

## U. S. DEPARTMENT OF COMMERCE Lewis L. Strauss, Secretary WEATHER BUREAU

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## NATIONAL HURRICANE RESEARCH PROJECT

REPORT NO. 28

# A Model Hurricane Plan for a Coastal Community

Prepared by the Weather Bureau in collaboration with the Corps of Engineers, U. S. Army, with the advice of other interested agencies and organizations, and in accordance with the authorization of Public Law 71, 84th Congress, First Session.



Washington, D. C. April 1959



U18401 0606379

#### NATIONAL HURRICANE RESEARCH PROJECT REPORT

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- No. 23. Hurricane Audrey storm tide. October 1958.
- No. 24. Details of circulation in the high energy core of hurricane Carrie.
  November 1958.
- No. 25. Distribution of surface friction in hurricanes. November 1958.
- No. 26. A note on the origin of hurricane radar spiral bands and the echoes which form them. February 1959.
- No. 27. Proceedings of the Board of Review and conference on research progress.

  April 1959.

2C944 .N39 No.28 ATSL

#### PREFACE

The model community hurricane preparedness plan which follows is intended to offer local authorities in cities and communities along the Gulf of Mexico and Atlantic Coasts vulnerable to hurricanes suggestions as to planning and organization to minimize hurricane losses.

The value of advance planning for effective action in emergencies is widely recognized. Leadership in preparation for hurricane emergencies must come principally from local authorities. They direct municipal and community planning, control most of the facilities which would be used in meeting an emergency, possess the necessary detailed knowledge of the local area, and have the immediate responsibility for the welfare of their community and its residents.

The principal factor that discourages community hurricane preparedness planning has been the difficulty of evaluating the risk of a hurricane disaster. Some coastal cities have not been visited by a severe hurricane within the lifetime of most, if not all, their residents. Statistically the risk to a given locality will be small. On the other hand the destruction wrought by a hurricane, when it does occur, can be tremendous and in many coastal areas the potential for loss of life and property in a severe hurricane continues to increase year by year. It is therefore believed that the time and effort spent in developing and maintaining a realistic community hurricane preparedness plan is definitely worthwhile.

The hurricane preparedness plan presented herein is for a fictitious city, Homeport, in Achilles County, on the Atlantic Coast. The plan is equally applicable elsewhere. The plan deals with real hazards associated with hurricanes and shows what might be done to minimize death and destruction.

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## HOMEPORT - GENERAL INFORMATION

Homeport, with a population of about 25,000, is laid out on land ranging from 3 to 20 ft., m.s.l. The eastern edge of the business section is about 500 ft. from the beach and lies in the 5-10 ft. m.s.l. range.

While Homeport is an old city, it is progressive. There are at least six fairly new office and store buildings with two to four floors that have been designed to withstand severe hurricanes and floods. The oldest part of the city is on the beach. Most of the stores and homes are one-story frame buildings constructed long before any stringent building codes were in effect. The most exposed part of the city is the residential section known as Homeport Beach, (pop. about 700), located on a key about one mile from the mainland. A two-lane causeway about 4 ft. above mean high water connects it with the rest of the city. A drawbridge on this causeway has to be raised for almost all boat traffic. The highest elevation on the key is 5 ft. m.s.l. Almost all homes are small one-story wooden buildings of relatively light construction.

The city is well managed. It has adequate police and fire protection and public transportation (busses). It operates a marina, which is in a small lake about 2 miles inland on the northern edge of the city. The inlet to the lake is shallow and at mean tide accommodates boats drawing less than 4 ft. Practically all locally owned smaller pleasure boats are kept at the marina. The larger fishing craft and yachts are usually tied up at the beach piers near the mouth of the inlet.

The electric power (Diesel-operated) and gas plants are in the older section of the city on land of ft. m.s.l. The power lines are generally overhead except in the business section and in the newest residential areas. The only radio station (WXYZ) in the city is located in the business section atop one of the most substantial buildings in the city, the four-story Triangle Building. Unfortunately, it has no standby power plant. The local Civil Defense and Red Cross Units are well organized and active.

## 1. HURRICANE PREPAREDNESS COMMITTEE

1.1.1 A permanent Hurricane Preparedness Committee is hereby set up to provide the city of Homeport and suburban communities with adequate protection to minimize death and property losses usually associated with hurricanes. This Committee consists of the following:

City Director, Civil Defense, Chairman

Mayor
County Director, Civil Defense
Chapter Chairman,
Homeport Chapter, Red Cross
District Chief, State Police
Sheriff, Achilles County
Chief of Police
City Engineer
Supt. Public Works
Supt. Street Dept.
Supt. Schools

Disaster Chairman,
Homeport Chapter, Red Cross
Newspaper official
Telephone Co. official
Power & Gas Co. official
Manager, Public Transit
Local representative of press,
National Assoc. of Broadcasters,
and of American Radio Relay
League

The following state and area officials have agreed to be available for consultation by the Committee and to serve in a liaison capacity to the Committee when requested:

Governor's representative State Director, Civil Defense

Disaster Service Representative, Red Cross Director, State Public Health

The following federal officials have agreed to be available for consultation by the Committee and to act in a liaison capacity when requested:

Meteorologist in Charge,
Weather Bureau Airport Station,
Homeport
Area Engineer, Corps of
Engineers, Homeport

Commanding Officer, U. S. Coast Guard Station, Homeport Commanding Officer, Inland Air Force Base

- 1.1.2 The Committee has the following responsibilities for the Homeport Hurricane Preparedness District (Chart 1):
- (1) To direct a program designed to educate the public on the hazards of hurricanes and the protective measures to be effected.
- (2) To keep the city and suburbs continually prepared for a hurricane emergency.
- (3) To make recommendations regarding construction projects and changes in building codes required to lessen danger and destruction from

#### hurricanes.

- (4) To effect evacuation when authorized.
- (5) To direct rescue work.
- 1.1.3 The Committee shall meet as often as need indicates until a satisfactory preparedness plan has been completed. Thereafter the Committee shall meet at least once a year just before the beginning of the hurricane season (early June) to review the plan and to make sure each member is well acquainted with the duties his organization is expected to perform in case of emergency. In other words, this meeting is in the nature of a "dry run". Other meetings shall be called as required. The Committee shall convene every time a HURRICANE WATCH indicates a threat to its area of responsibility, or earlier when suggested by the Weather Bureau's local Meteorologist in Charge, and will remain in session or on call until the emergency or threat is ended.
- 1.1.4 The Chairman of the Committee, the Mayor, and the County Director of Civil Defense will function as an executive group of the Hurricane Preparedness Committee to oversee the execution of evacuation plans and to deal with other emergency matters which may arise and require immediate decision and which are not otherwise provided for in the plan. The final authority for execution of evacuation plans in the City is the Mayor and in the County the County Director of Civil Defense.

## 2. APPRAISAL OF POTENTIAL DANGER

#### Introduction

2.1.1 The Homeport area has been particularly fortunate in that it has not been visited by disastrous hurricanes for many years. However, this is no indication that it is immune to hurricane disasters. The Atlantic coast has been visited many times by hurricanes, and the losses in life and property have both been tremendous. These losses would have been much greater had not protective measures been taken. The losses would have been still less had today's hurricane warning facilities been available for tracking and predicting the behavior of all these hurricanes. The best hurricane warning service in the world is of little use, however, unless adequate protective measures are taken. Experience has disclosed the type of information required for the planning of adequate protective measures. This report contains the necessary information for the preparation of such a plan. The large increase of population and property value in the Homeport area during recent years makes a hurricane preparedness plan more important than ever.

#### Coastal Hurricanes

2.2.1 An opinion of the degree of disaster associated with hurricanes can best be obtained by a review of major coastal hurricanes of recent years.

The hurricane of September 18-20, 1926, is said to have been one of the most destructive hurricanes of the century. The property damage was estimated at \$100,000,000. Approximately 4700 homes were destroyed and 9100 damaged. The Red Cross estimated that 15,700 families were homeless. The storm tide was 10.5 ft. m.s.l.

- 2.2.2 Second only to the Galveston, Texas, hurricane of September 8, 1900, in order of deaths was the hurricane of September 15-17, 1928. The Red Cross estimated 1836 lives lost, 1870 injured, and property damages of \$25,000,000. Loss of life and property resulted mainly from waters of Lake Okeechobee overflowing the southeast bank. Winds were in excess of 100 mph.
- 2.2.3 Hurricane "Carol" crossed Long Island and southeastern New England August 31, 1954 causing enormous destruction to communication and power lines, buildings, automobiles, small craft, marine facilities, and crops. The hurricane moved inland at time of normal high tide resulting in extensive coastal flooding. Property losses were estimated at over \$400,000,000.

## Hurricanes Affecting Homeport Area

- 2.3.1 Some residents of the Homeport area believe that the area is immune from hurricanes. This belief has no scientific basis. This area has come under the influence of several hurricanes during the period of record. That none of these hurricanes passed directly over Homeport and that those coming very near were of relatively weak intensity is merely due to chance.
- 2.3.2 On October 2, 1898 a hurricane entered the coast within 70 miles of Homeport. The resulting high water at Goodhaven, 35 miles north of Homeport, reached 10.8 ft. m.s.l. or 7.8 ft. above mean high water. Luckily, this was not a particularly potent hurricane. Its lowest pressure was only 28.82 inches, as compared with 26.35 inches for the Labor Day Hurricane of September 2, 1935; 27.66 inches for hurricane "Hazel" of October 15, 1954; 27.62 and 27.59 inches for the hurricane of September 15-17, 1928, and September 18-20, 1926, respectively.
- 2.3.3 Other hurricanes have entered the coast not far from Homeport, but Homeport and vicinity have thus far been particularly fortunate in not having had to bear the brunt of a direct hurricane assult during the period of record.

#### Storm Tides and Floods

2.4.1 Storm tides and floods, which account for over three-fourths of the deaths and much of the destruction associated with hurricanes, deserve special attention. Much of their destructiveness results from the rapidity of rise in the tide. Studies indicate a relation between the central pressure of the hurricane as it enters the coast and the maximum departure of the tide from its normal value along the open coast. The relation, which indicates a maximum storm tide of 20 ft. for the minimum observed pressure of record, 26.35 inches, is valid only for tides on the open coast. Near the head of an estuary the highest tides may be as much as twice the height of those on the open coast.

- 2.4.2 The highest tide of record in the Homeport area is the 10.8 ft. m.s.l. observed at Goodhaven during the October 2, 1898 hurricane described above. Homeport, itself, has a fairly short record of tide measurements. The longest record (12 years) is at the Municipal Pier, which recorded a record maximum of 5.0 ft. m.s.l. in connection with the October 18, 1950, hurricane.
- 2.4.3 It is estimated that a hurricane like "Hazel" which passed over Myrtle Beach, South Carolina, on October 15, 1954, could produce a storm tide of 13 ft. if located directly over Homeport. If this storm tide coincided with the mean high water level, the storm tide would reach 16 ft. m.s.l. While a tide of this magnitude would undoubtedly be a rarity for Homeport, it is possible. Protective measures should be taken with this possibility in mind.
- 2.4.4 The intense rainfall associated with hurricanes could cause all streams in the county to overflow their banks and swamp water levels could be raised as much as 2 ft.

### Wave Heights

2.5.1 The wave heights that might occur along the beach are dependent upon the topography of the ocean bottom near the beach, wave direction, depth of water, and the direction, speed, and duration of the winds. The waves are not limited to the actual vicinity of the hurricane but may be hundreds of miles away. On September 8, 1951, 11-ft. waves were observed at Melbourne Beach, Florida, with the hurricane still 700 miles away. At Homeport Beach the waves would probably break offshore. Studies indicating wave heights to be limited to about three-fourths of the water depth suggest that wave heights of the order of 12 ft. could be expected at the mean shore line with a 16-ft. storm tide.

#### Wind Speeds

2.6.1 Maximum wind speed to be expected at the shore line is 150 mph -- in an onshore direction. Duration of winds of 60 mph or higher could be as much as 8 hours.

#### Delineation of Predicted Threatened Areas

2.7.1 The extent of coast line endangered by an approaching hurricane can be estimated on the basis of forecasting experience. The accuracy of Weather Bureau forecasts of Atlantic hurricanes in the period of 1950-56 indicates that protective measures must be initiated over 250 miles of coast line at least 12 hours and over 150 miles at least 6 hours before the hurricane is forecast to cross the coast to insure that the area affected by the hurricane is protected about 90 percent of the time.

## Emergency Control Center

2.8.1 The Homeport Hurricane Preparedness Committee has established an Emergency Control Center at Burr High School. Direct underground telephone lines connect the Center with all agencies represented in the committees.

The Center is equipped with several battery-powered radio receivers to receive broadcasts on all assigned wave lengths and with two receivers adapted for CONELRAD monitoring. A monitoring unit will listen to and record on tape all broadcasts from all sources serving the area in order to ascertain that the hurricane information being broadcast is based on the latest official information. Stations broadcasting obsolete information will be immediately informed of the latest releases available. Those broadcasting unofficial hurricane information will be asked to broadcast official releases only. If they persist, they will be asked to announce very clearly that the information is unofficial and to name the source of the information.

- 2.8.2 The Center has no transmitting equipment of its own, but Commercial Station WXYZ and the police and fire department transmitters have direct line microphones at the Center so direct broadcasts are possible. In emergencies, Civil Defense, police and fire department mobile transmitters will be stationed at the Center to insure against breakdown of communications should other means fail.
- 2.8.3 Burr High School has set up a mateorological station for instruction purposes. This makes a very convenient auxiliary weather station that can be activated during emergencies.
- 2.8.4 The Center is also equipped with sufficient portable battery-powered lamps to provide good lighting if power fails.

## Emergency Communications Network

- 2.9.1 Commercial Station WXYZ is the only station in the vicinity. Its management has agreed to broadcast all information provided by the Committee during an emergency. While the station is usually permitted to operate only from 6 a.m. to midnight, broadcasting on a 24-hour basis during emergencies has been approved. The emergency is considered to begin when a HURRICANE WATCH indicates a threat to the Homeport area. Unfortunately, Station WXYZ has no standby power plant. In the event of a power failure, Station WMET at Metropolis has agreed to broadcast all information presented by the Homeport Hurricane Preparedness Committee. The information would be sent to WMET via police teletypewriter and radio and Civil Defense radio. Both stations WXYZ and WMET have agreed to preface emergency weather warnings with the COMELRAD attention signal when so requested by the Weather Bureau.
- 2.9.2 Tape recordings should be made of all broadcasts and retained for at least two weeks after the emergency has ended. These tape records would be very useful in an investigation of a disaster. Failure to transmit warnings properly is a frequent complaint. More often than otherwise, such a complaint is not justified, and the tape record would help to vindicate the source of the warning and the broadcasting station should they be criticised.
- 2.9.3 All organizations, offices, and agencies represented in the Homeport

Hurricane Preparedness Committee are equipped with CONELRAD alert receivers. Consequently, they can receive emergency weather warnings broadcast following the CONELRAD attention signal at any hour of the day or night.

- 2.9.4 Mobile communications equipment, together with operating personnel, is kept in a ready status at Coast Guard District Headquarters and some other Coast Guard units within the District. This equipment varies in size from hand portable type to a completely self-contained communications truck. The Coast Guard District Commander will deploy this equipment to assist Homeport and other communities. Available equipment will be deployed so as to insure maximum effective utilization throughout the threatened area.
- 2.9.5 The Coast Guard Station maintains a two-way radio station which can be utilized until evacuation becomes necessary. (Many are included in teletypewriter distress net.)

## Safe Buildings

2.10.1 The City Engineer has indicated to the Red Cross the following buildings as being suitable for shelter purposes for various degrees of potential danger.

Expected Tide Height (ft., m.s.l.)
(Assuming maximum wind speeds and wave heights consistent with tide)

S	ection of City	4-8	9-12	13-16
	Downtown	Acme Bldg. Apex Bldg. Triangle Bldg. King Hotel Adams Hotel Christ Church	Acme Bldg.* Apex Bldg.* Triangle Bldg.* King Hotel* Adams Hotel* Christ Church	Acme Bldg.* Apex Bldg.* Triangle Bldg.* King Hotel* Adams Hotel*
•	North End	City High School Masonic Hall Gem Theatre	City High School Masonic Hall Gem Theatre	City High School* Masonic Hall*
	South End	City Hall Court House Elementary School Armory	City Hall* Court House* Elementary School Armory	City Hall* Court House*
	The Ridge	Burr High School First Church City Hospital City Auditorium Primary School	Burr High School First Church City Hospital City Auditorium Primary School	Burr High School First Church City Hospital City Auditorium Primary School

<sup>\*</sup> Denotes "above first floor."

## Evacuation Areas, Shelters, and Routes

- 2.11.1 The City Engineer has prepared 5 maps showing areas to be evacuated when expected tide height is (a) 4-8, (b) 9-12, and (c) 13-16 ft. m.s.l. Locations of shelters, emergency bus loading points, and routes are also shown. These maps have been printed and distributed to all residents of the Homeport area. Additional supplies of these maps, revised if necessary, will be printed and distributed in early June of each year.
- 2.11.2 The large number of persons to be evacuated under Plan C necessitated setting up shelters outside Homsport. Arrangements have been made with the officials of the towns of Fairhaven, Mound City, and Crossville for the use of their schools as shelters.

## Contamination of Water Supply

- 2.12.1 The old city water supply plant in the North End would be contaminated if tides exceeded 8 ft. m.s.l. The new plant on The Ridge would retain its normal purity even with the highest possible tides. The temporary elimination of the old plant would necessitate drastic rationing of water, but there would be enough to supply the entire city with enough water for drinking and cooking until the old plant could be reactivated.
- 2.12.2 Flooding of wells or septic tanks would contaminate well water. Consequently, such water should not be consumed until purified. Care should be exercised as the contamination could occur even though the storm tide might not be high enough to endanger the homes themselves.

## 3. CONTINUAL PREPAREDNESS

3.1.1 The Emergency Control Center and emergency radio network will be checked in early June and monthly throughout the hurricane season to insure that everything is in readiness for an emergency. The Hurricane Preparedness Committee has also set up a program of public education and precautionary measures for the purpose of minimizing hurricane hazards.

## Public Education

- 3.2.1 Radio Station WXYZ will present in late May and early June of each year a series of at least five 15-minute broadcast interviews with authorities on various phases of hurricane preparedness. The Superintendent of Schools is directed to instruct his teachers to inform their charges of these radio broadcasts and to quiz them on the information broadcast. The Homeport Herald will publicize these broadcasts and publish summarizations of the interviews.
- 3.2.2 When the Hurricane Preparedness Committee meets in early May, it will hold at least one evening meeting where several members or guest hurricane disaster experts can review the local hurricane problem for the public and answer any questions that might be asked.

- 3.2.3 The broadcasts and newspaper articles should include mention of continual precautionary measures that not only tend to reduce danger and damage during an emergency but to maintain properties from depreciating through neglect. The public will be asked to take the following precautionary measures:
  - 1. Check homes. Secure loose shingles. Repair window shutters and shaky chimneys.
  - Check yards. Trim or remove dead or dying trees. Anchor removable objects such as dog houses, chicken coops, lumber piles, etc.
  - 3. Maintain supply of boards for boarding up picture and show windows.
  - 4. Always keep at hand at least one flashlight in good condition.
  - 5. Promptly raze condemned buildings.
  - 6. Obtain radio receivers equipped as CONELRAD monitors and battery-powered sets for emergency use.
- 3.2.4 Also to be broadcast and published are instructions on what should be done when a hurricane is expected to strike the area. These include the following:
  - 1. Keep your radio or television on and listen for latest Weather Bureau warnings and advisories. If power fails, use your car radio or other battery-powered receivers. Keep radio tuned in on WXYZ and observe its instructions. Keep COMELRAD monitors on at all times if not actually listening to broadcasts. Keep your radioless neighbors informed. All persons operating small boats and vessels maintain guard on calling and distress frequency 2182 kc for warnings and advisories. Those without radios maintain lookout for signals or messages from Coast Guard vessels or aircraft. Return to safest mooring available and secure all equipment possible.
  - 2. Avoid being misled by rumors.
  - Get away from low-lying beaches or other locations which may be swept by high tides or storm waves. If passage to high ground is over a road likely to be under water,

leave early. Don't run the risk of being marooned.

- 4. If your house is out of danger from high tides and is well built then it is probably the best place to weather the storm. However, please act promptly if asked to evacuate.
- 5. Be alert for high water in areas where streams or rivers may flood after heavy rains.
- 6. Board up windows or put storm shutters in place. Use good lumber securely fastened. Makeshift boarding may do more damage than none at all. Have strong bracing for outside doors.
- 7. Get in extra food, especially things which can be eaten without cooking or with very little preparation. Electric power may be off and you may be without refrigeration. Place dry ice in deep freezers and refrigerators to keep food from spoiling.
- 8. If emergency cooking facilities are necessary, be sure they are in working order.
- 9. Sterilize the bathtub, jugs, bottles, cooking utensils, and fill with drinking water, as city water service may be interrupted and wells may be polluted.
- 10. If in one of the evacuation areas, move furniture and other valuables to upper floors to minimize flood damage.
- 11. Have flashlights and/or other emergency lights in working condition and keep them handy.
- 12. Be sure to have gasoline in your car.
  If electric power is off, filling stations
  may not be able to operate pumps for
  several days.
- 13. Check on everything that might blow away or be torn loose. Garbage cans, garden tools, toys, signs, porch furniture, awnings, and other objects become weapons of destruction in hurricane winds. Store them all inside if possible.

- 14. Be sure that a window or door can be opened on the lee side of the house . . . the side opposite the one facing the wind.
- 15. Make provisions for children and adults requiring special diets. If anyone in your home has to be removed by ambulance, phone the Emergency Control Center, EM 1-1111.
- 16. If possible, arrange for the safe keeping of pets and other animals by friends living in quarters that will not have to be evacuated. No pets or animals of any kind will be allowed in evacuation busses or trucks nor in shelters.
- 17. If the center or "eye" of the storm passes directly over, there will be a lull in the wind lasting from a few minutes to half an hour or more. Stay in a safe place. Make emergency repairs during the lull if necessary, but remember the wind will return suddenly from the opposite direction, frequently with even greater violence.
- 18. Be calm. Your ability to meet emergencies will inspire and help others.
- 19. When your Hurricane Preparedness Committee advises evacuation, follow instructions promptly.
  - a) Shut off main gas valve and pull main switch before leaving home.
  - b) Head for the proper shelters or evacuation points indicated for your area. (These are shown on your Evacuation Maps, but the information will also be broadcast at the time of emergency.) Bring whatever clothing is absolutely necessary but do not try to bring household equipment. Follow routes indicated on maps. Drive right up to shelter entrance, unload, and park car as police instruct. If on foot, proceed to nearest loading station and board busses. No fare will be charged.

- c) Evacuated areas will be policed to prevent looting.
- d) At shelter, follow instructions of Red Cross personnel in charge. Volunteer your assistance, especially if you are a doctor or nurse.
- e) Remain at shelter until informed that you may leave. Re-entry into evacuated areas will not be permitted until Public Health officials and building inspectors have had a chance to make their inspections and have given their approval. Evacues will then be given passes providing for re-entry into the areas from which they were evacuated.
- f) Keep calm at all times. If instructions are observed promptly, there is little personal danger involved. The local hazards from hurricanes have been carefully evaluated, and the measures taken for your protection have been well planned.

## Precautionary Measures

3.3.1 The precautionary measures to be taken were mentioned above under Public Education. The city will keep its buildings and trees in good order. The Tree Division of the Street Department will trim or remove privately owned trees at cost. The Fire Department will make a survey of the city in the early part of the year and notify home-owners of trees, chimneys, etc. that need attention. The City Engineer will check to see that all gas and gasoline storage tanks and radio towers are securely anchored to prevent dislocation by wind or flood. The Police Department will enforce City Ordinance No. 492, which obligates owners of condemned buildings to have them razed within 90 days of Condemnation Notice. The Public Works Department will ascertain that all drawbridges and piers are in good condition before the beginning of the hurricane season. The Street Department will schedule its maintenance so that no evacuation route has to undergo extensive repairs during the hurricane season.

## Planning and Construction to Minimize Hazards

3.4.1 Until there are enough shelters in the Homeport area to accommodate all its evacuees, future city and county buildings will be built so they can serve as hurricane shelters. The new one-story Junior High in the North

End is useless as a shelter because its floor would be under water with a tide of only 7 ft. m.s.l. Furthermore, the large glass panels, which make up most of the walls, would offer a real hazard in a high wind. New buildings will be limited to ordinary-sized windows with walls to be of solid construction. All buildings on land that might possibly be flooded will have at least one floor above the highest possible tide height. The City Engineer will work with the Planning Commission on a revision of the building codes for all types of buildings including homes.

- 3.4.2 The new coastal 4-lane highway (Route 17) providing main exits to the north and south of Homeport is bottlenecked on the north end of the city by the 2-lane drawbridge across the inlet to the marina. Steps have been taken to replace this bridge with a raised, fixed 4-lane structure, which will allow most boats to pass underneath. Boats with masts over 20 ft., of which there are no more than six now using the marina, will have to tie up at the ocean piers.
- 3.4.3 The power plant is in a fairly vulnerable location. If it is ever relocated, it should be built on higher ground well removed from the water front. The Homeport Power and Gas Company estimates that the output of the plant will have to be increased in about two years and has agreed to build the new auxiliary plant on the western edge of the city on land now owned by the city. This plot is about 15 ft. m.s.l. and is 2 miles from the beach. All buildings set aside for shelters, the hospital, Emergency Control Center, and Station WXYZ will be supplied with electricity by underground cable from the new power plant. The possibility of power failure at these important posts during an emergency would be practically eliminated.
- 3.4.4 New sewers and septic tanks will be designed and located so as to minimize the health hazards associated with their malfunctioning during high storm or hurricane tides. Wells will be designed and located to minimize risks of pollution from malfunctioning sewers or septic tanks.

#### Military Assistance

3.5.1 Military assistance from any of the branches of the Armed Forces is furnished under the responsibility of the Department of the Army; this responsibility has been delegated to Army Commanders having jurisdiction over continental army areas. Direct assistance from local military installations is authorized when extreme emergency conditions do not permit delay for receipt of instructions from higher authority, and local officials are unable to cope with the situation. The primary objectives in supplementing local resources are to save lives, prevent suffering, and reduce damage to Federal property, without assuming functions which normally are performed locally. Military assistance does not extend to rehabilitation, except as requested and authorized by the Office of Civil And Defense Mobilization. Liaison with military forces will be maintained through the Commanding Officer, Inland Air Force Base, Homeport. Motion pictures and other instructive material regarding military assistance may be made available through request to the State Civil Defense Director.

## 4. EXECUTION OF EMERGENCY PREPARATIONS

4.1.1 When a HURRICANE WATCH is issued for the Homeport area, the local Weather Bureau Office will immediately notify the chairman of the Hurricane Preparedness Committee. The chairman will call an immediate meeting of the Committee to review preparations for emergency procedures.

HURRICANE WATCH: An announcement issued by the U.S. Weather Bureau to the public and all other interests via press and radio and television broadcasts whenever a tropical storm or hurricane becomes a threat to a coastal area. The "Hurricane Watch" announcement is not a warning; it indicates that the hurricane is near enough that everyone in the area covered by the "Watch" should listen for subsequent advisories and be ready to take precautionary action in case hurricane warnings are issued.

- 4.1.2 The Weather Bureau will immediately send emergency assistants to supplement the staff at the local office. No local action is required to effect this. The local office will notify all on its hurricane alert list.
- 4.1.3 The Fire and Police Departments will place all their personnel on 24-hour on-call duty and recall those who might be on leave outside the area. They will also check all equipment.
- 4.1.4 All members of the emergency communications network will be notified to prepare for emergency procedures. The Homeport Herald and Station WXYZ will publicize the threat and issue new warnings promptly. Only official Weather Bureau warnings will be publicized.
- 4.1.5 The disaster representative of the Red Cross will call in reinforcements from cities outside the threatened area.
- 4.1.6 Both railroad companies operating in the area will move all rolling stock in the yards to inland cities. Both airlines serving the area will give priority on incoming reservations to representatives of the Weather Bureau, Civil Defense, Red Cross, Corps of Engineers, State and local police, local firemen, Florida National Guard (Homeport's Co. G), and Homeport Coast Guard Station.
- 4.1.7 The Homsport Coast Guard Station, assisted by the Coast Guard Auxiliary, will notify all ships tied up at the piers or anchored offshore of the threat. The Coast Guard District Radio Station, plus any other Coast Guard Radio Station designated by the Commander of the Coast Guard District will broadcast warnings and advisories on standard marine frequencies. Coast Guard aircraft from the nearest Coast Guard air unit will cover coastal and inland waterways and isolated land areas, dropping messages to vessels and persons who may not have received warnings by any other method.
- 4.1.8 The Homsport Transit Company will ready all its spare busses and alert its spare drivers.

- 4.1.9 The CAP will patrol the coastal area to ascertain that warnings have been heeded. Any boats that are not headed for Homeport will be reported immediately to the Coast Guard by radio.
- 4.1.10 State Police will set up check points on main highways leading into threatened area to centrol entry and re-entry. The Homeport Hurricane Preparedness Committee will issue special passes to persons who have to pass through the police lines in the performance of their emergency duties. Evacuees will receive another type of pass so they can be the first to reenter the evacuated areas after decontamination forces and building inspectors have indicated that re-occupation is safe. The State Police will also patrol the beaches (outside the city limits) 20 miles north and south of Homeport to warn beach campars to leave.
- 4.1.11 The County Sheriff will send his force out to alert all exposed settlements and trailer camps to maintain a constant radio watch for further instructions. They should also be told where to go if they are warned to evacuate. The settlements and trailer camps to be alerted are indicated on the evacuation maps, but there is a list posted in the Sheriff's Office of the settlements for which he is responsible. The Sheriff's men should also be on the lookout for temporary settlements or trailer camps of roving fruit-pickers which are not shown on the map.
- 4.1.12 The highway, street and public works departments will take immediate steps to open all streets and roads where construction or repairs are in progress. Where this is not possible, the street or road will be barricaded at an intersection, so as to avoid a dead-end, and DETOUR signs prominently posted. Heavy movable equipment, such as bulldozers, rollers, earth movers, etc., will be taken to the city lot on the western edge of the city.
- 4.1.13 Each of the agencies involved in the emergency preparations has a schedule of the actual duties it is expected to perform. These schedules will be followed to the letter unless countermanded by the Hurricane Preparedness Committee because of some unpredictable development.

## 5. EXECUTION OF EMERGENCY PROCEDURES

5.1.1 Emergency procedures will be initiated when a HURRICANE WARNING indicates a hurricane will reach the Homeport area within 24 hours.

HURRICANE WARNING: A warning indicating that hurricane winds of 74 miles per hour (64 knots) or higher or a combination of dangerously high water and very rough seas (with winds as low as 60 miles per hour) are expected in a specified coastal area. When a Hurricane Warning is announced hurricane conditions are considered imminent and may begin immediately or at least within 24 hours. It is of utmost importance that precautionary actions be instituted immediately when a Hurricane Warning is announced.

- 5.1.2 The radio emergency network will go on emergency schedule and operate continuously until the emergency has ended. Broadcasts will be made directly from the Emergency Center and Weather Bureau Office. The following agencies will each station one mobile broadcast unit in the parking lot at Burr High School: Civil Defense, city police, state police, sheriff's office, fire department, and power company. These mobile units will enable the Emergency Control Center to keep in direct touch with all emergency groups at all times.
- 5.1.3 The broadcasts should remind the public to remain calm, to remain at home, to stay tuned in continuously, and to begin precautionary measures. The following information will be broadcast:
  - 1. "Hurricane Safety Precautions", U. S. Weather Bureau, 1958.
  - 2. "Hurricane Preparedness in Homeport, " Homeport Hurricane Preparedness Committee, 1957
  - 3. "Tornado and Hurricane Tips", American Red Cross (4 1/2 minute tape recording)
- 5.1.4 The broadcasts will also remind the public to call EM 1-1111 if there are any invalids, aged, or infirm to be moved by ambulance in case of evacuation.
- 5.1.5 All official Weather Bureau warnings and instructions from the Emergency Control Center will be broadcast as soon as issued.
- 5.1.6 All agencies and individuals on the hurricane warning lists will be notified immediately. The Weather Bureau has one list and the Emergency Control Center has another.
- 5.1.7 The Superintendent of Schools will immediately cancel all classes for the duration of the emergency. The announcement will be broadcast from the Emergency Control Center.
- 5.1.8 The Emergency Control Center will put one of three plans in operation, the plan to be selected depending on the maximum tide height expected. Evacuation from various areas should be authorized by the Homeport Hurricans Preparedness Committee on a schedule that will permit evacuees to reach designated shelters at least 9 hours before time of expected flooding.

# 6. PLAN A -- EXPECTED TIDE 4-8 FT. M.S.L. (See Charts 1 and 3)

Areas to be Evacuated and Time Required*	Shelters	Routes
Turtle, King, Barracuda, and Shark Keys (3 hrs.)	Masonic Hall	Boats to Marina then bus via Marina Rd. to 5th St.; E on 5th St.
All settlements east of Route 17 from Northville to Homeport (4 hrs.)	City High School	S on Route 17, E on 7th St.
All settlements east of Route 17 from Southville to Homeport (4 hrs.)	Elementary School	N on Route 17, E on 25th St.
Homeport Beach (3 hrs.)	Armory	Causeway, S on A St., W on 30th St., S on R St.
Area A (3 hrs.)	City Auditorium	W on 15th st.

- \* Time required to evacuate and reach shelter
- 6.1.1 Buildings west of D Street need not be evacuated above street floor. Tenants of upper floors are requested to provide refuge for occupants of street-level floors and basements.
- 6.1.2 First Church, which has a well-equipped kitchen in the attached parish hall, at 17th and Crescent Streets, is the Emergency Hospital. All persons requiring ambulance transportation will be taken there.

## Emergency Duty Assignments for Evacuation Plan A

- 6.2.1 Communications: No unusual troubles expected. Station WXYZ will broadcast hurricane warnings and pertinent information exclusively.
- wardens will make door-to-door checks in areas to be evacuated to ascertain that everyone is warned. Will immediately phone EM 1-1111 if ambulance service is required. Will also assist police if requested. When evacuation is completed, wardens will take posts in indicated safe buildings in their area and assist National Guardsmen in maintaining guard against fire and looting.
- 6.2.3 The Civil Defense mobile rescue units will operate as ambulances in taking incapacitated persons to the Emergency Hospital at First Church. Ambulances will get their radioed orders from the Emergency Control Center via the Civil Defense mobile transmitter stationed there.

- 6.4.2 Red Cross: Will be responsible for care including emergency clothing and feeding at indicated shelters. Ambulances will assist in moving incapacitated persons to the Emergency Hospital at First Church. This emergency hospital will be manned by volunteer doctors and nurses, and the Red Cross will supplement the medical and nursing staff as needed.
- 6.2.5 Transportation agencies: Airlines have agreed to operate additional trips if necessary to fly in emergency personnel. They will, however, cancel all incoming trips and remove all flying equipment from Homeport to unthreatened airports as soon as the first signs of the hurricane are felt.

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- 6.2.6 The Homeport Transit Company will do the following when instructions are received from the Emergency Control Center:
  - 1. Station 4 busses at the Marina to take evacuees from the Keys to the Masonic Hall.
  - 2. Operate 9 busses at 10-minute intervals from Northville to Homeport on Route 17 with pick-up stops at all villages (three) east of the route. Destination will be City High.
  - 3. Operate 8 busses at 10-minute intervals from Southville and Homeport on Route 17 with pick-up stops at all villages (three) east of the route. Destination will be Elementary School.
  - 4. Operate 10-minute service in Area A in Homeport. Regular routes will be used in the Area but terminal will be City Auditorium and 15th Street will be one-way westward beginning at B Street.

These emergency schedules will operate until the Emergency Control Center advises their cancellation or when instructed by police to seek shelter at protected City Park. Fares will not be collected. Passengers will not be carried on outgoing trips except for police, firemen, and those having Emergency Control Center credentials.

- 6.2.7 Police: City police will be stationed at every other intersection along approaches to shelters, which will be temporarily one-way during the emergency with no parking permitted. Emergency vehicles will be permitted to travel in the opposite direction on the Causeway. Elsewhere, when entering evacuation areas they should use streets not designated as evacuation routes. The chief duty of the police will be to expedite evacuation traffic to the shelters and to prevent parking on approaches and within two blocks in any direction from a shelter.
- 6.2.8 In the evacuation areas police and National Guardsmen will be posted to prevent looting. When the storm strikes, all policing forces in the evacuation area will take posts in designated safe buildings and wait out the storm. Some National Guardsmen will be equipped with walkie-talkie radios to report fires or cases of looting.

- 6.2.9 State Police will set up road blocks on all routes into the Homeport area and will divert tourist and truck traffic to cities outside the threatened area. They will make a final patrol of the beach to ascertain that it is deserted and will also assist the Sheriff's force in warning settlements and supervising the evacuation.
- 6.2.10 The Sheriff and his men are primarily responsible for seeing to it that all settlements, trailer camps, etc., are duly advised of the evacuation. They will be assisted by the State Police and National Guard. Stranded persons whose cars have been disabled or have missed the evacuation busses will be picked up by National Guard personnel carriers dispatched by radio from the Emergency Control Center.
- 6.2.11 Fire Department: The equipment at Station No. 1 will be moved to the vicinity of the Field House in City Park. The Station's battery operated receiver will be taken along so men can take shelter in the Field House. The Station will not be abandoned, however, until winds reach about 30 mph., by which time all evacuees should be in shelters.
- 6.2.12 Each of the Department's three stations will be operating at half strength. The remaining half will be on guard duty (in uniform) in their home neighborhoods to watch for fires and fallen live wires, and to give first aid if required. The Department's two ambulances will be used to evacuate incapacitated persons.
- 6.2.13 Coast Guard: At the discretion of the Commanding Officer boats will be sent as available to ascertain that the Keys have been evacuated. Only Shark Key requires assistance in the way of additional boats. Boats will be dispatched to evacuate about 40 persons from Shark Key.
- 6.2.14 In addition to seeing that the Keys have been evacuated, the Coast Guard will stand by to tow any boats that may become disabled during the actual evacuation. The CAP will operate two planes over the water areas under Homsport jurisdiction to make sure all boats have sought protection. The planes will notify the Homsport Coast Guard Station by radioing to the FAA station at Homsport Airport, which will relay the message to the Coast Guard Station.
- 6.2.15 The Coast Guard Station will be flooded so it will have to be evacuated. When no further need for patrolling is indicated, boats will return to station. Coast Guard personnel, with all appropriate available mobile equipment, will proceed to pre-assigned locations selected for maximum availability for rescue operations during and after the hurricane. Communications equipment will be placed in operation.
- 6.2.16 National Guard: Will assist policing units as indicated under Police. Assisted by the Red Cross, they will care and feed the evacuees using the Armory as a shelter. Their two ambulances will take part in evacuating incapacitated persons to the emergency hospital.

- 6.2.17 Civil Air Patrol: Will activate its prearranged warning patrol schedule to look for isolated groups which do not appear to be taking shelter. Will notify either Sheriff's Office or Coast Guard depending on whether it is a land or sea situation. As plane transmitters broadcast only on FAA standard airways communications frequency, contacts will be made through FAA Airways Communication Station at Homeport Airport.
- 6.2.18 Planes will leave for bases outside threatened area as soon as there appears to be no further need for patrolling or until winds become strong or ceiling or visibility begins to lower.
- 6.2.19 Public Utilities: Main gas lines to evacuation areas will be shut off. Every attempt will be made to maintain electric service in the central section of the city in which most of the shelters are located. Here the power lines are underground and electrical hazards have been greatly reduced. In other sections of the city, power will be shut off when gusts begin to exceed 60 mph.

# 7. PLAN B -- EXPECTED TIDE 9-12 FT. M.S.L. (See Charts 1 and 4)

## 7.1.1 Same as Plan A plus the following:

Areas to be Evacuated and Time Required  B (3 hrs.) C (2 hrs.) D (1 hr.) E (2 hrs.) F (1 hr.) G (3 hrs.) H (3 hrs.)	Shelters  Court House City Hall Adams Hotel Christ Church Gem Theatre Primary School Burr High School	Approaches W on 25th St. W on 24th St. N on H St. S on I St. W on 5th St. W on 10th St. W on 18th St.
•	burr High School	W on 18th St., N on Denver St.

- 7.1.2 Areas are all in the city and there is no specified evacuation route. However, the police will see to it that the approaches to the shelters are one-way in the direction indicated above and on the maps.
- 7.1.3 Buildings west of G Street need not be evacuated above street floor. Tenants of upper floors are requested to provide refuge for occupants of street-level floors and basements.
- 7.1.4 The settlements of Sardine Springs, Four Corners, and Sandville lying in the area bounded by Routes 17, 19, 18, and 24 will have to be evacuated, but they have taken this responsibility upon themselves. They do depend on Homeport for warnings, however, and they are on all warning lists. The Sheriff will ascertain that evacuation notices reach these towns when advised by the Emergency Control Center and will assist in their evacuation if requested.

## Emergency Duty Assignments for Evacuation

- 7.2.1 Communications: Power plant will be flooded so Station WXYZ may be forced to suspend sometime before the worst part of the storm. Meteorological warnings and other pertinent instructions will be transmitted via State Police radio and/or teletypewriter to Station WMET, which will then carry on the full emergency schedule intended for Station WXYZ.
- 7.2.2 Weather Bureau: The airport will be flooded by the tides within the expected range of heights. Furthermore, the operations would be greatly hampered by the eventual power failure. The staff should therefore evacuate to the Emergency Control Center and try to carry on their duties at the emergency meteorological post there.
- 7.2.3 FAA Airways Communications Station: This office would be in the same predicament as the Weather Bureau. Hence, the staff will also evacuate to the Emergency Control Center and help with the communications activities there.

- 7.2.4 Civil Defense: Same as for Plan A (Par. 6.2.3) except for additional areas to be evacuated.
- 7.2.5 Red Cross: Same as for Plan A (Par. 6.2.4) except staffing additional shelters.
- 7.2.6 Transportation: Same as for Plan A (Par. 6.2.6) except for additional bus service by Homsport Transit Company as required by Emergency Transit Schedule for Plan B. The Company's bus equipment will be supplemented by 10 county school busses and 10 National Guard trucks equipped to carry personnel. This supplementary equipment will operate under instructions of the Company's Chief Dispatcher who will assign enough vehicles to operate the schedules listed in Emergency Transit Schedules for Plan B.
- 7.2.7 Police: City Police will extend the duties listed in Plan A (Pars. 6.2.7 and 6.2.8) to cover the additional evacuation areas and evacuation routes as shown in Emergency Transit Schedules for Plan B.

- 7.2.8 State Police will perform same duties listed under Plan A (Par. 6.2.9) and will assign 15 troopers to the Homeport Police to assist in directing traffic and maintaining order.
- 7.2.9 The Sheriff will operate as under Plan A (Par. 6.2.10) and will ascertain that Sardine Springs, Four Corners, and Sandville receive evacuation warnings and provide assistance for their evacuation if they request it.
- 7.2.10 Fire Department: In addition to operations stipulated in Plan A (Pars. 6.2.11 and 6.2.12) the equipment at Station 2 will be moved to the Burr High School Athletic Field when wind reaches 40 mph. Personnel will take shelter in the Field House taking radio with them.
- 7.2.11 Coast Guard: Same as for Plan A (Pars. 2.3.13-6.2.15). In addition, utilize mobile communications equipment previously set up and take over when other units cease to function and to maintain contact with other Coast Guard units. To the extent permitted by weather conditions, other personnel carry out rescue operations.
- 7.2.12 <u>National Guard</u>: Same as for Plan A (Per. 6.2.16). In addition, will place 10 trucks with drivers at disposal of Homeport Transit Company for evacuation purposes.
- 7.2.13 Civil Air Patrol: Same as for Plan A (Pars. 6.2.17 and 6.2.18).
- 7.2.14 Public Utilities: The electric power and gas plant will have to be abandoned. As soon as it is suspected that Plan B will have to be put in effect, notice of the impending plant shutdown will be released by the Emergency Control Center for broadcast to the public. The plant management will phone supervisors of all buildings equipped with standby power plants (lists of persons to be called are already available at the plant, at its city office, and the Emergency Control Center) to notify them of the expected service interruption and to check standby equipment and fuel supplies.

7.2.15 When occupation of the plant is no longer considered safe, valves, switches, and engines will be shut off. Plant personnel will then seek shelter at City High School.

# 8. PLAN C - EXPECTED TIDE 13-16 FT. M.S.L. (See Charts 2 and 5)

Areas to be Evacuated and Time Required  Shelters  Routes or Approaches  Turtle, King, Barracuda, Mound City and Shark Keys (3 hrs.)  High School  Marina Rd. and N on Routes  17 W. on Routes	.a ute
All settlements east of	
Route 17 from North- ville to Homeport (5 hrs.)  Mound City High and Elementary School	18.
All settlements east of Route 17 from South- Ville to Homeport (5 hrs.)  Crossville Grammar Son Route 17, W on Route 2  N on Route 19.	24,
Homeport Beach (4 hrs.)  Fairhaven High and Jr. High School  Area A (3 hrs.)  B (3 hrs.)  C (2 hrs.)  D (3 hrs.)  E (2 hrs.)  Acme Bldg.  G (2 hrs.)  G (2 hrs.)  G (2 hrs.)  G (2 hrs.)  Adams Hotel  G (2 hrs.)  H (3 hrs.)  G (2 hrs.)  King Hotel  G (2 hrs.)  King Hotel  G (3 hrs.)  King Hotel  G (4 hrs.)  King Hotel  G (5 hrs.)  King Hotel  G (6 hrs.)  King Hotel  G (7 hrs.)  King Hotel  G (8 hrs.)  King Hotel  G (9 hrs.)  King Hotel  G (10 hrs.)  King Hotel  High  W on 15th Street  W on 15th Stree	

- 8.1.1 Buildings west of railroad tracks in Homeport proper need not be evacuated above street floor. This also applies to designated hurricane-safe masonry buildings between G Street and railroad tracks. Tenants of upper floors are requested to provide refuge for occupants of street-level floors and basements.
- 8.1.2 Sardine Springs, Four Corners, and Sandville will also have to be evacuated, and Homeport's only responsibility is to insure that they are

warned. The Sheriff will ascertain that the warnings reach these settlements and that evacuation is effected.

## Emergency Duty Assignments for Evacuation

8.

- 8.2.1 Communications: Same as Plan B (Par. 7.2.1).
- 8.2.2 Weather Bureau: Same as Plan B (Par. 7.2.2).
- 8.2.3 FAA Airways Communications Station: Same as Plan B (Par. 7.2.3).
- 8.2.4 Civil Defense: Same as Plan A (Par. 6.2.3) except for additional areas to be evacuated.
- 8.2.5 Red Cross: Same as Plan A (Par. 6.2.4) except for additional shelters to be manned requiring more trained personnel to be brought in.
- 8.2.6 Transportation: Will place Emergency Transit Schedule for Plan C in operation when notified by Emergency Control Center. Equipment will be supplemented by 10 county school busses and 10 National Guard trucks.
- 8.2.7 Police: City Police will extend duties to cover additional evacuation areas and routes shown in Emergency Transit Schedules for Plan C.
- 8.2.8 State Police: Same as Plan B (Par. 7.2.8).
- 8.2.9 Sheriff: Same as Plan B (Par. 7.2.9).
- 8.2.10 Fire Department: Same as Plan B (Par. 7.2.10)
- 8.2.11 Coast Guard: Same as Plan B (Par. 7.1.11).
- 8.2.12 National Guard: Same as Flan B (Par. 7.2.12) plus evacuating their own Armory.
- 8.2.13 Civil Air Patrol: Same as Plan A (Fars. 6.2.17 and 6.2.18).
- 8.2.14 Public Utilities: Same as Plan B (Pars. 7.2.14 and 7.2.15).

## 9. POST-HURRICANE MEASURES

9.1.1 After passage of the hurricane the public will be advised to take the following safety measures:

- Remain in shelters until informed by those in charge that you may return to your homes.
- Seek medical care at Red Cross disaster stations or hospitals for persons injured during the storm.
- Don't touch loose or dangling wires.
   Report such damage to the light and power company, or nearest police officer.
- 4. Report broken sewer or water mains to the water department.
- Guard against spoiled food in refrigerators if power has been off any appreciable length of time.
- 6. Unless you are qualified to render valuable emergency assistance, stay away from disaster areas where you may hamper first aid or rescue work. Doctors and nurses will be issued special passes.
- 7. Drive automobiles cautiously. Debris-filled streets are dangerous, so keep your eyes on the road. Along the coast soil may be washed from beneath the pavement, which may collapse under the weight of vehicles.
- Be alert to prevent fires. Lowered water pressure makes fire-fighting difficult after storms.
- Take down shutters and save the lumber.
   Store in a handy place for future use.

- 9.1.2 Coast Guard vessels, aircraft, and shore units will carry out patrols as soon as possible after the hurricane passes, prepared to give assistance to vessels or persons in distress. Survivors should be ready to signal these units as they approach.
- 9.1.3 Information as to assistance available for storm victims will be provided by press, radio, and other means. For family disaster-caused problems involving need for food, clothing, repair or rebuilding of homes, and medical and nursing care free counselling service and grants of financial assistance on an individual family basis based on the family's ability to help itself is available at Red Cross disaster headquarters upon each family's application. Red Cross through its welfare inquiry service and in cooperation with the Post Office Department will have available Safety Netification Cards and Change of Address cards by which affected families may notify relatives of their post-hurricane status and re-establish their promptly receiving their mail.

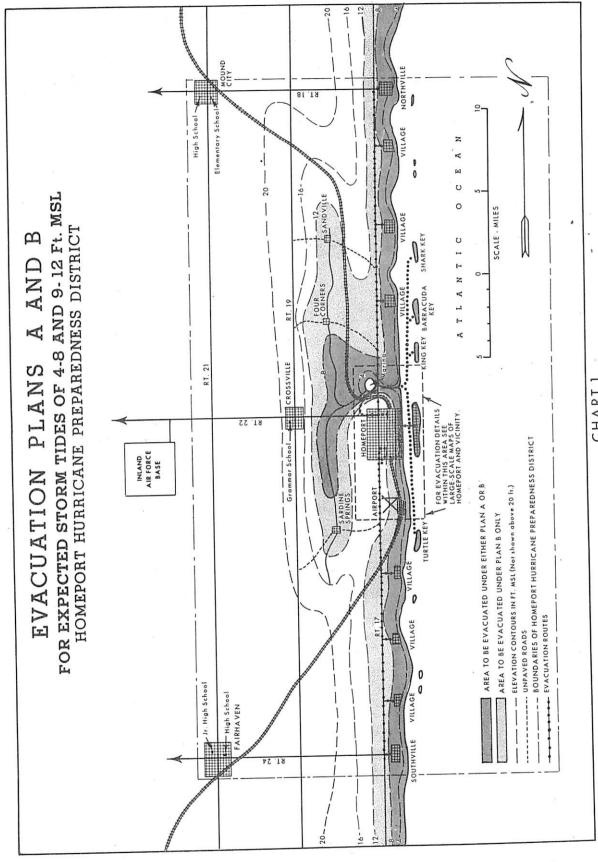
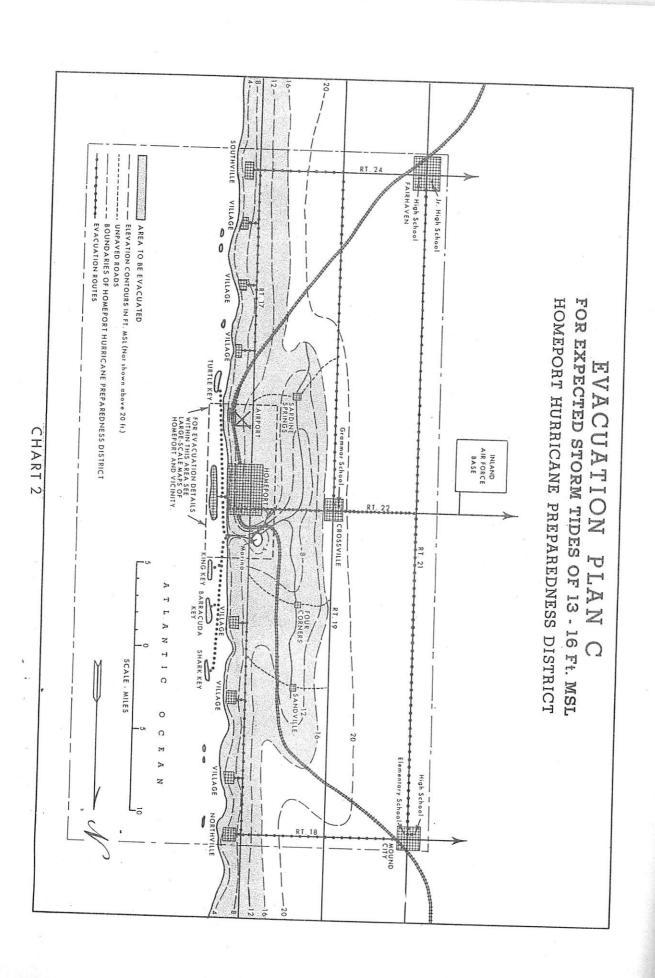
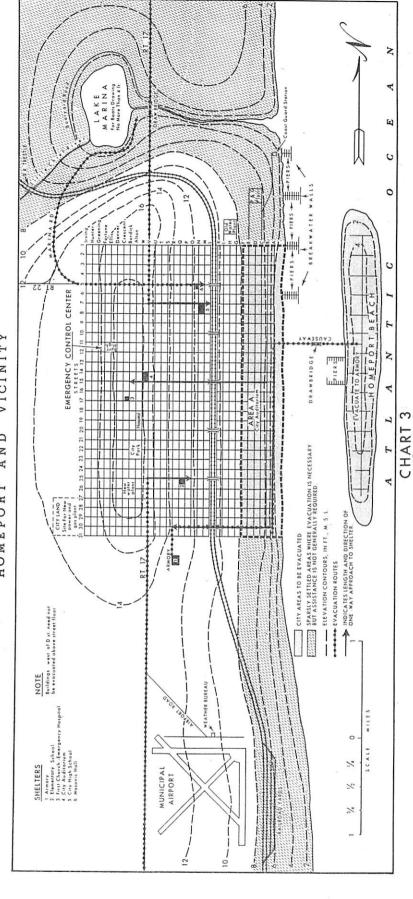


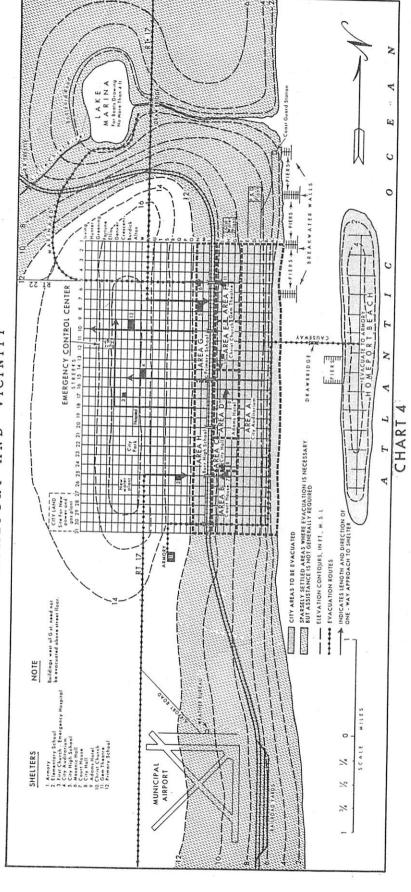
CHART 1



A FOR EXPECTED STORM TIDES OF 4 - 8 Ft. MSL PLAN VICINITY AND EVACUATION HOMEPORT



EVACUATION PLAN B FOR EXPECTED STORM TIDE OF 9-12 Ft., MSL HOMEPORT AND VICINITY



LAKE MARINA For Boats Drowing No More Than 4 ft. C 0 EVACUATE TO FARMAVEN HIGH AND JR HIGH SCH VICINITY DRAWBRIDGE Z CHART 5 HOMEPORT AND [[[[]]]]] SPARSIY SETTLED AREAS WHERE EVACUATION IS NECESSARY BUT ASSISTANCE IS NOT GENERALLY REQUIRED. ELEVATION CONTOURS, IN FT., M. S. L.

MOLCATES LENGTH AND DIRECTION OF

ONE-WAY APPROACH TO SHELTER. CITY AREAS TO BE EVACUATED NOTE

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The courted to be treet loof. Court House
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2 Cyty Hall
3 Acme Bidg
4 Adams Hosel
7 Transple Bidg
7 King Hosel
7 King Hosel
8 Cyty Yang School
Marsonic Hall
7 City Auditorium
9 Primory School SHELTERS 74 MUNICIPAL AIRPORT 1 >

Z

EVACUATION PLAN C FOR EXPECTED STORM TIDE OF 13-16 FT, MSL