

A Model Hurricane Plan for a Coastal Community

 **U.S. DEPARTMENT OF COMMERCE / Environmental Science Services Administration**

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PREFACE

The model community hurricane preparedness plan which follows is addressed primarily to local authorities in cities and communities along the Gulf of Mexico and Atlantic Coasts vulnerable to hurricanes. It is intended to offer 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. In many coastal areas the potential for loss of life and property from a severe hurricane continues to increase year by year. Time and effort spent in developing and maintaining a realistic community hurricane preparedness plan is definitely worthwhile.

One point must be stressed here, particularly for the benefit of officials from other countries who contemplate adapting this planning document to meet national needs. The plan presented here is a "model" plan, and as such represents an idealized situation. Very few coastal communities, even in the United States, can be expected to have resources available to the degree depicted here, particularly with regard to communications systems. But sophisticated systems may fail during emergencies and in themselves cannot provide positive protection against disasters. Thorough advance planning and a high degree of organization before and after the emergency situation are they key factors in coping successfully with natural disasters. It is by advancing suggestions for these areas that this plan can make a useful contribution in meeting needs of lesser developed countries.

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

ACKNOWLEDGMENT

This model hurricane plan is a revision and updating of a plan originally prepared in April 1959 in accordance with Public Law 71, 84th Congress. Special thanks are due to the Federal Communications Commission, the Corps of Engineers (U. S. Army), the American Red Cross, the Office of Civil Defense, and many other interested agencies and organizations which reviewed the plan and made helpful suggestions.

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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 feet, m.s.l. The eastern edge of the business section is about 500 feet from the beach and lies in the 5 - 10 feet 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, (population approximately 700), located on a key about one mile from the mainland. A two-lane causeway about four feet 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 five feet m.s.l., and 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 (buses). It operates a marina, which is in a small lake about two 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 four feet. 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 six feet, m.s.l. The power lines are generally overhead except in the business section and in the newest residential areas. The only commercial broadcast stations (WHPT/WHPT-FM) in the area are located in the business section atop one of the most substantial buildings in the city, the four-story Triangle Building, and are fully equipped with an emergency auxiliary electric power generator and fuel to provide for two weeks of continuous operation. The local Civil Defense and Red Cross units are well organized and active.

Homeport has no local television station, but WMET-TV at Metropolis, a nearby inland community, covers the Homeport area.

1. HURRICANE PREPAREDNESS COMMITTEE

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

City Director, Civil Defense, Chairman

Mayor	Superintendent of Public Works
County Director, Civil Defense	Superintendent, Street Department
Chapter Chairman, Homeport Chapter,	Superintendent of Schools
Red Cross	Disaster Chairman, Homeport Chapter,
District Chief, State Police	Red Cross
Sheriff, Achilles County	Newspaper Official
Chief of Police	Power & Gas Company Official
City Engineer	Manager, Public Transit

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	Chairman and Vice Chairman,
State Director, Civil Defense	Federal Communications Commission Oper-
Chairman and Vice Chairman,	ational Area Industry Advisory Committee
Federal Communications Commis-	Disaster Service Representative, Red Cross
sion State Industry Advisory Com-	Director, State Public Health
mittee	
Commanding Officer, State National	
Guard (Homeport's Co. G)	

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	Commanding Officer, U. S. Coast Guard
Bureau Airport Station, Homeport	Station, Homeport
District Engineer, Corps of	Commanding Officer, Inland Air Force Base
Engineers, Homeport	Federal Communications Commission Regional
	Liaison Officer

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.
- (6) To maintain liaison with the Federal Communications Commission (FCC) Operational Area Industry Advisory Committee (OAIAC) and develop emergency communications requirements for appropriate processing by the OAIAC consistent with approved plans of FCC State Industry Advisory Committee. This includes emergency operational coordination with the OAIAC in providing instantaneous "live" broadcasts and AP/UPI Radio Press/Wire releases by the Weather Bureau of hurricane advisories and other emergency weather warnings, and instantaneous "live" broadcasts by other federal, national, state and local authorities and officials responsible for public well-being in the area.

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 Meteorologist in Charge of the local Weather Bureau, 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 emergency matters requiring immediate decision and which are not otherwise provided for in the plan. Although the Weather Bureau has no authority to order evacuation, it is the agency to which the general public and responsible public officials must look for recommendations on evacuation. Official Weather Bureau hurricane information is contained in advisories and bulletins from special Hurricane Warning Centers. Since advisories and bulletins must be kept reasonably short, evacuation recommendations can be included only in broad terms. More specific information is contained in hurricane "statements" issued by local offices such as the Homeport Weather Bureau, and in the verbal advices which local offices provide to public officials responsible for ordering evacuation. (Samples of

an advisory, bulletin, and local statement are included in Appendices A, B, and C.) The final authority for execution of evacuation plans in the City of Homeport 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 both life and property have been tremendous. These losses would have been much greater had not protective measures been taken. Past 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 potential 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 4,700 homes were destroyed and 9,100 damaged. The Red Cross estimated that 15,700 families were homeless. The storm tide was 10.5 feet, 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 1,836 lives lost, 1,870 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 the time of normal high tide resulting in extensive coastal flooding. Property losses were estimated at over \$400,000,000.

2.2.4 Hurricane "Betsy" struck Southeastern Florida and Louisiana during early September of 1965. The devastation caused by Betsy was in excess of \$1.4 billion - the greatest natural disaster ever experienced in the United States. Approximately 75 persons lost their lives in this destructive hurricane. The high loss of life primarily resulted from drownings caused by topping and breakthroughs in the river levee system. The accumulation of water combined with loss of electrical power caused failure of the pumping system which that large portion of the City of New Orleans which is below sea level depends upon for drainage.

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 feet, m.s.l. or 7.8 feet above mean high water. Luckily, this was not a particularly potent hurricane. Its lowest pressure was only 28.82 inches, as contrasted with 26.35 inches for the Labor Day Hurricane of September 2, 1935; 27.70 inches for hurricane "Hazel" of October 15, 1954; 27.43 and 27.61 inches for the hurricanes 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 assault during the period of record.

Storm Tides and Floods

2.4.1 Storm tides and floods account for over three-fourths of the deaths and much of the destruction associated with hurricanes, and 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 feet 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 feet 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 maximum tide of 5.0 feet 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 feet if located directly over Homeport. If this storm tide coincided with the mean high water level, the storm tide would reach 16 feet 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 two feet.

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, eleven-foot 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 are limited to about three-fourths of the water depth suggest that wave heights of the order of twelve feet could be expected at the mean shore line with a sixteen-foot 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 eight 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 1950 - 56 indicates that protective measures must be initiated over 250 miles of coast line at least twelve hours and over 150 miles at least six 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 Operating Center (EOC)

2.8.1 The Homeport Emergency Operating Center located in the Burr High School has recently been completed. Direct underground telephone lines connect the Center with all agencies represented in the committees. The Emergency Operating Center is equipped with several battery powered receivers for reception of Standard (AM), FM and TV Broadcasts and with two receivers adapted for EBS Monitoring. Personnel of Radio Stations WHPT/WHPT-FM will be stationed at the Emergency Operating Center under HURRICANE WATCH conditions to assist Federal, National, State and local authorities and officials in originating instantaneous "live" broadcasts and to originate WHPT/WHPT-FM bulletins based upon available information. Personnel from radio station WMET at Metropolis and a mobile pickup from WMET-TV will also be stationed here.

2.8.2 The Emergency Operating Center has Remote Pickup Broadcast transmitting and receiving equipment licensed to and maintained by Station WHPT/FM to permit programs to originate directly from the Center for broadcast over WHPT/WHPT-FM. In addition, Civil Defense maintains VHF transmitting and receiving equipment at the Center which provides intercommunication with the Police and Fire Department headquarters in the event normal communications should fail.

2.8.3 Burr High School has set up a meteorological station for instruction purposes. This makes a very convenient auxiliary weather station that can be activated during emergencies.

2.8.4 The Emergency Operating Center is also equipped with sufficient auxiliary emergency power generating equipment to provide good lighting and to operate all communications equipment.

Operational Area Emergency Communications

2.9.1 Commercial Radio Stations WHPT/WHPT-FM are the only broadcast stations in Homeport. The management of these stations, in cooperation with the Operational Area Industry Advisory Committee (OAIAC) and state and local authorities have developed an Emergency Broadcast System primarily for use in a National Emergency. However, these Homeport Operational Area emergency communications facilities can also be used on a voluntary cooperative basis in the event of an emergency affecting Homeport and surrounding villages. Stations WHPT/WHPT-FM usually broadcast from 6:00 A.M. to midnight. However in the event of a hurricane emergency, these stations are prepared and authorized to remain on the air on a 24-hour basis. The emergency is considered to begin when a HURRICANE WATCH indicates a threat to the Homeport Operational Area. Radio stations WHPT/WHPT-FM have adequate auxiliary emergency power generating equipment to operate both stations. However, in the event WHPT and WHPT-FM cannot continue operations, radio station WMET, a daytime-only broadcast station at nearby Metropolis is the Alternate Broadcast Station for the Operational Area and will broadcast information received from the Homeport Emergency Operating Center and "live" broadcasts

from the Weather Bureau. This information will be transmitted to Radio Station WMET via the Remote Pickup Broadcast units of Radio Stations WHPT/WHPT-FM installed at the Weather Bureau and the Emergency Operating Center. Radio Station WMET, as a daytime station, will sign off at sunset but will remain in standby status and be prepared to resume extended-hours operation as 1st Alternate to Radio Stations WHPT/WHPT-FM upon notification from WHPT that they must cease operation because of circumstances beyond their control. Periodic on-air announcements will be made by WHPT/WHPT-FM of these arrangements and the pending status of Radio Station WMET. Radio Stations WHPT/WHPT-FM will also make an on-air announcement of the substitution of Radio Station WMET as 1st Alternate before leaving the air. Advanced publicity should also be made of these arrangements prior to the hurricane season. WHPT/WHPT-FM and WMET have agreed to preface Emergency Weather Warnings with the Emergency Action Notification Signal when so requested by the Weather Bureau.

2.9.2 Although not required by the FCC, Radio Station WHPT/WHPT-FM and WMET have agreed to make tape recordings of all broadcasts and to retain them after the emergency has ended. These tape recordings can serve many useful purposes 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 recording would help vindicate the source of the emergency information and the broadcast stations should they be criticized.

2.9.3 All Federal, National, State and local authorities and officials in the Homeport Operational Area are equipped with Emergency Action Notification Signal receivers. Consequently, they can receive emergency weather warnings broadcast following the Emergency Action Notification 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 and personnel to assist Homeport and other communities. Available equipment and personnel will be deployed so as to insure maximum effective utilization throughout the threatened area.

2.9.5 The State National Guard (Homeport's Co. G) is part of an extensive statewide communications system which can be of great assistance during an emergency situation.

Safe Buildings

2.10.1 The Red Cross has designated the following buildings as shelters, and is prepared to establish shelters in safe areas if a need is indicated or a precautionary evacuation undertaken.

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

<u>Section of City</u>	<u>4-8</u>	<u>9-12</u>	<u>13-16</u>
Downtown	Acme Bldg. Apex Bldg. Triangle Bldg. ^{1/} 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

* Denotes "above first floor." Well-built multistory buildings located in areas where storm waters can drain off rapidly after the storm are suitable as evacuation positions. However, if the buildings are situated on terrain at or near sea level or where drainage is poor, ground floors may remain under water for several days. Buildings in such areas should be used only for emergency purposes as the occupants may be trapped without utilities or drinking water for some time.

^{1/} WHPT/WHPT-FM in this building.

Evacuation Areas, Shelters, and Routes

2.11.1 The City Engineer has prepared five maps showing areas to be evacuated when expected tide height is (a) 4 - 8, (b) 9 - 12, and (c) 13 - 16 feet, 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 Homeport. 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 the tides exceeded eight feet 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. CONTINUOUS PREPAREDNESS

3.1.1 The Emergency Operating Center and all emergency communications, plans, systems and procedures will be checked in early June and monthly through 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 Stations WHPT/WHPT-FM 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. The FCC State Industry Advisory Committee will begin actual on-air statewide test broadcasts of their State Association of Broadcasters "FM Weather Network" by originating a weekly three-minute "live"

broadcast at the Weather Bureau and transmitting the broadcast throughout the State by means of off-the-air relay. Radio Stations WHPT/WHPT-FM and WMET will intercept and rebroadcast these daily programs. WHPT-FM is a key station in the State Association of Broadcasters "FM Weather Network."

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 or tiles. Repair window shutters and shaky chimneys.
2. 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. Maintain in good operating condition battery-powered radio receivers for reception of Emergency Weather Warnings and other emergency information from WHPT/WHPT-FM or WMET.

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 to WHPT or WHPT-FM and observe the instructions. Keep EANS monitors on at all times if not actually listening to broadcasts. Keep your 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, secure all equipment possible, and leave. Do not return to the water to check on your boat's moorings or attempt to retie it more securely once the wind and waves are up.

2. Avoid being misled by rumors. Rely only on advice from responsible public officials.
3. Get away from 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. Do not 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 protect them with storm shutters or tape. Use good lumber securely fastened. Make-shift boarding may do more damage than none at all. Have strong bracing for outside doors.
7. Buy 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. Store drinking water in clean bathtubs, jugs, bottles, and cooking utensils. City water service may be interrupted during the hurricane and wells become polluted.

10. If in one of the evacuation areas, move furniture and other valuables to upper floors to minimize flood damage.
11. Check your battery-powered radio, emergency lights and flashlights. Be sure they are in working condition and keep them handy.
12. Make certain you have gasoline in your car. If electric power is off, filling stations may not be able to operate pumps for several days.
13. Secure 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. Make provisions for children and adults requiring special diets. If anyone in your home has to be removed by ambulance, phone the Emergency Operating Center, EM 1-1111.
15. 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 buses or trucks nor in shelters.
16. If the center or "eye" of the hurricane 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.
17. Be calm. Your ability to meet emergencies will inspire and help others.
18. When your Hurricane Preparedness Committee advises evacuation, follow these instructions promptly:
 - a) Shut off main gas valve and pull main power 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 the 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 buses. 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 to do any tasks which are needed for the efficient operation of the shelter.
- 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. Evacuees 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 seven feet, 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 four-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 two-lane drawbridge across the inlet to the marina. Steps have been taken to replace this bridge with a raised, fixed four-lane structure, which will allow most boats to pass underneath. Boats with masts over twenty feet, 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 feet m.s.l. and is two miles from the beach. All buildings set aside for shelters, the hospital, Emergency Operating Center, and Radio Stations WHPT and WHPT-FM 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 Emergency Planning subsequent to a major disaster declared by the President. 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 Chairmen of the Hurricane Preparedness Committee and the FCC's Homeport Operational Area Industry Advisory Committee. The Chairmen will call an immediate meeting of their Committees to review preparations for emergency procedures.

HURRICANE WATCH: An announcement issued by the 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. Other designated departments of the city will do the same.

4.1.4 All members of the FCC's Homeport Operational Area Industry Advisory Committee will be notified by their Chairman or Vice Chairman to prepare for emergency communications procedures. The Homeport Herald and Stations WHPT/WHPT-FM and WMET 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 additional personnel and equipment to augment the facilities of the Homeport Chapter.

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, State National Guard (Homeport's Co. G), Homeport Coast Guard Station, and the non-government communications industry.

4.1.7 The Homeport 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 Homeport Transit Company will ready all its spare buses and alert its spare drivers.

4.1.9 The Civil Air Patrol 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 the threatened area to control 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 re-enter 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 campers 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 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 All emergency communication systems, plans and procedures of the Homeport OAIAC will be operated continuously until the emergency has ended. Broadcasts over WHPT and WHPT-FM will be made "live" from the Emergency Operating Center and from the Weather Bureau.

Broadcast Stations WHPT and WHPT-FM and Civil Defense will maintain radio communications equipment at the Emergency Operating Center at all times. The following agencies will dispatch a mobile unit in the parking lot near the EOC: City Police, State Police, Sheriff's Office, Fire Department and the Highway Department and the utility companies. These mobile units will enable the EOC 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 Announcements," U. S. Weather Bureau, 1966. (Phonograph record containing 4 one-minute hurricane announcements on one side and tornado announcements on the reverse).

2. "Hurricane Preparedness in Homeport," Homeport Hurricane Preparedness Committee (record or tape prepared each year by local officials).
3. "Hurricane Safety Rules," WHPT and WHPT-FM (record or tape prepared in advance by broadcast stations, text available from Weather Bureau).

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. If the telephone system becomes inoperative, the Homeport Citizen Band Association and Radio Amateur Civil Emergency Services (RACES) will station mobile units at pre-designated locations throughout the city to provide the public with direct communication to the EOC.

5.1.5 All official emergency weather warnings will be transmitted to Radio Stations WHPT/WHPT-FM by the Weather Bureau. These warnings and instructions from the Emergency Operating Center will be made as instantaneous "live" broadcasts whenever possible.

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 Operating 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 Operating Center.

5.1.8 The Emergency Operating 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 Hurricane Preparedness Committee on a schedule that will permit evacuees to reach designated shelters at least nine hours before the time of expected flooding.

6. PLAN A -- EXPECTED TIDE 4 - 8 FEET M.S.L.

(See Charts 1 and 3)

<u>Areas to be Evacuated and Time Required*</u>	<u>Shelters</u>	<u>Routes</u>
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 7th 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. Stations WHPT/WHPT-FM will broadcast hurricane warnings and pertinent information exclusively.

6.2.2 Civil Defense: As soon as warnings to evacuate are broadcast, block wardens will make door-to-door checks in areas to be evacuated to ascertain that everyone is warned, and will immediately phone EM 1-1111 if ambulance service is required. When the evacuation is completed, the wardens will take posts in indicated safe buildings in their area and assist in maintaining guard against fire.

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 Operations Center via the Civil Defense mobile transmitter stations there.

6.4.2 Red Cross: This agency 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.

6.2.6 The Homeport Transit Company will do the following when instructions are received from the Emergency Operations Center:

1. Station four buses at the Marina to take evacuees from the Keys to the Masonic Hall.
2. Operate nine buses 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 eight buses 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 of Homeport. Regular routes will be used in the Area but the terminal will be City Auditorium and 15th Street.

These emergency schedules will operate until the Emergency Operating 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 Operating 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 buses will be picked up by National Guard personnel carriers dispatched by radio from the Emergency Operating 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 Homeport jurisdiction to make sure all boats have sought protection. The planes will notify the Homeport Coast Guard Station by radioing to the FAA station at Homeport 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. The Guard will assist the Red Cross in caring for and feeding 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. The Patrol will notify either the 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, contact will be made through FAA Flight Service 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 FEET M.S.L.

(See Charts 1 and 4)

7.1.1 Same as Plan A plus the following:

<u>Areas to be Evacuated and Time Required</u>	<u>Shelters</u>	<u>Approaches</u>
B (3 hours)	Court House.	W on 25th St.
C (2 hours)	City Hall	W on 24th St.
D (1 hour)	Adams Hotel	N on H St.
E (2 hours)	Christ Church	S on I St.
F (1 hour)	Gem Theatre	W on 5th St.
G (3 hours)	Primary School	W on 10th St.
H (3 hours)	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 Operating Center and will assist in their evacuation if requested.

Emergency Duty Assignments for Evacuation

7.2.1 Communications: Power plant will be flooded so Stations WHPT/WHPT-FM will be operating on their own emergency auxiliary power as the Primary Station in the Homeport Operational Area. In the event that WHPT/WHPT-FM are not able to continue broadcast operations, the Alternate Station, WMET in Metropolis, will carry the full emergency schedule as the 1st Alternate for Stations WHPT/WHPT-FM.

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 Operating Center and try to carry on their duties at the emergency meteorological post there.

7.2.3 Air Traffic Service Facility: This office would be in the same predicament as the Weather Bureau. Hence, the staff will also evacuate to the Emergency Operating 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 Homeport Transit Company as required by Emergency Transit Schedule for Plan B. The Company's bus equipment will be supplemented by ten county school buses and ten 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 the wind reaches 40 mph. Personnel will take shelter in the Field House taking portable radio communications equipment with them.

7.2.11 Coast Guard: Same as for Plan A (Pars. 6.3.13 - 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 National Guard: Same as for Plan A (Par. 6.2.16). In addition, will place ten 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 Operating 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 Operating Center) to notify them of the expected service interruption and to check standby equipment and fuel supplies.

8. PLAN C -- EXPECTED TIDE 13 - 16 FEET M.S.L.

(See Charts 2 and 5)

<u>Areas to be Evacuated and Time Required</u>	<u>Shelters</u>	<u>Routes or Approaches</u>
Turtle, King, Barracuda, and Shark Keys (3 hrs.)	Mound City High School	Boats to Marina, buses via Marina Rd. and N on Route 17, W on Route 18.
All settlements east of Route 17 from North- ville to Homeport (5 hours)	Mound City High and Elementary School	S on Route 17, W on Route 24, N on Route 19.
All settlements east of Route 17 from South- ville to Homeport (5 hours)	Crossville Grammar School	S on Route 17, W on Route 24, N on Route 19.
Homeport Beach (4 hours)	Fairhaven High and Jr. High School	Causeway; N on A St., W on 5th St. and Route 22, S on Route 21.
Area A (3 hours)	Triangle Bldg.	W on 15th Street
B (3 ")	Apex Bldg.	W on 13th Street
C (2 ")	Court House	W on 25th Street
D (3 ")	City Hall	W on 24th Street
E (2 ")	Acme Bldg.	W on 20th Street
F (2 ")	Adams Hotel	W on 17th Street
G (2 ")	King Hotel	S on H Street
H (3 ")	City High	W on 7th Street and E on 8th.
I (2 ")	Masonic Hall	S on N Street
J (3 ")	City Auditorium	W on 15th Street
K (3 ")	Burr High	W on 12th Street
L (3 ")	Primary School	W on 10th Street

8.1.1 Buildings west of the railroad tracks in Homeport proper need not be evacuated above the street floor. This also applies to designated hurricane-safe masonry buildings between G Street and the 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

8.2.1 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 Flight Service 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 the assignment of more trained personnel.

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 ten county school buses and ten 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. 7.2.11).

8.2.12 National Guard: Same as Plan B (Par. 7.2.12) plus evacuating their own Armory.

8.2.13 Civil Air Patrol: Same as Plan A (Pars. 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:

1. Remain in shelters until informed by those in charge that you may return to your homes.
2. Seek medical care at Red Cross disaster stations or hospitals for persons injured during the storm.
3. Avoid loose or dangling wires. Report them to the light and power company, or to the nearest police officer.
4. Report broken sewer or water mains to the water department.
5. Check food that requires refrigeration. It may be spoiled if power has been off for some time.
6. Unless you are qualified to render valuable emergency assistance, stay away from disaster areas. You may hamper first aid or rescue work. Doctors and nurses will be issued special passes.
7. Drive with care. 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 a car. Do not drive unless you must. Roads should be left clear for emergency vehicles.
8. Prevent fires. Lowered water pressure may make fire-fighting difficult.
9. 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. Free counselling service and grants of financial assistance on an individual family basis determined by the family's ability to help itself are available at Red Cross disaster headquarters upon each family's application. These are to meet family disaster-caused problems involving a need for food, clothing, repair or rebuilding of homes, and medical and nursing care. The Red Cross through its welfare inquiry service and in cooperation with the Post Office Department will have available cards by which affected families may notify relatives of their post-hurricane status and reestablish receiving their mail promptly.

APPENDIX A -- SAMPLE HURRICANE ADVISORY

ESSA MIAMI WEATHER BUREAU HURRICANE ADVISORY NUMBER 20 LADY 11 AM EST
AUGUST 28 1958.

DESTRUCTIVE WINDS AND HIGH TIDES TO STRIKE SOUTH FLORIDA TODAY.

THE WEATHER BUREAU ADVISES THAT A HURRICANE EMERGENCY WARNING HAS BEEN ISSUED ON BOTH SIDES OF THE FLORIDA PENINSULA FROM STUART AND VENICE SOUTHWARD INCLUDING LAKE OKEECHOBEE AND THE KEYS SOUTHWARD AS FAR AS TAVERNIER. A DANGEROUS HURRICANE NOW THREATENS MOST OF SOUTH FLORIDA. SAFETY PRECAUTIONS SHOULD BE RUSHED WITH ALL POSSIBLE URGENCY ON THE SOUTHEAST COAST AND COMPLETED BY NO LATER THAN 5 PM TODAY AND SHOULD BE STARTED ON THE WEST COAST SOUTH OF TARPON SPRINGS.

IN THE HURRICANE AREA STORM TIDES WILL FLOOD COASTAL LANDS BAYS AND INLETS HEIGHTS UP TO ABOUT 8 FEET ABOVE NORMAL TIDE LEVELS FOR THIS DATE WITH HIGH SWELLS AND WAVES ON THE COAST. DESTRUCTIVE WINDS AND DANGEROUSLY HIGH STORM TIDES WILL BEGIN BY EARLY THIS EVENING ON THE SOUTHEAST FLORIDA COAST WITH STRONGEST WINDS AND HIGHEST TIDES OCCURRING THURSDAY MORNING. ALL PERSONS IN THE COASTAL AREA FROM MIAMI TO STUART ARE URGED TO EVACUATE IMMEDIATELY BEFORE RISING WATERS CUT OFF ESCAPE. FOR DETAILED INFORMATION ON EVACUATION CONSULT THE LATEST ADVICES FROM LOCAL PUBLIC OFFICIALS. EVACUATION RECOMMENDATIONS FOR THE WEST COAST WILL NOT BE MADE AT THIS TIME BUT THERE WILL BE DANGEROUSLY HIGH STORM TIDES TOMORROW THURSDAY AS FAR NORTH AS VENICE.

MANY INLAND LOW PLACES IN SOUTHERN FLORIDA ARE ALREADY SATURATED OR HAVE STANDING WATER DUE TO THE HEAVY SUMMER RAINS. THE TORRENTIAL RAINFALL EXPECTED FROM THIS HURRICANE WILL ADD AN ADDITIONAL FOOT OR TWO OF WATER IN MANY LOW PLACES.

A HURRICANE WATCH AND WHOLE GALE WARNINGS CONTINUE OUTSIDE THE AREA OF HURRICANE WARNING FROM MELBOURNE THROUGH THE KEYS AND NORTHWARD ON THE WEST COAST TO CEDAR KEYS. GALE WARNINGS EXTEND BEYOND THIS AREA ON THE ATLANTIC COAST TO DAYTONA BEACH AND ON THE GULF COAST TO APALACHICOLA.

THERE IS A POSSIBILITY OF A FEW TORNADOES IN SOUTHEAST FLORIDA THIS AFTERNOON ASSOCIATED WITH RAIN SQUALLS WHICH ARE EXPECTED IN ADVANCE OF THE HURRICANE.

SMALL CRAFT SHOULD REMAIN IN PORT ALL ALONG THE EAST FLORIDA COAST AND ALONG THE GULF COAST FROM THE MOUTH OF THE MISSISSIPPI EASTWARD. ALL SMALL CRAFT IN AND NEAR THE AREA OF HURRICANE DISPLAY SHOULD SEEK PLACES OF SAFETY IMMEDIATELY.

EMERGENCY HURRICANE PRECAUTIONS SHOULD BE CONTINUED IN THE EXTREME WESTERN BAHAMAS THIS AFTERNOON AND TONIGHT AGAINST HURRICANE WINDS AND DANGEROUSLY HIGH SEAS AND TIDES. THE CENTER WILL PASS OVER OR VERY NEAR NASSAU WITHIN A FEW HOURS AND MIAMI TONIGHT.

AT 11 AM EST...1600Z...THE CENTER OF HURRICANE LADY WAS ESTIMATED ABOUT 225 MILES EAST SOUTHEAST OF MIAMI OR NEAR LATITUDE 24.8 N LONGITUDE 77.0 W. HOWEVER AT THAT TIME THE FORWARD EDGE OF THE DANGEROUS WINDS WAS ONLY 80 MILES EAST OF MIAMI. THE STORM IS MOVING TOWARD THE WEST NORTHWEST AT ABOUT 12 MPH. LITTLE CHANGE IN THE SPEED AND DIRECTION OF THE STORM IS EXPECTED DURING THE NEXT 12 HOURS.

HIGHEST WINDS ARE ESTIMATED AT 125 MILES AN HOUR WITH OCCASIONAL GUSTS TO 160 MILES AN HOUR NEAR THE CENTER WITH HURRICANE FORCE WINDS EXTENDING OUTWARD 60 MILES TO THE NORTH AND WEST AND 30 MILES TO THE EAST AND SOUTH. GALE FORCE WINDS EXTEND OUTWARD 125 MILES FROM THE CENTER. THE STORM IS EXPECTED TO REMAIN ABOUT THE SAME SIZE AND INTENSITY DURING THE NEXT 12 HOURS. THE LOWEST PRESSURE IN THIS SEVERE HURRICANE IS 955 MBS OR 28.20 INCHES. AT 10 AM NASSAU WAS REPORTING NORTHEASTERLY WINDS IN EXCESS OF 100 MPH.

THE NEXT REGULAR ADVISORY ON HURRICANE LADY WILL BE ISSUED FROM THE MIAMI WEATHER BUREAU AT 5 PM EST. INTERMEDIATE BULLETINS WILL BE ISSUED FROM THIS OFFICE AT 2-HOURLY INTERVALS.

DOE WEATHER BUREAU MIAMI

APPENDIX B -- SAMPLE BULLETIN

ESSA MIAMI WEATHER BUREAU BULLETIN LADY 1 PM EST FRIDAY SEPTEMBER 7 1962.

SEVERE HURRICANE LADY CONTINUES TO MOVE TOWARD THE KEYS AND SOUTH FLORIDA.

HURRICANE WARNINGS ARE IN EFFECT IN EXTREME SOUTHERN FLORIDA FROM FORT LAUDERDALE THROUGH THE KEYS TO PUNTA GORDA. GALE WARNINGS ARE DISPLAYED NORTH TO VERO BEACH ON THE EAST COAST AND TO ST. MARKS ON THE GULF COAST. A HURRICANE WATCH CONTINUES NORTH FROM FORT LAUDERDALE TO MELBOURNE ON THE EAST COAST AND FROM PUNTA GORDA TO CEDAR KEYS ON THE GULF COAST.

EMERGENCY SAFETY PRECAUTIONS SHOULD BE COMPLETED AT THE EARLIEST POSSIBLE MOMENT FROM FORT LAUDERDALE THROUGH THE KEYS TO PUNTA GORDA. LIGHTHOUSES OFF THE MIDDLE KEYS ARE NOW EXPERIENCING SQUALLS OF CLOSE TO HURRICANE FORCE AND WINDS ARE INCREASING. STORM TIDES ARE FORECAST UP TO 7 FEET ABOVE NORMAL AT KEY LARGO AND AS HIGH AS 11 FEET AT PLACES IN THE MIDDLE KEYS MOST SUSCEPTIBLE TO STORM TIDES. STORM TIDES IN THE CARD SOUND HOMESTEAD AREA SHOULD RANGE FROM 4 TO 6 FEET AND NORTH OF HOMESTEAD TO POMPANO BEACH FROM 2 TO 4 FEET ABOVE NORMAL. THE HIGH STORM TIDES WILL BE ACCOMPANIED BY HIGH WAVES AND BATTERING SURF. ALL PERSONS IN COASTAL AREAS SUBJECT TO FLOODING FROM THESE TIDES OR WITHIN REACH OF THE HIGH WAVES AND BREAKERS SHOULD MOVE TO SAFE REFUGE. FOR FURTHER AND MORE DETAILED INFORMATION ON EVACUATION CONSULT THE LATEST ADVICES FROM LOCAL PUBLIC OFFICIALS.

IT IS EMPHASIZED THAT THIS IS AN EMERGENCY WARNING IN THE AREA FROM FORT LAUDERDALE TO PUNTA GORDA AND PARTICULARLY ON THE FLORIDA KEYS. IT IS EXTREMELY URGENT THAT EVACUATION IN ALL REQUIRED AREAS BE COMPLETED IN THE NEXT HOUR OR TWO SINCE FLOODING SHOULD BEGIN AT LOW POINTS ON THE OVERSEAS HIGHWAY VERY SHORTLY.

SMALL CRAFT IN THE SOUTHWESTERN BAHAMAS, THE WEST AND CENTRAL COAST OF CUBA AND ON THE FLORIDA COASTS FROM ST. MARKS AND MELBOURNE SOUTHWARD SHOULD REMAIN IN SECURE HARBOR. PERSONS ARE REMINDED THAT ATTEMPTS TO SECURE BOATS AT THE HEIGHT OF THE HURRICANE FREQUENTLY RESULT IN CASUALTIES. IT IS DANGEROUS TO TRAVEL ON THE HIGHWAY AFTER THE TORRENTIAL RAINS AND HIGH WINDS OF THE HURRICANE HAVE STARTED.

AT 1 PM THIS SEVERE HURRICANE WAS CENTERED APPROXIMATELY 150 MILES SOUTH SOUTHEAST OF MIAMI AND ABOUT THE SAME DISTANCE EAST SOUTHEAST OF KEY WEST.

THE HURRICANE CONTINUES MOVING TOWARD THE WEST NORTHWEST AT ABOUT 12 MILES AN HOUR BUT AIRPLANE RECONNAISSANCE AND RADAR REPORTS DURING THE LAST 2 HOURS SHOW A CONTINUING VERY GRADUAL TENDENCY TOWARD A MORE NORTHWESTWARD MOVEMENT. IT IS LIKELY THAT THE HIGHEST WINDS AND TIDES WILL OCCUR IN THE MIDDLE KEYS. THE CENTRAL PRESSURE CONTINUES STEADY AT ABOUT 27.85 INCHES. HIGHEST WINDS ARE ESTIMATED AT 135 MILES AN HOUR NEAR THE CENTER.

THE NEXT ADVISORY ON SEVERE HURRICANE LADY WILL BE ISSUED BY THE MIAMI WEATHER BUREAU AT 5 PM EST AND AN INTERMEDIATE BULLETIN AT 3 PM.

DOE WEATHER BUREAU MIAMI

APPENDIX C -- SAMPLE LOCAL STATEMENT

STATEMENT NUMBER 4 ESSA WEATHER BUREAU OFFICE GALVESTON TEXAS 10:30 PM CST
SEPTEMBER 9, 1961.

CONTINUE KEEPING IN CONSTANT TOUCH WITH ALL WEATHER BUREAU ADVISORIES BULLETINS AND LOCAL STATEMENTS CONCERNING DANGEROUS HURRICANE CARLA. HURRICANE WARNINGS ARE DISPLAYED FROM ARANSAS PASS TEXAS TO GRAND ISLE LA. ALL PERSONS AND INTERESTS IN EXPOSED PLACES ALONG THE ENTIRE UPPER TEXAS COAST AND ADJACENT BAYS WHO HAVE NOT EVACUATED SHOULD DO SO IMMEDIATELY. CONSULT THE LATEST ADVICES FROM LOCAL PUBLIC OFFICIALS FOR FURTHER DETAILS ON EVACUATION.

THE PRESENT TIDE IN GALVESTON IS 4 AND ONE HALF FEET ABOVE NORMAL AND SLOWLY INCREASING. A MORE RAPID RISE IS INDICATED TOMORROW REACHING A POSSIBLE CLIMAX OF 10 TO 15 FEET AS THE HURRICANE CENTER MOVES INLAND.

ALL PERSONS PLANNING TO EVACUATE GALVESTON ISLAND SHOULD DO SO IMMEDIATELY SINCE THE LOWER SECTIONS OF THE HOUSTON-GALVESTON FREEWAY LIKELY WILL BE FLOODED BEFORE DAYLIGHT. PERSONS NOT EVACUATING GALVESTON ISLAND SHOULD SEEK SAFE SHELTER TONIGHT AND BE PREPARED TO REMAIN THERE UNTIL THE HURRICANE HAS PASSED. A 15 FOOT STORM TIDE WILL FLOOD 90 PERCENT OR MORE OF GALVESTON ISLAND.

BOLIVAR PENINSULA IS NOW ISOLATED BY HIGH WATER AND ANY PERSONS REMAINING BETWEEN PORT BOLIVAR AND HIGH ISLAND SHOULD SEEK SAFETY IN THE CIVIL DEFENSE SHELTER AT OLD FT. TRAVIS AT PORT BOLIVAR.

LARGE SECTIONS OF THE TEXAS CITY - LA MARQUE - HITCHCOCK - MAINLAND AREA WILL BE FLOODED IF THE MAXIMUM EXPECTED STORM TIDES ARE EXPERIENCED IN THIS AREA AND PERSONS IN THE LOWER SECTIONS OF THESE AREAS SHOULD PREPARE FOR POSSIBLE EVACUATION EARLY TOMORROW.

ALL INTERESTS ON GALVESTON BAY SHOULD PREPARE FOR RISING STORM TIDES REACHING AS MUCH AS 15 FEET LATER TOMORROW. IN THE UPPER REACHES OF THE BAY AND UP THROUGH THE HOUSTON SHIP CHANNEL STORM TIDES CAN PILE UP TO EXCEED 15 FEET. BECAUSE OF ITS COMPARATIVELY LOWER ELEVATIONS THE KEMAH - SEABROOK - CLEAR LAKE AREA IS CONSIDERED TO BE ONE OF THE MOST VULNERABLE AREAS ALONG THE WESTERN SHORE OF GALVESTON BAY NORTH OF TEXAS CITY. IN ADDITION TO THE CLEAR LAKE - CLEAR CREEK AREA STORM TIDES WILL CAUSE SEVERE FLOODING ALONG ALL BAYOUS AND INLETS INTO THE BAY. THIS INCLUDES DICKINSON BAYOU AND HIGHLAND BAYOU IN THE HITCHCOCK AREA.

ALL INTERESTS ALONG THE COAST SOUTHWEST OF GALVESTON ISLAND INCLUDING FREEPORT SARGENT BEACH MATAGORDA MATAGORDA ISLAND AND MATAGORDA PENINSULA SHOULD PREPARE FOR POSSIBLE 10 TO 15 FOOT STORM TIDE TOMORROW. ALL COASTAL EVACUATIONS NOT ALREADY COMPLETED SHOULD BE COMPLETED TONIGHT.

REMEMBER THAT THE MOST EXTREME STORM TIDES WILL OCCUR IN THE VICINITY OF THE EYE AND EXTENDING APPROXIMATELY 100 MILES EAST OF WHERE THE HURRICANE EYE CROSSES THE COAST TOMORROW.

DOE WEATHER BUREAU GALVESTON

EVACUATION PLANS A AND B **FOR EXPECTED STORM TIDES OF 4-8 AND 9-12 Ft.MSL** **HOMEPORT HURRICANE PREPAREDNESS DISTRICT**

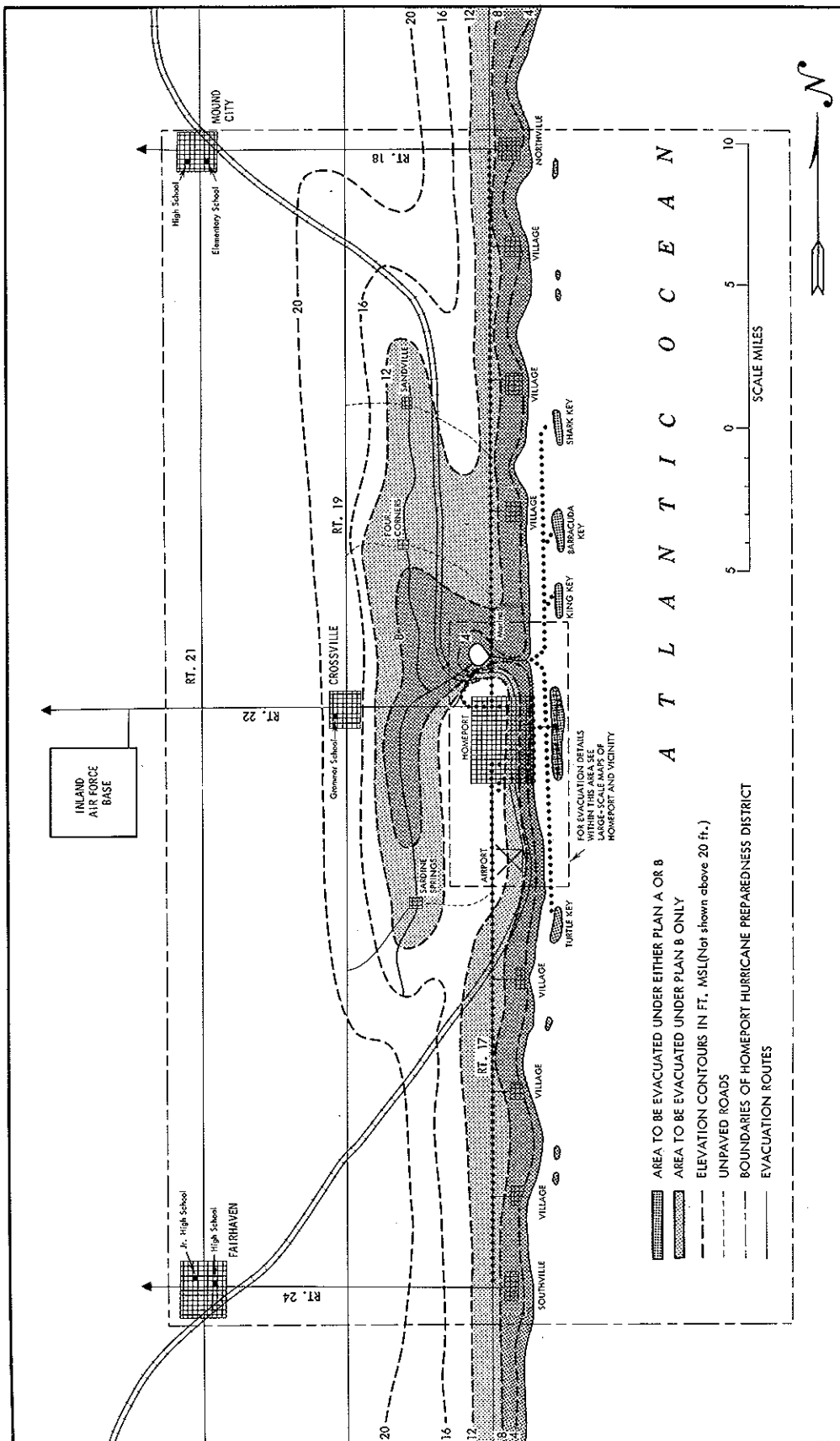


CHART 1

EVACUATION PLAN C FOR EXPECTED STORM TIDES OF 13-16 FT. MSL HOMEPORT HURRICANE PREPAREDNESS DISTRICT

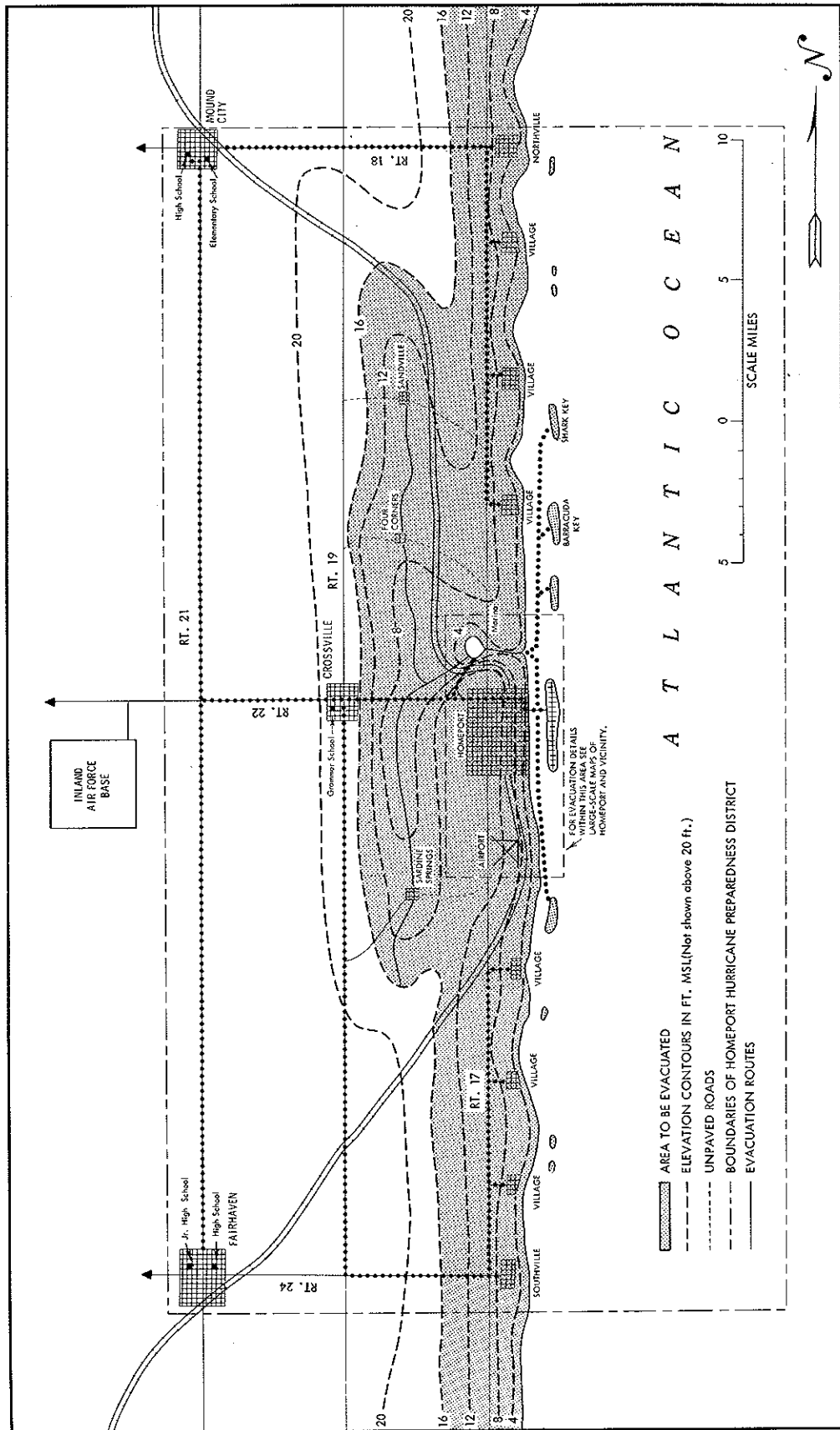


CHART 2

NOTE
Buildings west of D st. need not be evacuated above street floor

SHELTERS

- 1 Armory
- 2 Elementary School
- 3 First Church Emergency Hospital
- 4 City Auditorium
- 5 City High School
- 6 Masonic Hall

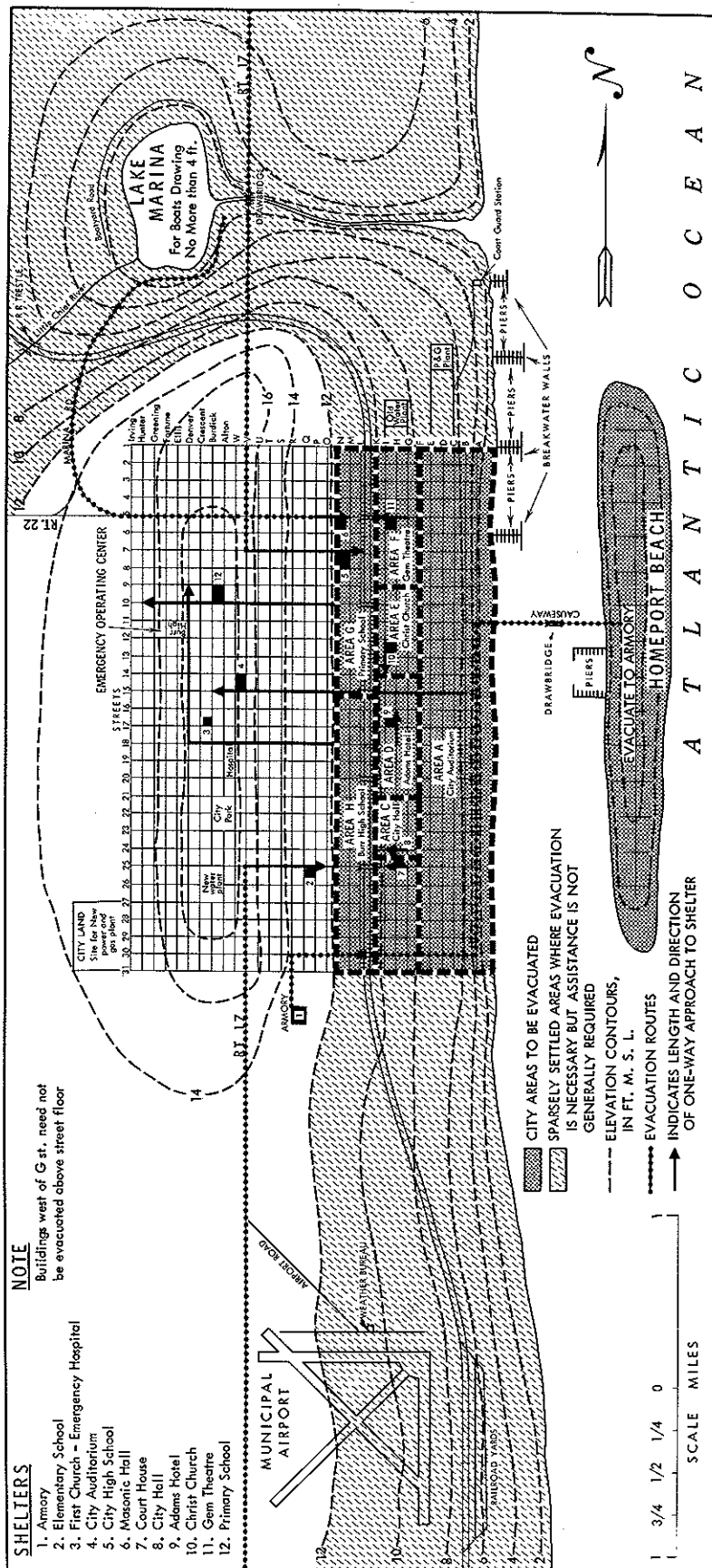
LEGEND

- CITY AREAS TO BE EVACUATED
- SPARSELY SETTLED AREAS WHERE EVACUATION IS NECESSARY BUT ASSISTANCE IS NOT GENERALLY REQUIRED
- ELEVATION CONTOURS, IN FT., M., S. L.
- EVACUATION ROUTES
- INDICATES LENGTH AND DIRECTION OF ONE-WAY APPROACH TO SHELTER

SCALE MILES
1 3/4 1/2 1/4 0

A T L A N T I C O C E A N

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



EVACUATION PLAN C FOR EXPECTED STORM TIDE OF 13-16 Ft., MSL HOMEPORT AND VICINITY

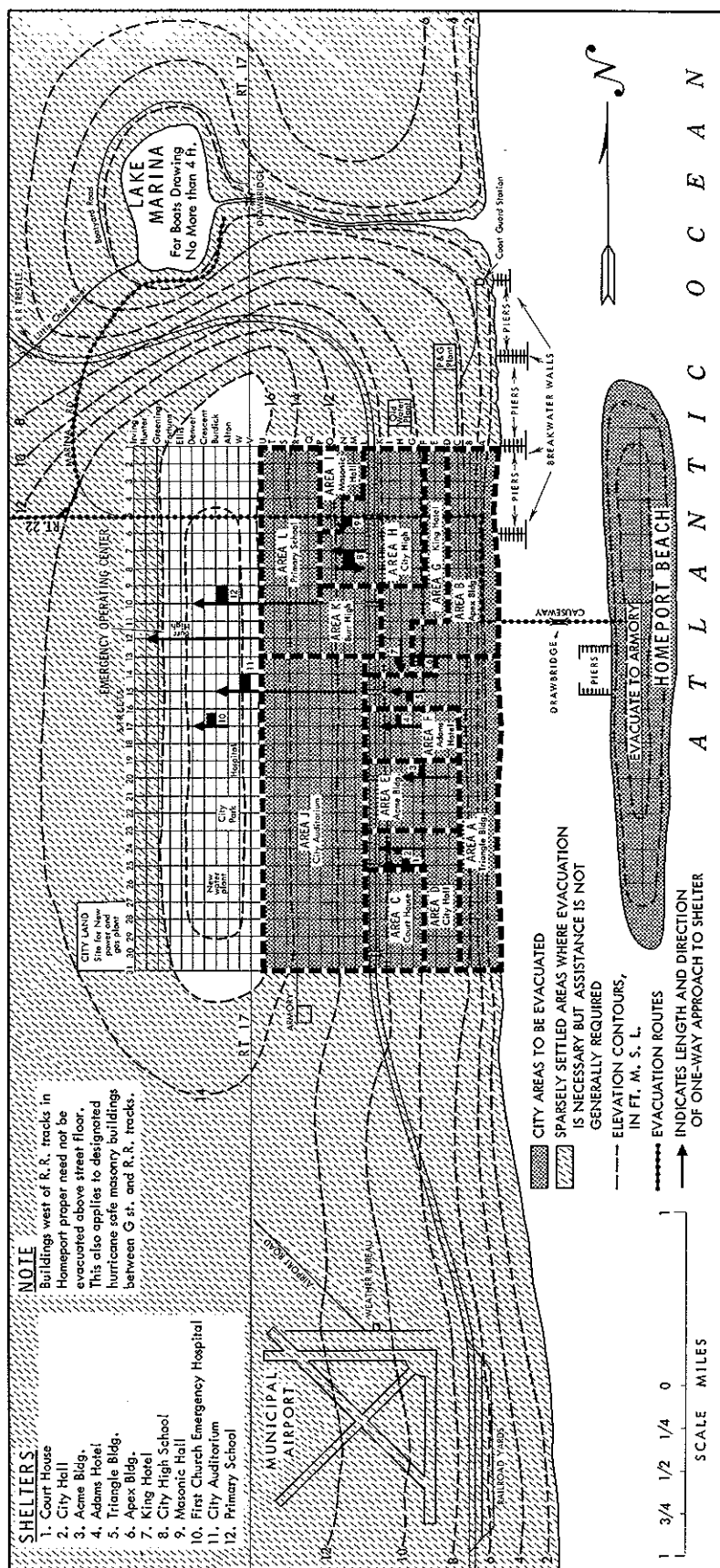


CHART 5