does not feel the U.S. 70 bypass will be developed. The City of Havelock has adopted the following policy statements regarding Fragile Natural Areas within the city's planning jurisdiction: (1) the Land Classification Map will reflect a conservation category for undeveloped hardwood bottom lands located within the 100 year flood plain and Croatan Management areas 3 and 5, located southeast and southwest of Havelock. Approximately 150 acres of NFS lands adjacent to Greenfield Boulevard, outside of Floodplain areas, and close to the proposed routing of the U.S. 70 bypass are shown in "transition" on the Land Classification Map.

[8] .....Constraints to Development

Constraints to development are discussed in Chapter III of this plan. The following are the Havelock policies on resource protection in these areas.

1) Man-Made Hazard Areas. The major man-made hazards effecting Havelock are aircraft using the MCAS Air Station at Cherry Point. The Air Installations Compatible Use Zone (AICUZ) program developed for the air station by the U.S. Department of Defense, identifies noise and accident potential zones over Cherry Point and the surrounding country side that result from military air traffic. The Constraints to Development Map (A-1), contained in the back pocket, illustrates the 1981 AICUZ Plan Update plus several recent flight patterns added to the foot print. Copies of the plan may be seen at the public library and City Hall.

(a) Policy Objective

Havelock will continue supporting the use of Cherry Point by the Marine Corps and implementing and enforcing the (APZ) and Noise Zone 3 land use restrictions of the AICUZ study.

(b) Appropriate Uses

The AICUZ study provides a land use compatibility matrix which provides a listing of appropriate and conflicting land uses recommended for each category of noise and APZ under the following ratings judged by density of population, type and density of structures and height restrictions:

No New Development - The land use and related structures are not compatible and should be prohibited.

Restricted New Development - The land use and related structures are generally compatible; however, some special factors should be considered.

No Restrictions - The land use and related structures are compatible without restrictions and should be considered.

In 1983 (see Chapter II, p.25), the City expressed its continuing support for the AICUZ plan by adopting amendments to the City Zoning Ordinance incorporating Noise Zone 3 and APZ restrictions on land use.

(c) Development Policy Alternatives

Because of the vital importance to Havelock that Cherry Point plays, the only acceptable alternative development policy for this man-made hazard is to support the AICUZ plan, enforce the Zoning Ordinance provisions

restricting certain land acres within hazard areas, and refrain from allowing incompatible development to occur that may jeopardize the military's ability to continue its various missions without placing Havelock's citizens in unnecessarily hazardous living/working conditions.

(d) Implementation/Enforcement

The City will implement and enforce this policy objective through enforcement of zoning and subdivision regulations, and by requesting assistance from the Base Commander when development proposals are made that may be in conflict with the AICUZ plan.

2) Natural Hazard Areas. The most significant potential natural hazard to life and property in Havelock are high winds and flooding caused by hurricanes. The last section of the chapter contains the storm hazard mitigation, post-disaster recovery and evacuation plans and policies as have been identified and adopted for Havelock.

(a) Excessive Erosion Areas: Estuarine and River Erodible Areas Policy Objectives. The 1981 CAMA Plan update (p.82) suggested that excessive erosion was a natural hazard in Havelock. Estuarine shorelines and floodways alongSlocum Creek from Cedar Creek Drive and up both East and West Prongs of Slocum Creek are subject to erosion, especially if marsh and hardwood bottom lands are cleared. These areas then become unstable and subject to excessive scour. Policies and regulations described under prior sections concerning these shorelines should provide adequate protections to properties along these creeks. No additional policy alternatives were considered.

(b) Coastal Floodplains Policy Objective. The City anticipates adopting a Flood Damage Prevention Ordinance (floodplain ordinance) before 1987, this following along awaited and delayed publication of flood insurance and floodway boundary maps which only became available during the past year.

(c) Development Policy Alternatives. The City could consider not adopting a floodplain ordinance and not participating in the National Flood Insurance Program. This was not considered a reasonable alternative because the City desires to allow flood insurance to be made available within Havelock's jurisdiction and Havelock considers it important to limit the types of development in floodplains that may otherwise create greater risks to life and property if not regulated.

(d) Implementation/Enforcement. The City's Director of Inspections will be assigned the responsibilities for enforcing the Floodplain Ordinance.

3) Other Hazardous or Fragile Land Areas.

(a) Water Supply Sources. A majority of respondents to the February 1986, opinion survey felt the city's drinking water was very poor tasting and frequently "muddy" looking, which is a treatment and delivery issue. Chapter III includes a description of proposed Phase I improvements to the water system and recommendations that may improve the drinking water.

Havelock's potable water supply comes exclusively from the Yorktown Formation, an acquifer of Miocene sands and limestone. The groundwater is pumped from deep wells and then filtered and treated at the Lynnwayne Circle water treatment plant to remove iron and other disolved minerals. Overlaying the fully charged Yorktown Formation are generally flat sandy coastal soils with excess water for recharge purposes. Excess water seeps into streams, ponds at the surface, evaporates, or transpires through vegetation. The City will continue supporting state and federal regulations designed to protect groundwater supplies. The City's Water Department will continue providing responsible state agencies water samples for testing and data on volumes of water pumped.

The City of Havelock recognizes that surface water contamination may, over time, adversely effect the quality of deeper ground water supplies. Therefore, the City supports efforts of the Neuse River Foundation, Inc. and the Division of Environmental Management in there efforts to reduce sedimentation, phosphates, and nitrification of surface waters in the Neuse River and its watershed.

(b) Unique Coastal Geologic Formations. No geologically important sites are known to exist in the Havelock vicinity. A policy statement on the subject is not warranted.

(c) Significant Historic, Architectural, & Archaeological Resources. There is perhaps one potentially significant archaeological site in Havelock. It is a Civil War bunker located near the Atlantic and East Carolina Railroad tracts. The site has reportedly been disturbed and will likely not merit an arcaeolgical investigation.

A few structures were identified as having potential architectural significance by Peter Sanbeck of the North Carolina Department of Cultural Resources during an inventory of Craven County conducted in 1980. The Havelock Community Appearance Commission will be asked to study the best means of protecting any such structures during their 1987, program of work; and to report their findings to the Board of Commissioners.

(d) Stormwater Runoff. The City of Havelock is aware of the State Division of Environmental Management's concerns that stormwater runoff from urban development may very well be adversely effecting water quality in Slocum Creek and the estuarine water system although this issue has not been a major local issue. The City does recognize and support efforts by the State, Neuse River Foundation, Inc., and the U.S. Soil Conservation Service to encourage wise land use practices to reduce sedimentation and and other pollutants caused by land disturbing activities and intensive development of impervious surfaces which increase runoff.

The City will continue to enforce its Subdivision Regulations, and coordinate enforcement of Erosion and Sedimentation Control with NRCD, and adopt a Flood Damage Prevention Ordinance in order to reduce water pollution from stormwater runoff in new development. The City's Director of Inspections will continue requiring contractors to seed new lots under the City's Standard Design Criteria and those provisions of

the City's Erosion and Sedimentation Control Ordinance that regulate land disturbing activites in addition to the State's enforcement limits.

Some coastal communities have adopted stormwater management plans to limit the rate of stormwater runoff to no greater than those rates existing prior to development. Because of concern for keeping new development from increasing drainage "downstream" to levels that will not cause increased localized flooding, the Planning Board and City Board of Commissioners have been requiring developers of new subdivisions to provide hydrologic information prior to plan approvals under the City's Subdivision Ordinance.

The McCotter Canal Preliminary Drainage Study (Stewart, 1984) did not include an evaluation of potential increased runoff effects on water quality in receiving waters.

In 1987-88 the City will seek assistance from the State to include such an analysis in any final drainage planning. This will include serious thought toward amending the Subdivision Regulations, Standard Design Criteria, and/or Zoning Ordinance to include: (1) standards for vegetative buffers; (2) minimize impervious areas; and (3) maximize grassed swales along new subdivision streets.

RESOURCE PRODUCTION AND MANAGEMENT

The importance of agriculture, forestry, mining and commercial fishing are discussed in the data analysis section of this plan. The 1976 CAMA Plan and the '81 update included discussions of sound managment of the above resources to the City and Craven County. The City of Havelock policy with respect to natural resource production and management recognizes the close relationship between the City policies and the economic dependence of many county residents on the land and water resources of the area.

[1] .....Recreation

Havelock is located in an area with many natural resources which are valuable for recreational purposes. Most noteable are the Neuse River, the natural and man made recreation facilities at Cherry Point and the resources of Croatan National Forest. Perhaps equally important to city residents are the programs of the Havelock recreation Department which utilize city resources and facilities.

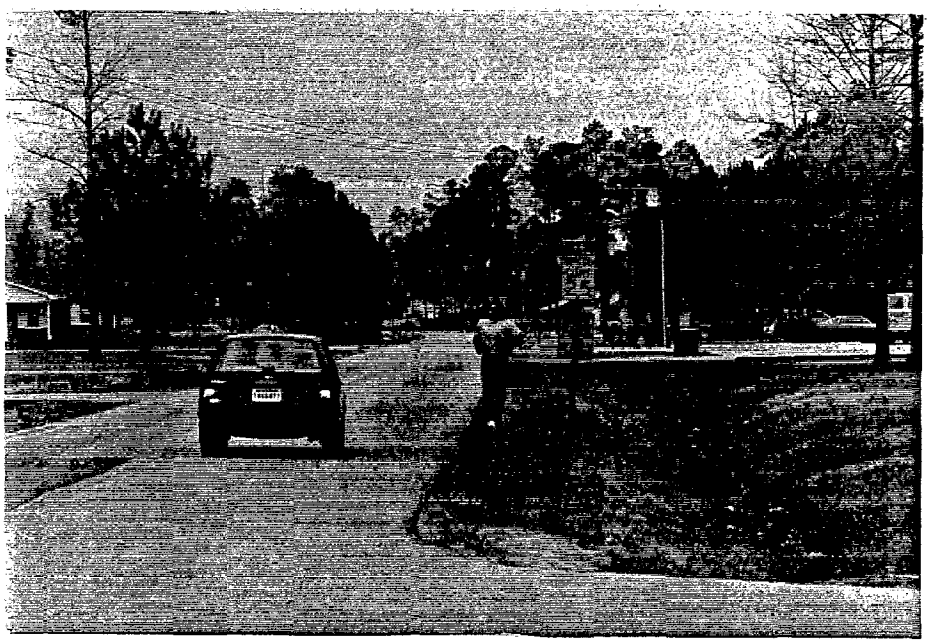
The City has expanded its recreation lands and facilities in the past five years through use of mandatory dedication of land or fee in lieu of dedication within the new subdivision development.

Serman's Park a 3.3 acre neighborhood park located north of McCotter Boulevard in Castle Downs subdivision and the 4.48 acre site in Stonebridge Landing used as a natural preserve with fishing pier both serve as contrasting examples of recreation land uses made possible through the mandatory recreation dedication provisions.

The new Walter B. Jones Park funded in part through a Land and Water Conservation Grant off Hatteras and Atlantic Avenues was developed on former government

Slocum Creek access opportunity. . .

Several undeveloped, generally steep sloped and wooded lots, may be found fronting on public streets and touching smaller streams leading to Slocum Creek. The one above, for instance, off Bristol Lane provides an excellent opportunity for improved pedestrian trails. Public purchase of these parcels or donation of perpetual conservation easements for greenway system development is suggested. The Westbrook, Ketner Heights, and Stonebridge Landing vicinity offer Havelock's best but dwindling opportunity for a beautifully linked system of hiking, jogging, and nature trails.



Residents along Webb Boulevard and other throughfares have expressed their desires for wide sidewalks and bike trails. A city-wide trail-park or greenway plan is proposed as a start at developing such a system.

housing land across from the new Public Safety Building.

(a) Policy Objective.

In addition to the continuing successful development of community and neighborhood parks, three other recreation needs were identified for agressive development in the planning period: (1) acquire a public boat access ramp to Slocum Creek; (2) build a multi-purpose recreation complex as recommended by the Recreation Department and Advisory Board; and (3) prepare a plan to develop an integrated trailpark or green way system to interconnect various neighborhoods with recreational facilities and provide access to natural areas.

Havelock supports recreation through preservation of the surrounding natural resources and the programs, facilities and activities of the Havelock Recreation Department.

(b) Policy Alternatives.

Havelock recognizes the importance of recreation for city citizens. The city financially supports the programs of the City Recreation Department to the fullest extent possible. The city is aware of its responsibility in the area of recreation and has attempted and will continue in the future to provide recreation programs, facilities, etc., for city residents.

(c) Implementation/Enforcement.

Havelock will implement and enforce the recreation policy objective through the City Recreation Department, Advisory Board, and by enforcement of the Subdivision Regulations. Also, in 1987, the Recreation Department will seek assistance from the N. C. Department of Parks and Recreation in means of planning a greenway system or trail park system for Havelock.

The City also, endorses the National Forest Services recreation plans and land management programs for the Croatan National Forest.

The City Recreation Department should be consulted for more information concerning specific recreation policies and programs.

[2] .....Productive Agricultural Lands.

There were no farming activities noted within Havelock's planning area during the 1986 land use survey. The City of Havelock does not believe a policy addressing productive agricultural lands is necessary at this time.

[3] .....Forestry

(a) Policy Objective.

Lands in forestry management within Croatan National Forest and located in Havelock's planning jurisdiction are important natural resources. The City supports careful management of forestry lands as practiced by the

The winding elevated wood walkway affords the lucky visitors of Havelock's newest public fishing pier a rare opportunity to find nature. The 5 acre wooded swamp is full of song birds and plant life. This is an excellent example of far sighted Recreation Department and Planning Board in obtaining land donation by the subdivision's developer under the City's Subdivision Ordinance, that requires parks/recreation land dedication or fees in lieu of dedication. Furthermore, CAMA permits and U.S. Army Corps of Engineers regulations were instrumental in helping maintain this area as a natural conservatory. The access trail and elevated ramps also provide easy access to the handicapped to an otherwise unaccessible scenic area.

Public fishing pier provides rare access to the water. The West Prong of Slocum Creek can now be reached via a 350 foot long elevated wood trail located in Stonebridge Landing.

National Forest Service which do not substantially harm the environment. The City also supports the National Forest Services' policy of land swaping to consolidate holdings when it is practical to obtain: (1) right-of-way for U.S. 70 bypass, (2) those lands for future development southeast of U.S. 70 near the projected extension of McCotter Boulevard, and (3) well drained less restrictive soils for housing development northwest of Greenfield Boulevard.

(b) Appropriate Uses.

Proven forestry management practices which are environmentally safe or any use proven to meet the policy objective.

(c) Development Policy Alternatives.

Basic alternatives considered were: 1) urge the Forestry Service to give up more land for development; 2) permit unrestricted development or use through a no control policy; or 3) encourage development only where the overall housing or economic conditions of the city can be shown to directly benefit; or 4) preserve all of the existing NFS land holdings. The city believes a combination of alternatives 1, 3, and 4 are appropriate to insure the least interference with a valuable resource and meet the needs of the City to expand a little.

(d) Implementation/Enforcement.

The policy objective will be implemented and enforced by the City Planning Board using the existing City Subdivision and Zoning Ordinances and the Land Classification Map.

[4] .....Mining

There continue to be no areas within the Havelock Planning Area with the potential for creating any type of mining activity. The City of Havelock does not believe a policy addressing mining is necessary at this time.

[5] .....Commercial Fishing

The City of Havelock does not believe a policy addressing commercial fishing is necessary because there are no commercial fishing operations of any type located within the Planning Area.

[6] .....Off-Road Vehicles

There are no areas within the Havelock Planning Area (except the Croatan National Forest) where public use of off-road vehicles occur with any frequency. The city does not believe a policy addressing off-road vehicles is necessary or required at this time.

ECONOMIC AND COMMUNITY DEVELOPMENT POLICIES

In 1976 Havelock Land Use Plan and 1981 update lists the following as goals of the City of Havelock.

General Goals

Six general development goals for the Havelock area were still considered appropriate by the City Board of Commissioners. These general goals form the basic community development policy objectives for the next ten years:

1) To provide a harmonious living environment which is safe, healthy, and attractive--not only to those so choosing to live here, but for those passing through as well;
2) To expand the employment base from that of a "one industry town" so that opportunities for employment will be available for all who seek them;
3) To promote development (residential, commercial, industrial, and recreational) that is compatible with the noise and crash hazards which result from the normal aircraft operations of Cherry Point Marine Corps Air Station;
4) To provide wide ranged educational, cultural, and recreational opportunities to meet the needs of all of the community's residents through a cooperative program of public and private investment of time and money;
5) To preserve the qualities of the natural environment which make the area attractive as a place to live and visit;
6) To provide public services and facilities to meet the needs of the people in a timely, efficient, and orderly manner.

Table 22, located toward the beginning of this chapter summarizes efforts made by Havelock during the past to reach these goals.

[1] ..... Moderate Urban Growth Desired.

Both the 1986 and 1976 opinion surveys indicated residents desired to see guided moderate growth for the future. They were concerned with protecting the environment, allowing growth to keep pace with Havelock's ability to provide services, and in such a way that traffic and poor drainage problems would not increase.

Necessarily, with outward city growth generally restricted by the various constraints shown on the Constraints to Development Map (A-2), one might question whether there is adequate room available and services necessary to meet demands described in Chapter IV. From the analysis of vacant land and the projected ability of Havelock to "reasonably" keep pace with the projected ten year development, the existing planning area can accomodate the desired and projected growth.

[2] ..... Commitment to Providing Services to Development.

The City of Havelock is committed and capable to provide the necessary public services required to meet the ten year projected growth demand.

The costs for this development are to be shared to some extent by the City; but are largely to be met by developers and new residents or businesses that will be required to provide all internal public facilities and contribute "impact" or service fees too. In addition to current fees charged to developers for water, sewer, recreation and (land) services, the City will consider impact fees for drainage improvements.

[3] .....Redevelopment Policies.

There are no areas of Havelock which currently requires major redevelopment. Havelock is a relatively new City and with the possible exception of only a few isolated buildings. No major redevelopment activities are anticipated in Havelock during the planning period. Redevelopment or remodeling of specific structures will of course be encouraged within the permitted uses of the city zoning ordinance. The City currently does not desire to participate in publicly sponsored housing rehabilitation programs.

[4] .....Commitment to State and Federal Programs.

Havelock is generally supportive of state and federal programs including eroison control, public water access, highway improvements, and construction, port facilities, dredging, military facilities, recreation, etc. There are no federal or state programs with exception of those located at Cherry Point which, at present create either overriding interest or concerns in Havelock. The City is basically supportive of all Cherry Point activities and recognizes the fact that without the base Havelock would not exist as it does today. The City is willing to commit resources to specific proejcts individually provided funds are available and the best interests of the city will be served. The city is an active member of the Neuse River COG and reviews all state and federal projects included under the A-95 Project Notification and Review System. All official comments are directed through the City Administrator's Office.

[5] .....Assistance to Channel Maintenance and Beach Nourishment.

Havelock supports necessary channel maintenance and shoreline nourishment projects provided the benefits gained can be proven to be greater than the resulting cost whether financial or to the environment. In Havelock, Slocum, and Tucker Creeks, are the only waters. The city will generally support any projects or programs which will improve the public accessibility or use potential of these creeks, provided environmental hazards are not overriding concerns.

The City supports the Corps of Engineers' programs to maintain and improve existing waterways as an avenue of commercial and recreational traffic. Given the economic importance of the waterway, there is no real alternative to this positon. The city does not believe it should provide direct financial assistance to State agencies in maintaining adequate channels in the Havelock area. However, the city will assist, if requested, in obtaining easements for work and in identifying sites for "borrow" material and for deposition of "spoil" material. The city cannot provide funding for these projects at present.

Utility easements make possible trails. . .

Neighborhood children and adults have already created "informal" trails along this CP&L electric power line easement that stretches from the Lynwayne Circle area to Manchester Drive in Westbrook Subdivision, crossing through Stonebridge Landing and Ketner Heights. Formal creation and improvement of a trail along this corridor should be considered along with feeder trails connecting to points accessing scenic nature trails along Slocum Tucker Creeks should be a priority item in a master trail-park recreation plan. Additional encroachment agreements, trail preparation, signage, and maintenance programs would be necessary elements. Raleigh, N.C.'s Greenway System is a model.

[6] .....Energy Facility Siting and Development.

Havelock has no specific policy on energy facility siting or development at this time. The City is generally opposed to developing or locating of any major energy facility within the Havelock Planning Area. The City's Zoning Ordinance doesn't permit such a facility. The City does not believe a facility can be located on available land which will not be an extreme hazard to the surrounding developed area.

The City reserves the right to and will comment on the locating of any proposed energy facility but only after extensive review of benefits and accompanying hazards.

[7] .....Tourism, Beach, and Waterfront Access.

Havelock does not receive substantial economic benefit from tourism. Most traffic either leaving or going to the beaches and tourist areas of Carteret County does not see Havelock as a major tourist area. Some commuter trade is generated seasonably by through beach traffic.

During the next five years the Craven County Tourism Development Authority and City will continue efforts to develop an air museum in Havelock. In addition, the Recreation Department will consider adding a line item in the 1987-88 budget request for 50 percent matching funds for either a Land and Water Conservation Fund grant or CAMA grant to help the City acquire a site for developing a public boat access to Slocum Creek.

[8] .....Strip Commercial Development.

Havelock's Main Street is a case study in the development and maturing of a strip commercial business district. In a way though, for most of its four to five mile length, Main Street is not an ugly hodge-podge of driveways, billoards, signs, solid asphalt. Yes, it does have some of these characteristics, but by far not as many as Bragg Boulevard in Fayetteville or U.S. 17 in Jacksonville, North Carolina.

Havelock has adopted and enforced special exception regulations in the Zoning Ordinance that allows the Planning Board to review developers' site plans for many highway commercial businesses, enabling the City to obtain better planned parking lots, landscaped areas, screening fences between businesses and houses to the rear, and intergrated driveways. Also, the City has a sign ordinance limiting the size and placement of on-premise and off-premise signs. Unfortunately, there is still somewhat of a sign jungle appearance about the area and portable signs seem to be everywhere.

Additionally, the Appearance Commission's influence can be seen with less junk scattered about than ten years ago.

Havelock's residents and officials want to continue efforts to improve the image of the Main Street area. The City has through its Zoning Ordinance and the Land Classification Map (A-3) limited the amount of new acreage permitted to develop commercially along Miller Blvd., McCotter Blvd, N.C. 101, and other collector streets. This policy will continue.

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

Severe hazards from hurricanes are a real possibility throughout the Coastal Plain and Outer Banks of North Carolina. Hurricane Gloria for instance, potentially a major category hurricane, came so close to land falling directly on Craven County in October 1985, that serious damage from wind and flooding could have occured even in Havelock which is more protected than many other coastal communities lying closer to the sounds and ocean. The evacuation planning and coordination of personnel from Cherry Point, Craven County, Havelock, and other neighboring communities were put to a "test run" under the Craven County Hurricane Evacuation, Hazard Mitigation and Post Disaster Reconstruction Plan (1984). Overall the corresponding emergency operations centers coordinated shelter set-ups, communications, and personnel assignments fairly well.

Significant amounts of traffic from evacuations of Carteret County -- passing through Havelcok via U.S. 70 and N.C. 101 did cause major traffic congestion locally, localized power outages occured along with some wind damage. Gloria was a close call--not a major disaster. But because of the high probability that more damage and calamity could occur, local governments are required to prepare several documents in advance of major storms so that loss of life and property may be kept at a minimum and that damage from high water and strong winds can be repaired or reconstructed in a timely and proper manner following the disaster.

In the excellent text on the subject, Before the Storm: Managing Development to Reduce Hurricane Damages, McElyea, Brower, & Godschalk, 1982, these four documents are recommended:

I. a hazard mitigation plan;
II. a reconstruction plan;
III. ordinances and resolutions dealing with hazard mitigation and reconstruction;
IV. detailed and accurate property information.

This section of the 1986 CAMA Land Use Plan Update is provided to assist the City of Havelock in developing policies, plans and information in line with the above basic documents in order to manage development in areas subject to damage from future hurricanes. The 1981 CAMA Plan Update (p.87) addressed some of the necessary policies related to civil preparedness and evacuation planning, but not mitigation and post recovery planning.

1. The hazard mitigation plan identifies hazard areas in the community, the susceptibility to property damages and what actions will be taken following disaster. It provides. . ."the foundation for how reconstruction takes place. . ." (McElyea, Brower, & Godschalk, pp. 7-36).

2. Personnel responsibilities and procedures for assessing damages and permitting repairs and re-construction are identified in the reconstruction plan.

3. Putting as many policies, procedures, and regulations in effect before a major disaster is good insurance. It reduces confusion that would otherwise occur following a disaster.

4. Finally, because documentation of losses for disaster relief must be accomplished promptly and in proper detail following disasters the local government should have good property maps and details of ownership and property value information readily available. These things will assist the assessment team in documenting losses.

The City has adopted, by reference, the applicable policies and procedures detailed in the Craven County Hurricane Evacuation Plan. It provides guidance for coordinated evacuation communications, operations, shelter set-up and so on for the Cherry Point-Havelock area. Emergency preparedness activities are provided at Cherry Point through a "team" of department directors and coordinated by the Disaster Control Officer, who also serves as a laison with local officials. The Craven County Fire Marshall serves as the Craven County Emergency Management Coordinator with offices and the Operations Center located in New Bern. Havelock's operations's center is the Public Safety Building.

[1] .....Storm Hazard Mitigation Plan

(a) Hazard causes and potential damages. There are four potential causes of property damages and fatalities associated with hurricanes that are briefly discussed here:

1. Flooding;
2. high winds;
3. wave action;
4. erosion.

1. Flooding. According to a statement on page 4 of the preliminary Flood Insurance Study published for the City of Havelcok (September 23, 1985):

> "The dominant source of flooding in the City of Havelock is storm surge and riverine flooding. Storm surge. . .propogates (effects) . . .Slocum Creek, Southwest Prong Slocum Creek, and Hancock Creek; riverine flooding from heavy rainfall occurs on East Prong Slocum Creek and Tributary (Joe's Branch), Southwest Prong Slocum Creek, and Tucker Creek."

Not everyone in Havelock would necessarily agree with the above statement if asked where flooding problems are likely to occur following locally heavy rains. An extremely flat terrain, high ground water table, and a poor drainage system combine to cause localized "flooding" in east Havelock, especially from Main Street to McCotter Canal following heavy rains. Flooded streets, yards, and wet carpeting on first floors of some houses is not uncommon. Rains associated with a hurricane can cause flooding that doesn't show up in the Flood Insurance Study.

Nonetheless, Floodway Boundary Maps depicting floodways, Flood Insurance Rate Maps depicting the 100 year flood limits for local creeks, and special storm hazard (SLOSH) maps published by the Department of the Army, Corps of Engineers were examined to determine the extent of existing development that would be effected by storm surges and riverine flooding associated with hurricanes. All boundaries were transferred to the Constraints to Development Map (A-2). Fortunately for most of Havelock and its extraterritorial area, the storm surge is limited to the floodways and existing channels which effect relatively few buildings. Table 22 indicates the number and types of structures effected by flood hazards in Havelock.

Table 22 . . . Structures effected by Flood Hazards
Havelock, NC

Stream Name	Flood Zone & Elevation*	Structure Type	Number	Est. $ Value**
Southwest Prong Slocum Creek	A	Mobile Homes	16	$160,000
Slocum Creek	A-5 9'			
Crystal Lake Area	A 9'	Houses	9	$720,000
		Commercial	2	$ 80,000
Cedar Creek Dr.	A 9'	Houses	2	$160,000
Shore Drive	A 9'	Houses	1	$ 70,000
Lynnwayne Circle	A 9'	Houses	3	$ 50,000
		Mobile homes	4	$ 32,000
Totals			37	$1,272,000

* Base flood evelvation or 100-Year flood in feet above mean sea level
** Estimated real and personal property values by Clark Planning Services

Source: Clark Planning Services, based on examination of 1"=100' topographic maps with two foot contours, Townes, Edwards & Fisher, P.A. Morehead City, NC (March 23, 1977); Preliminary Flood Insurance Study Firm and Floodway Maps, SLOSH maps showing Hurricane Hazard Areas subject to flooding, and land use survey January, 1986. All maps are on file at the Havelock Public Works Department.

These Special Flood Hazard Areas are further defined as, A5 and A6 insurance zones within the 100-year flood plain.

2. High winds. Hurricanes vary greatly in sustained wind speeds, from a minimum of 73 miles per hour to extremes of 165 miles per hour with wind gusts up to 200 miles per hour. An extreme hurricane would do signficant damage if full force winds hit Havelock. . .causing uprooted trees, major damage to buildings, overturning mobile homes, down powerlines, etc. to 100% of the Havelock area. Well constructed, wind resistant buildings fare best under such conditions.

3. Wave action. Wind-driven water and associated wave action may effect limited estuarine shorelines in Havelock. Effected shorelines are essentially those described in the Flood Insurance Study as A-5 and A-6 zones where flooding would occur up to 9 feet above mean sea level near the more open widths, of Slocum Creek and West and East Prongs of Slocum Creek up to the culverts at Main Street. Note, however, the following statement from the Flood Insurance Study:

> "No wind wave analyses were performed for the City of Havelock. Wave height analyses were not performed in the study area because it was determined that it would be unlikely that the 100-year wave height would occur coincident with the 100-year surge elevation. In accordance with the current FEMA guidelines, it is recognized that wave hazards which may exist in certain areas will not be reflected in the study or maps." (p.13).

Although the analysis was not performed, the limited potential wave action accompanying a 100-year storm surge could effect eleven houses, the yacht club, and a metal contractor's building located in the A-5 flood zones on the eastern exposed shorelines of Slocum Creek (see table 22) from Cedar Creek Drive to the Riverside Drive area.

4. Erosion. Very little bulk heading has been done in along Slocum Creek in Havelock where some erosion may occur. Because of the limited exposure of property in Havelock to wave action, erosion is not a significant hazard.

Summary. In conclusion it has been suggested that perhaps all of Havelock's buildings could suffer some damage from major hurricane winds. Such an effect would necessarily require a "direct hit", which is not as likely as a "close passage" where less damage would occur.

Unlike much of Coastal North Carolina, Havelock's higher elevations and limited flood plains along its estuarine waters (where little development has occurred) means that flooding in those areas would directly effect less than one (1) percent of the City's buildings with a estimated value of $207,000.00.

Wave action associated with flooding and storm surge could potentially effect a maximum of eleven of these buildings. Little if any damage would be associated with erosion along Havelock's estuarine shorelines.

Table 23 summarizes the estimated number, percentage, and value of the City's total structures that may be effected in various hazard areas in the most severe hurricane conditions.

Table 23. . .Structures in Hazard Areas effected by Major Hurricanes, Havelock NC*

	Residential		Commercial		Damage Values (in thousands of Dollars*)
	No.	%	No.	%	
1.High winds	2500	100%	150	100%	$207,200.0
2.Flooding	35	1.4%	2	1.3%	$ 1,272.0
3.Wave action	11	0.4%	2	1.3%	$ 960.0
4.Erosion	-	-	-	-	-

*Estimated as real and personal property values. June 30, 1986, total City of Havelock valuation for real and personal property was $207,200.00.

Source: Clark Planning Services, based on examination of 1"=100' topographic maps, with two foot contours, Townes, Edwards & Fisher, P.A., Morehead City, NC (March 23, 1977); Preliminary Flood Insurance Study Firm and Floodway Maps, and land use survey January, 1986. All maps are on file at the Havelock Public Works Department.

The estimates of damage from various hazards are provided to give an "indication" of potential damages assuming all the structures would be totally lost, which is not the likely the case. In addition to those structures, overhead power lines (including telephone and cable) are very susceptible to major hurricane force winds. There are approximately 4.5 million dollars in utilities listed for taxes in Havelock as of June 1986. No estimates were made of damages that may occur to utilities and streets.

(b) Policy Statements and Implementation. Havelock's policies and strategies to implement a storm hazard mitigation plan and minimize potential damage include the following:

1. Flooding policies. The City Board of Commissioners anticipate adopting a Flood Damage Prevention Ordinance (floodplain ordinance) as required and is provided by the National Flood Insurance Program as the City enters into the Regular Flood Insurance Program in late 1986. As described earlier in this chapter the preliminary flood insurance rate maps and flooding maps have been submitted to the City for review and comment. A public meeting was held in July 1986, by personnel with the Federal Emergency Management Agency to explain

the program and receive comments concerning the mapping. The City supports the program and will enforce the construction standards and flooding restrictions once adopted.

The City also supports the continued enforcement of the U.S. Army Corps of Engineers 404 and CAMA Wetlands restrictions and development permit requirements.

Furthermore, because of the localized flooding, in eastern Havelock, the City Planning Board and Board of Commissioners will (1)continue to require new subdivision development to provide adequate drainage facilities in accordance with the City's Standard design Criteria and Operating Procedures, and (2)pursue by 1988, developing a plan to finance drainage improvements as basically recommended in the 1984, Preliminary Engineering Report on the McCotter Canal Drainage Basin.

2. High winds. The City of Havelock will continue to enforce the N.C. State Building Code and any efforts by the Coastal Resource Commission to work with the N. C. Building Code Council and Department of Insurance to evaluate and improve wind restrictive construction design in structures built in hurricane zones. The City will also continue enforcing its zoning ordinance requirements for mandatory registration and tie-down/set-up standards for mobile homes.

3. Wave action. Havelock supports the CAMA development permit regulations for estuarine shorelines which will help ensure properly secured structures and bulkheading that may be accomplished in conjunction with construction permitted by the Havelock Zoning Ordinance and proposed Flood Damage Prevention Ordinance.

4. Erosion Control. Because of the very limited damage potential, the City of Havelock does not propose any additional estuarine shoreline erosion control regulations above CAMA and Corps of Engineers 404 permit requirements. The City also supports the Sedimentation Pollution Control Act of 1973. However, the City maintains that the State regulations do not go far enough in reducing erosion and sedimentation potential because they do not apply to land disturbing activities of less than one acre. Therefore, the City of Havelock would consider re-assuming responsibility from the State for enforcement of its Soil Erosion and Sedimentation Control Ordiance which regulates land disturbing activities down to 7,000 square feet.

[2] .....Post Disaster Reconstruction Plan

The City of Havelock will coordinate evacuation and reconstruction activities caused by a major storm through the Craven County Emergency Operations Center as called for in the Craven County Hurricane Evacuation Plan.

The following sections provide a policy framework for identifying responsible personnel and procedures for assessing damages and permitting repairs and reconstruction following a major storm.

(a) After evacuation orders are issued the Mayor will appoint a Post-Disaster Recovery Team composed of the following team members:

1. City Manager
2. Public Works Director
3. Chief-Public Safety Department
4. Chief-Fire and Rescue Departments
5. Director of Inspections
6. City Clerk-Tax Collector

The Public Works Director will serve as the team leader with principal responsibilities for overseeing the Emergency Operations Center under the direction of the City Manager. The Public Safety Building will serve as the EOC, where communications functions will be centered and are tied to the Craven County EOC in New Bern. The Disaster Recovery Team will be responsible for the following:

1. Keeping the appropriate County and State officials informed;
2. Establishing an overall restoration schedule and priorities;
3. Determining requirements for outside assistance and requesting such assistance when beyond local capabilities;
4. Keeping the public informed;
5. Assembling and maintaining records of actions taken and expenditures obligations incurred and reliable estimates of sustained damages;
6. Recommending to the Mayor to proclaim a local "state of emergency" if warranted;
7. Commencing and coordinating cleanup, debris removal and utility restoration which would include coordination of restoration activities undertaken by private utility companies;
8. Identify those structures that must be demolished or are structurally unsafe and should be condemned;
9. Identify repairs needed to damaged structures and utilities and conducting repair and restoration of essential facilities and services;
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. The Public Works Director will be responsible for directing city forces in clean-up activities: removing debris, opening roads and bridges, cutting and removing fallen trees and coordinating with utility companies the removal of unsafe electric power lines and securing any gas leaks.

(c) Post-Emergency/Long Term Recovery Phase. The Disaster Recovery Team will be responsible for overseeing an orderly reconstruction process after a major storm in accordance with the City's building, zoning, and other land use regulations. Three reports are required to be submitted in requesting state assistance: the Situation Report, the Damage Assessment Report, and the Expenditure/Obligation Report.

The Situation Report alerts county and state officials of pending treat or in progress hurricanes and the city's conditions and responses to the emergency. It will be prepared on the necessary forms by the Team, approved by the Mayor, and submitted as necessary during the treat or occurance of a major storm.

Within 48 hours assessments of damages must be submitted through the Craven County EOC Coordinator (Fire Marshal). The City Manager will appoint a Damage Assessment Team consisting of the following persons: the Director of Inspections, local building contractor, and Utilities Director. This team will immediately tour the community to obtain a preliminary assessment of the damages, classifying damaged structures by type and percentage of damage to total value using the following criteria as modified from Carolina County Prototype Disaster Relief and Assistance Plan (N. C. Division of Emergency Management, 1981):

1. "Destroyed" - replacement required greater than 80 percent of value;
2. "Major Damage" - extensive repairs needed over 30 percent of value and building is uninhabitable or cannot be used;
3. "Minor Damage" - damaged less than 30 percent of value and building is usable or habitable with caution and issuance of a temporary certificate of occupancy;
4. "Habitable" - damaged less than 15 percent of value and building is useable or habitable.

Documenting damages will be done on forms acceptable by the appropriate state and federal disaster assistance agencies.

The Director of Inspections will be responsible for seeing that damaged buildings are appropriately "posted" as condemned or that they may be used under "temporary" certificates of occupancy depending on the above damage classification and applicable State Building Codes, and the City's Minimum Housing Code, and Zoning Ordinance.

The Public Works and Utilities Directors will be responsible for assessing damages to water and sewer systems, storm sewer, and city streets.

(d) Reconstruction Standards. Redevelopment following a major storm will be done under the city's flood plain regulations, building regulations, zoning ordinance and standard design criteria. Structures destroyed but not previously conforming to these standards must be re-built according to those regulations. Structures wilth minor damage will be permitted to be immediately rebuilt. Conforming buildings suffering major damage will be allowed to be rebuilt following issuance of necessary permits.

(e) Development Moratoria. In order to allow accurate damage assessment, clean-up activities to proceed, and basic utilities to be placed back in service without interference, the City Board of Commissioners may pass a temporary moratorium for certain re-building activities---most likely re-construction for non-conforming destroyed buildings.

The moratorium would also permit time to provide alternative re-building solutions to those owners of property lying within special flood hazard areas in order to insure to the maximum extent possible that new construction will have a reduced chance of being hit by another major storm. Depending on the extent and types of damage the temporary moratorium may last up to 60 days.

(f) Special/Temporary Housing. Following destruction of residences, it will be necessary to find temporary substitute housing for families while homes are re-built. Some of this housing may be provided through use of transient lodging facilities and by friends and relatives of the homeless families. Another option is to temporarily permit placement of an approved mobile home unit on the same lot where the home was destroyed, but only for a maximum period of 6 months while the new home is built. The zoning ordinance presently does not permit such an arrangement but, the City Board of Commissioners will ask the Planning Board and City Attorney to draft an ordinance allowing temporary mobile home use that could be adopted following a disaster.

(g) Reconstruction Schedule. The first week following the disaster will be used by the Damage Assessment Team to complete necessary reporting of damages to state and federal agencies. Target time frames for other reconstruction activities are suggested below as a management guide in setting priorities:

1. begin repair of critical utilities and facilities within 24-72 hours with priority to electricity, and water supplies;
2. declare temporary moratorium (if needed) within first week as damage assessment is completed. Minor repairs may begin immediately;
3. during the first two weeks evaluate effectiveness of mitigration policies and hazards identification to see whether they should be used unchanged before rebuilding starts;
4. major repairs may begin under adopted regulations following plan approvals.

(h) Agency Responsible for Implementation. The City Manager will direct and oversee administration of the city's Post-Disaster Reconstruction Plan reporting to the City Board of Commissioners in regular or special sessions of the board as needed. The City Manager will insure that the Post Disaster Recovery Team and Disaster Recovery Team perform their functions in a timely manner, coordinating their work with the Craven County Emergency Management Office, state, and federal agencies.

The Mayor, in his capacity as Chief elected official, appoint any other task forces that are needed and not anticipated here.

(i) Repair and Replacement of Public Utilities. The Public Works Director will be responsible for overseeing the repair or replacement of water, sewer, storm sewer, and streets. The City will follow normal procedures for obtaining required engineering and contracting services for the purpose of redesigning or relocaing these facilities before re-construction in order to make them less subject to damage from another hurricane. Such actions will require action by the City Board of Commissioners.

CHAPTER VI

LAND CLASSIFICATION

INTRODUCTION

The final step in the CAMA Plan update process is preparation of a land classification map. The land classification mapping system was devised by the Coastal resources Commission to aid in implementation of the policies adopted as part of the land use plan. It allows Havelock to identify precise areas where applicable local, state, and federal policies will apply. Designation of land classifications permits Havelock to demonstrate where and in what amounts urban growth should occur and areas where resource protection is a priority.

The system contains five separate classifications; developed, transition, community, rural, and conservation. The following discussion contains a definition of each classification and an analysis of their impact on land use. The relationships between City policies and the individual classifications are also discussed. Furthermore...it is important to remember that land classification is primarily a tool to assist implementation of policies, not a strict regulatory mechanism. An updated land classification map is included as Map A-3.

LAND CLASSIFICATIONS

Developed Land

Areas classified as developed include lands presently developed for urban purposes at or approaching a density of 500 dwellings per square mile which are provided with municipal public services, including at least public water, sewer recreational facilities, and police and fire protection.

The intent of the developed class is to provide areas for continued intensive urban development and redevelopment. Areas classified as developed are generally those lands already used for urban purposes, although there are scattered occurrences of undeveloped land. Most of the land area within the off-station City limits is classified as developed while there are no areas outside the town limits in the developed class.

There are a few undeveloped areas in this classification which do not have water and sewer service but as they become developed it will be the developer's responsibility to provide these services in accordance with City policy.

Transition Land

The transition classification contains lands that currently have some urban services plus additional lands necessary to accommodate the population and economic growth anticipated within Havelock's planning area during the ensuing 10-year planning period. Lands classified as transition must be served or be readily served by water and/or sewer and other urban services, and generally be free of severe physical limitations to development.

Since most urban development in the coming ten years will be occuring in transition classed lands, those are naturally the areas of the community where local, state, federal and developer expenditures for public water, sewer lines, and streets will be directed. In essence these are the growth areas, together with continuing in-fill on developed classified lands, represent the most intensive areas projected for development by 1996.

Transition areas are limited to areas within the City limits or in close proximity to the City. Annexation of these areas would be expected or possible during the next ten years.

The transition classification system when applied to Havelock's planning area works best when subdivided into the following five categories of primary land use type: (1) R-L Residential-Low Density; (2) R-M Residential-Medium Density; (3) R-M-H Residential-Medium to High Density; (4) C-C Commercial Cluster; and (5) L-I LightIndustrial.

(1) R-L Residential-Low Density has potential or contains lands most appropriate for single family, larger residential lots, generally averaging 15,000 square feet or larger in area. Public institutional uses like schools and larger parks would also be appropriate. The established Greenfield Heights and new Roger Bell Elementary School are examples.

(2) R-M Residential-Medium Density transition category is intended to provide lands for single family and perhaps duplex style development with average lot sizes in the 10,000 to 15,000 square feet range. The proposed Jerrett Estates and part to the Greenfield Blvd. area are representative.

(3) R-M-H Residential-Medium to High Density development may include a range of housing: single family, mobile home estates, duplexes, townhouses, and apartments, although not necessarily all mixed together. Here the area lot size would range from 5,000 to 10,000 square feet. The Land Classification Map shows several of these classes, but they are generally in close proximity of other medium to high density development such as Pine Villa Townhouses located east of McCotter Blvd.

CC- Commercial Clusters - Lands with this designation are considered appropriate for shopping center and grouped commercial-service development. Commercial and service development in a clustered fashion should help to alleviate the need and demand for strip development.

L-I - Light Industrial- The lands within this designation are considered most desirable for industrial development and as such should not be preempted by other land uses because of the importance of industrial development to Havelock's economic and community development. In Chapter IV it was projected that 10.8 acres of industrial land would be required during the planning period, an amount approximately equal to the industrial

space that remains undeveloped on the north side of Belltown Road vicinity. Yet as mentioned above, it is important to reserve land for industrial development to avoid preemption, to provide alternative locations, and to prepare for unanticipated industrial development. As a result Havelock included approximately 50 acres in the light industrial class. These lands are located along Belltown Road and off of Greenfield Boulevard at West Main Street.

Community Land

The community classification is considered appropriate for areas characterized by a small grouping of mixed land uses such as residences, churches, and schools which do not require public sewer service. The purpose of the community class if to provide for clustered development to meet housing, shopping, employment, and public service needs within rural areas. These areas may require City water because land use or development density prevents use of both private wells and septic tanks.

There are no areas classified as community within the Havelock Planning Area. The Hickman Hills area west of Havelock's jurisdiction is classified community in the Craven County CAMA Plan update 1982.

Rural Land

Lands classified as rural are those best suited for agriculture, forest management, mineral extraction, and low density urban uses where urban services will not be required and valuable natural resources will not be over-exploited. The rural class is the broadest of the five land classes in the sense that a wider range of land uses are appropriate.

Within Havelock's planning jurisdiction, rural lands are located entirely in the extraterritorial area.

Areas were classified as rural for many reasons, but primarily because the lands are presently best suited for agriculture or forest production and urban services are not expected to be available during the planning period. The Havelock's Zoning Ordinance is consistent with the areas designated as rural in that all areas designated rural are zoned RA-20, a district which permits low density residential uses and has no restrictions on forest or agricultural activities.

Conservation Land

The conservation classification applies to land that should remain essentially in its natural state, principally because the lands are fragile or hazardous for urban development or have natural resources too valuable to endanger. Lands considered appropriate for the conservation class are those containing major wetlands, undeveloped shorelands that are unique, fragile, or hazardous for development, wildlife habitat, publicly owned water supply watersheds and aquifers, and forest lands which possess severe limitations for any types of development, and which will remain undeveloped

for commercial purposes.

Several areas in Havelock's planning area have been classified as conservation, including: much of the Croatan National Forest, the estuarine waters of Slocum and Tucker Creeks, and the wooded swamps that are located within flood plains and areas subject to hurricane storm flooding. Any development in the conservation classification will require proper permits from the City, state, and or federal government.

Changes in Land Classifications from 1976, '81, to '86

The basic land use development patterns for Havelock's planning area were predicted in the 201 Wastewater Facilities Plan (Moore-Gardner & Associates) in 1973. Within that earlier plan's framework, the 1976 CAMA Plan and the 1981 update predicted a roughly balanced amount of new subdivision and commercial development to occur in East and West Havelock. This pattern has held mostly true except that (as discussed under the Chapter II) more development than was predicated occured to the east and southeast as well as west of the extraterritorial limits that existed in 1981. Noteably the City extended its extraterritorial area in 1983, up to the McCotter Canal and further westward as well include rapidly developing areas. Additionally, the Westbrook Subdivision and Westbrook Shopping Center areas were re-classified from Rural to Transition on the Craven County Land Classification Map on May 6, 1983. However, both Craven County and the City of Havelock inadvertently overlooked the need to re-classify from rural to Transition the area east and southeast of the Webb Boulevard Area to McCotter Canal during the same period. Although the City did extend its jurisdiction over the area in 1983.

The Land Classification Map presented in this update includes all of the area within the City's present planning jurisdiction. The other significant changes proposed on this map are the creation of five sub-categories of transition lands as discussed earlier. These are proposed in order to provide a finer tuned picture of development type (i.e., residential, commercial, or industrial) and intensity (low, medium, or higher density residential classes) for local planning purposes.

UPDATED GENERAL REFERENCES
1986
LAND USE PLAN

Drainage Study for City of Havelock, NC - (September 1977), Townes, Edwards & Fisher, P. A., Consulting Engineers

Standard Design Criteria and Operating Procedures - Streets, waters, sanitary sewer, and storm sewer City of Havelock, NC (January 10, 1983), prepared by Moore-Gardner and Associates

Ordinances
-Capital Reserve Ordinance - Water System Expansion - adopted June 25, 1984

-Capital Reserve Ordinance - Wastewater Treatment - adopted June 25, 1984

-Dedication of Streets, etc. Major Subdivisions - adopted October 28, 1980

Havelock Land Use Plan -(1976) _____ - prepared for and adopted by the Havelock City Board of Commissioners, Technical Assistance provided by NC Department of Natural & Economic Resources, Division of Community Assistance, Robert E. Clark, Project Planner

Subchapter 7B- Land Use Planning Guides of the NC Administrative Code, (June 17, 1985) - The NRCD Office of Coastal Management

Summary of the Havelock Land Use Plan, (May 17, 1976) - Prepared for and adopted by the Havelock City Board of Commissioners, technical Assistance provided by NC Department of Natural & Economic Resources Division of Community Assistance.

Havelock & Cherry Point Map - (1978) copyright Patricia A. Bailey

Zoning News - Ballots Cast on Growth and Environmental Controls, Maryland Commission Adopts "Critical Area" Rules - (December 1985) - American Planning Association

Guidance Handbook - to help local governments make site specifics findings affecting site specifics findings affecting the initial Chesapeake Bay Critical Area - (April 1985) - Prepared for Maryland Department of State Planning, by Rogers, Golden & Halpern, Inc.

City of Havelock - Land Use Plan Update - (June 1981) prepared under NC Coastal Area Management Act of 1974 for Havelock NC by Board of Commissioners, Technical Assistance by - Neuse River Council of Governments

Wrightsville Beach NC - CAMA Land Use Plan - 1985 Update, (July 1985) prepared by Talbert, Cox and Associates

201 Wastewater Facilities Plan - Havelock - 201 Planning Area - User charge system - (June 1979) Moore, Gardner & Associates Inc.

Widening Hatteras and Atlantic Avenues - Public Safety Building - Havelock NC (1983) MGA Incorporated, Architects and Egnineers Planners

Thoroughfare Plan - Havelock NC - (March 1977) adopted by NC Board of Transportation - August 12, 1977

Before the Storm - Managing Development to Reduce Hurricane Damages - (August 1984) by William D. McElyea, David J. Brower, David R. Godschalk, with Barry Seymour

Craven County Land Use Plan - (February 1982) prepared by the Craven County Board of Commissioners and the Craven County Planning Board with assistance from Donald Baumgardner, County Planner and John Schofield, AICP, Consultant Planner

Air Installation Compatible Use Zones Update - Cherry Point MCAS - (1981)

Flood Insurance Study - City of Havelock NC - (September 23, 1985) - Federal Emergency Management Agency

Preliminary Engineering Report on McCotter Canal Drainage Basin for City of Havelock Craven County, NC - (October 1984) James E. Stewart & Associates, Inc.

Fiscal 1985-86 Budget - City of Havelock

We were commissioned to survey Havelock and its environs and to present a completed report of our findings to Mr. Bob Clark of Clark Planning Associates. The survey instrument was designed and revised during three subsequent meetings.

A survey team headed by Dr. Tim Britton of Behavior Research Associates interviewed residents in the Havelock planning area on February 14, 15, 21, and 22 and presented their findings to Mr. Clark on February 28, 1986.

We were able to complete 136 personal interviews and 75 telephonic interviews. An attempt was made to sample each residential area and to randomly select the household to be included in the survey. A clustered, focused sample was utilized in order to assure that the sample was indeed representative of Havelock and surrounding planning jurisdiction areas.

Many ancillary remarks were made and noted. The interviewers were instructed to present their questions/statements and to make note of any ancillary remarks. The remarks were discussed and presented as part of this report as attachments to each page of the survey instrument.

Our survey team was well received by the community. We were welcomed in almost every instance with a friendly willingness to cooperate. Those persons interviewed seemed grateful that the Havelock Planning Board was interested in their input,

Citizen Opinion Survey, Behavior Research Associates, George M. Britton, PhD., Director
Kinston, NC. February 26, 1986

APPENDIX

HAVELOCK
PLANNING AND DEVELOPMENT QUESTIONNAIRE

1. Where do you live? (Check One)
   1. Inside the Havelock City Limits? 162
   2. Outside the Havelock City Limits? 49
   3. Are you a non-resident? 0

2. Name the neighborhood, subdivision, or project where you live Westbrooke, West Gate, Ketner Hts., Don Lee Hts. Whispering Pines, Castle Downs, College Park, Greenfield Hts., Greenfield Mobile Estates, Forest Hills, Jackson Intr. Park, Havelock Park, Pine Acre Woodhaven Park

3. Age
   1. Below 18 3
   2. 18 to 24 32
   3. 25 to 34 61
   4. 35 to 44 6
   5. 45 to 54 43
   6. 55 to 64 37
   7. 65 or over 1

4. Sex
   Male 115 Female 96 (9 joint-couples....sex of major respondent was noted)

5. Which of the following applies to you?
   144 1. Own or purchasing home
   41 2. Rent a home
   14 3. Own other property in Havelock area
   26 4. Live in a mobile home

6. How long have you lived in the Havelock area?
   1. Under 2 years 61
   2. 2 to 4 years 16
   3. 4 to 6 years 26
   4. 6 to 10 years 12
   5. More than 10 years 96

February 1986, Citizen's Opinion Survey

7. What is your primary occupation? _____
(There may be more than one response)

33	1.	Civil Service
57	2.	Military Service
27	3.	Retiree
5	4.	Unemployed
0	5.	Student
28	6.	Housewife
0	7.	Farming or Forestry
7	8.	Construction or Craft
4	9.	Clerical
8	10.	Sales
6	11.	General Labor
12	12.	Self Employed
24	13.	Other ranges from truck driver to tavern employee to school teacher.

8. How do you get most of your information about activities in the City of Havelock? noted by number of times mentioned: word of mouth=121 New Bern Sun-Journal=69; Havelock Progress=82; Windsock=48

9. In your opinion, which of the following best described how large Havelock should be 10 years from now? (Choose One)

32	1.	Remain about the same size as now
91	2.	Increase a small amount
72	3.	Increase a substantial amount
16	4.	Decrease in size

NOTE: The City (exclusive of Cherry Point MCAS) has nearly doubled in population in the last 10 years.

10. Please indicate the degree of agreement or disagreement with each of the following statements

	Agree Strongly	Agree	No Opinion	Disagree	Disagree Strongly
1. There is enough business development in Havelock	12	29	3	126	41
2. More industry in Havelock would improve the quality of life	31	92	18	53	17
3. New industry locating in Havelock should be required to file an environmental impact statement	57	122	3	10	19
4. A person should be able to do anything he wants with his land	11	23	0	81	96
5. Planning can minimize conflict between economic development and environmental protection	16	135	31	26	3
6. We have enough people living in Havelock now	21	41	5	102	42
7. We should try to attract more permanent residents	22	121	14	44	10
8. We should give high priority to improved community or county services (central or area water systems, sewage disposals, etc.)	41	106	16	28	20
9. We must control City growth to allow services to keep pace with the need	14	146	7	32	12
10. We should develop local tourism (i.e., Croatan National Forest, Cherry Point)	2	99	0	97	13
11. We should be concerned with airport flight patterns	17	140	0	36	18
12. We should be concerned with aircraft noise pollution	29	151	1	14	16
13. More of the Croatan National Forest near Havelock should be sold for development	25	32	8	109	37
14. Mobile homes should only be allowed in planned mobile home parks	102	60	0	45	4
15. The City of Havelock and State Dept. of Transportation should develop the HWY 70 By-Pass of Havelock	17	81	32	75	6
16. Commercial airlines should be allowed to use Cherry Point	11	49	26	104	21

NOTE**** Rating is based on a possible perfect score of 2110.

11. Rate the following community services/and/or facilities from zero (0) to ten (10), where 0 is very poor, 10 is excellent, and 5 is satisfactory.

SERVICES	(Circle One)	
1. Rescue Squad	10 9 8 7 6 5 4 3 2 1 0	= 1741
2. Public Schools	10 9 8 7 6 5 4 3 2 1 0	= 1316
3. Street Conditions	10 9 8 7 6 5 4 3 2 1 0	= 728
4. Teenage Recreation Programs	10 9 8 7 6 5 4 3 2 1 0	= 352
5. Adult Recreation Programs	10 9 8 7 6 5 4 3 2 1 0	= 611
6. Fire Protection	10 9 8 7 6 5 4 3 2 1 0	= 1546
7. City Government	10 9 8 7 6 5 4 3 2 1 0	= 1111
8. County Government	10 9 8 7 6 5 4 3 2 1 0	= 1266
9. Law Enforcement	10 9 8 7 6 5 4 3 2 1 0	= 1170
10. City Planning	10 9 8 7 6 5 4 3 2 1 0	= 1239
11. Medical Services	10 9 8 7 6 5 4 3 2 1 0	= 1424
12. Library Services	10 9 8 7 6 5 4 3 2 1 0	= 1212
13. Storm Water Drainage	10 9 8 7 6 5 4 3 2 1 0	= 318
14. Sewage treatment	10 9 8 7 6 5 4 3 2 1 0	= 613
15. Drinking water	10 9 8 7 6 5 4 3 2 1 0	= 816
16. Garbage Collection	10 9 8 7 6 5 4 3 2 1 0	= 1735
17. Senior Citizens Programs	10 9 8 7 6 5 4 3 2 1 0	= 1030
18. Park facilities	10 9 8 7 6 5 4 3 2 1 0	= 1304
19. Community Appearance	10 9 8 7 6 5 4 3 2 1 0	= 1289
20. City Relations with County	10 9 8 7 6 5 4 3 2 1 0	= 1301
21. Relations with Cherry Point MCAS	10 9 8 7 6 5 4 3 2 1 0	= 1816

12. Are you generally pleased with the way Havelock is developing?

Yes 161 No 48 had 2 "not sure" answers that would not say yes or no.

13. List two (2) or more things you like about Havelock.

IN ORDER OF FREQUENCY OF MENTION....

1. the people (friendly and interesting)
2. proximity to water sports and hunting
3. size (small town atmosphere) LOW CRIME frequently added.

14. List two (2) or more things you don't like about Havelock and would like to see changed.

1. tie for #1....drainage and roads
2. need a shopping center mall and better restaurants
3. crowded schools....many mentioned 18 mobile units at 1 schoo

page #3, major question #10

question #5 seemed difficult for the respondents to clearly understand. We are not certain that the interviewers were able to elaborate on this without biasing the response.

question #9 frequently set off an elaboration on what was perceived a "growth pains": development in swamps, over-crowding in the schools, traffic problems at 7am and 4pm, drainage, etc.

questions 11 & 12 responses could be misinterpreted. In about 75% of the cases in which this was identified as a problem, qualifiers were used. These comments most frequently were: "It isn't avoidable....without the noise there wouldn't be any Air Base, Cherry Point or Havelock"; or, "We knew about the noise when we came here". It is the opinion of the researchers that this is a popular non-issue.

question #15 was debated and not clearly decided in most instances. A major concern seemed to be the loss of transient traffic and business in Havelock, especially beach traffic.

question #16 did not seem to be of significant importance to persons not affiliated with the military base. The split was generally military against and civilians for or undecided.

None of the interviewers were presented with critical comments about the (1) RESCUE SQUAD. The gist of the remarks made about the (2) PUBLIC SCHOOLS were basically structural. Schools in the Western regional seem to have a bit of a halo effect.....doing the best we can with what we've got. (3) STREET CONDITIONS were in the running for lower ratings. Most residents complained about potholes and drainage. Some expressed concern at the confusion caused by access roads. (4) TEENAGE RECREATION PROGRAMS were perceived to be non-existent. Many persons praised pre-teen programs but there seems to be a general perception of "nothing for our teens to do". (5) ADULT RECREATION PROGRAMS was frequently met with puzzled looks and "we don't know of any but I guess they're okay". (6) FIRE PROTECTION was another area that received rave reviews. Areas served by Volunteer and City services fared equally well. (7) CITY GOVERNMENT received mixed reviews. The interviewers are of the opinion that any "government" would receive mixed reviews at this time. Many persons expressed negative response to the idea of Havelock extending to include their communities, even though this question was not presented as such. (8) LAW ENFORCEMENT was an area touched on by many ancillary remarks. Most interviewees seemed to perceive that the law enforcement personnel "wear a heavy badge" and could benefit greatly with a little attitude adjustment. "They could be a whole lot more friendly and helpful" was frequently mentioned. (10) The area of CITY PLANNING was not met with a great deal of

enthusiasm or recognition. Many perceived Havelock to be growing randomly without plan or purpose. Our survey team was instructed to respond that our survey was part of an organized planning effort.

MEDICAL SERVICES was difficult to evaluate. Many of our sample received medical services on the base or drove to New Bern or Carteret County.

LIBRARY SERVICES received good marks when we were able to interview persons familiar with the facility. Most seemed aware of but not desirous of using the facilities in Havelock.

STORM WATER DRAINAGE is A#1 as the major issue among the persons selected in this sample population. Even those not effected by this problem cited this as a major problem for others therefore a major area issue.Most persons seemed to want to place the "blame" on development that was allowed in flood plain or "swamp" areas.

SEWAGE TREATMENT received low marks (relatively) because it seems so closely tied to the water/drainage issue. Many persons using septic tanks complained of this as an issue in other areas of the planning district.

DRINKING WATER is a major issue in areas served by the city system. The interview team was frequently subjected to samples of rust or muddy colored water with a distinct taste. The numerical rating on this as an issue should be examined so that persons with private wells could be excluded from the analysis.

GARBAGE COLLECTION received the third highest rating of the services and facilities evaluated. We made an attempt to differentiate between private and city pickup and both services received very high ratings, consistently.

SENIOR CITIZEN'S PROGRAMS received a strange mix of responses, ranging from a "non-existent" to "outstanding". Most persons responding to this item were not aware of much activity in this area but still not willing to rate it below (5).

PARK FACILITIES did not receive very many comments from respondents to this item. Most persons were either not interested in this service or relatively pleased with what is available at this time.

COMMUNITY APPEARANCE was the subject of many ancillary remarks, most regarding the appearance of Havelock as a "strip city" built up on highway 70. Seventeen persons complained about the "Movie Mate" operation.

CITY RELATIONS WITH THE COUNTY did not stir many comments or remarks. Most persons interviewed seemed to have little knowledge or interest in this topic.

RELATIONS WITH CHERRY POINT MCAS received the highest rating of any item in this survey. Most persons attributed this to the present Commanding General's staff and his excellent leadership. We encountered frequent mention of jointly sponsored MCAS/Havelock programs. A significant majority of the interviewees perceive the U.S.M.C. to be a very good neighbor.

Persons responding to question number thirteen, two or more things that you like about Havelock, most frequently mentioned the friendly people who seem to have settled in this area. We can understand and appreciate this. Our survey sample included 136 personal interviews. We only encountered two households unwilling to cooperate with us. We were most frequently welcomed and often invited to share coffee and fresh baked cookies. The entire survey team was impressed by our warm reception.

Proximity to water sports and hunting was the second most frequently mentioned attraction. The small size of the town and low crime rates were also frequently mentioned. Based on consensus of the survey team, we can conclude that Havelock residents appreciate the small community atmosphere and are supportive of planned orderly growth. The population seems very much in tune with environmental concerns. Interviewees seem to favor growth in harmony with what they perceive to be a comfortable natural setting.

Item number fourteen, two or more things that you don't like about Havelock, received drainage problem recognition most frequently but rough roads and potholes seemed to be of equal importance. We also encountered frequent mention of the need or wish for a shopping mall and better non-fastfood restaurants. Overcrowding in the schools was mentioned frequently

but most persons mentioning this as an issue tied it back to what seems to be unplanned growth....the perception that Havelock is growing faster than the community ability to develop adequate support services. The desire for police to work on a more friendly helpful attitude and water and sewage problems were also frequently mentioned. Persons identifying with these problem areas were quite outspoken in expressing their frustration at obtaining some relief, or at least assurances that their concerns were being heard by those who are a part of the decision making process.

Orderly, planned growth, at a rate that would allow the development of adequate support services and facilities seems to be the desire of most Havelock area residents. Sentiment was also noted that would be supportive of growth in harmony with what is perceived to be an attractive natural environment.

Respectfully submitted by:
BEHAVIOR RESEARCH ASSOCIATES

George M. Britten, Ph.D.
Director

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DATE DUE

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