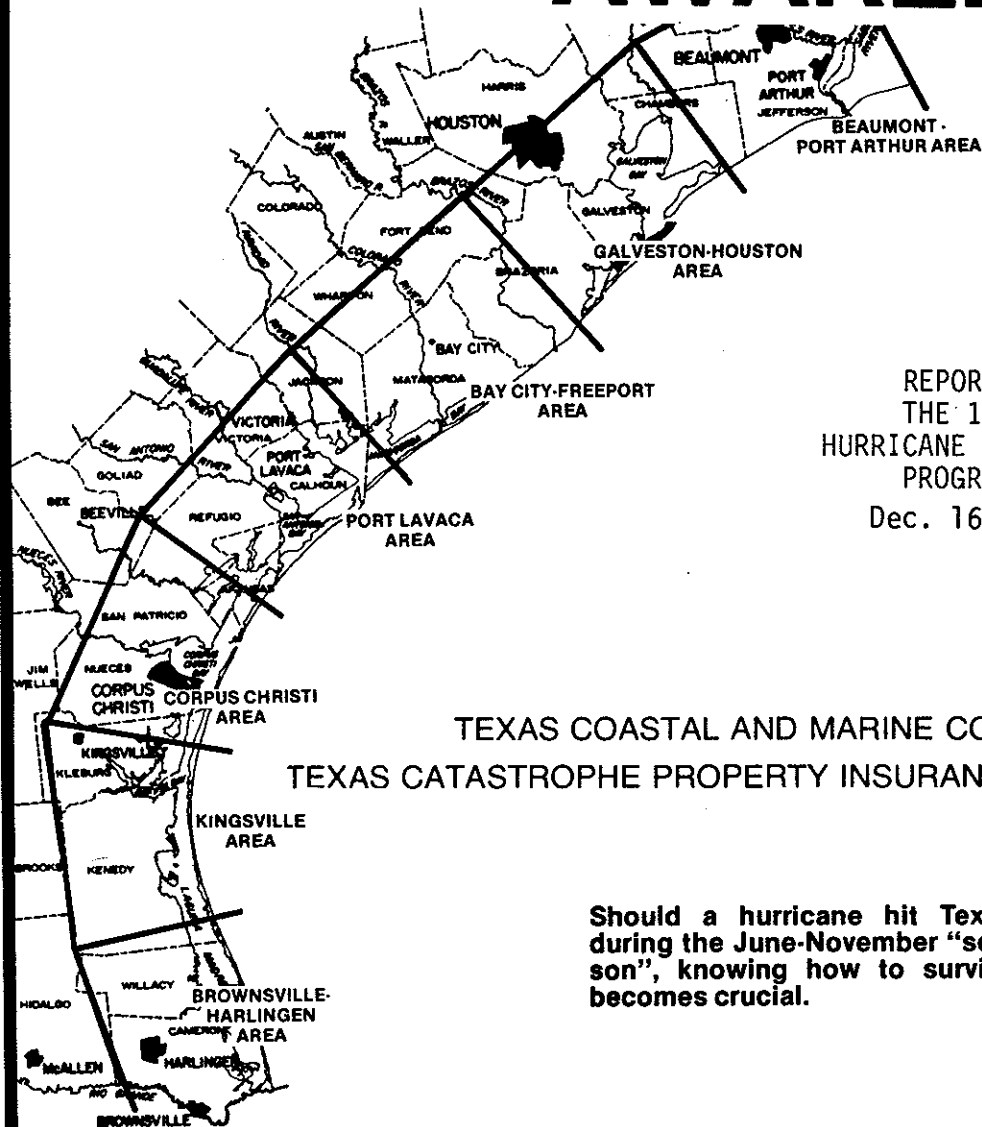


# HURRICANE AWARENESS



REPORT OF  
THE 1975  
HURRICANE AWARENESS  
PROGRAM  
Dec. 16, 1975

TEXAS COASTAL AND MARINE COUNCIL  
TEXAS CATASTROPHE PROPERTY INSURANCE ASSOCIATION

Should a hurricane hit Texas  
during the June-November "sea-  
son", knowing how to survive  
becomes crucial.



INSURANCE INFORMATION INSTITUTE

400 San Jacinto Building

9th and San Jacinto Streets • Austin, Texas 78701



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WILLIAM C. SIMPSON, VICE CHAIRMAN OF THE BOARD  
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**TEXAS OFFICE**

CLINT DARE, MANAGER

ACCREDITED BY THE PUBLIC RELATIONS SOCIETY OF AMERICA

December 16, 1975

TO: SEN. A. R. SCHWARTZ  
Chairman, Texas Coastal and Marine Council  
ORAN NEEDHAM  
Chairman, Texas Catastrophe Property Insurance Association

Gentlemen:

This is the final report of the 1975 hurricane awareness program.

It represents the observations and opinions of only one participant in the program, and therefore should not preclude data received from other sources. Since this office was primarily concerned with the public relations aspect, and then only as it reflected the combined efforts of both the Council and the TCPIA, there may be significant additional judgments worth considering. But with this qualification understood, it appears that the program was successful. If you'll pardon the description, there is a temptation to add that the program could even be said to have been tremendously successful.

Hurricane awareness obviously is an ongoing concern; the projects related to this should be as well.

In many respects, this was a pilot project. It may be properly considered as a significant step forward toward an objective of informing Texas coastal residents and property owners about the potential problems (and how to cope with them) should a major hurricane hit the state. It would seem to be a program worthwhile in every respect. Cooperation is the key to insuring that advance preparation is achieved. It has now been demonstrated effectively at one point: there are still more benefits to be realized from continuing in future years.

Comments and suggestions are encouraged. The next year can bring even greater accomplishments.

Sincerely,

*Clint*  
Clint Dare

## REPORT OF THE 1975 HURRICANE AWARENESS PROGRAM

(A cooperative effort of the Texas Coastal and Marine Council and the Texas Catastrophe Property Insurance Association)

BACKGROUND: Public information about the potential problems arising from a natural catastrophe, such as a hurricane, is increasing by the year for Texas coastal residents and property owners. All of this material is well-conceived. However, with the increase in public information there is a related increase in the number of organizations making the information available.

Every group wants to do its part at warning/advising/prodding coastal area residents to commit to memory--in advance of disaster--all of the necessary steps for survival in an emergency caused by a hurricane. When a "Big One" hits, everyone agrees that it is largely too late for effective communication and many lives and countless dollars of property loss will result, especially for the ill-prepared. On this point, all agree: state agencies, local governments, federal bureaus and agencies, civic organizations, public officials--a virtually endless list, though some are of course more active than others in their pursuit of the objective.

Inevitably under these circumstances, of a multiplicity of programs, which is fairly typical, there is duplication of effort. Some of these interests are operating under a plan of action which may appear to be a coordinated plan. Some are not. At any rate, there is no effective overall plan, embracing all concerns, or if there is one, it's not apparent. This may or may not be a continuing problem. It would seem, nonetheless, that there is enough common material and shared objectives to suggest the need for immediate steps toward such a master plan. If it were not obvious on its face, other factors should make it so. These include foremost the very real competition for the attention of the Texas coastal area residents. There are, after all, other things to occupy and/or divert the interests of the public besides the real need to be aware about hurricanes. It's doubtful that any one group, working independently of others, even on a similar program, could possibly cut through and make the desired impact.

It was this realization that brought the Texas Coastal and Marine Council and the Texas Catastrophe Property Insurance Association (TCPIA) together in this 1975 hurricane awareness program. The Texas Coastal and Marine Council, in fact, had already produced an abundance of useful information, and had been successful in getting it into most of the right hands. But the "right hands" should include every potentially affected individual, and this is too big a task for any one group. Representatives of the Council understood this. With only minor additions, and these largely based on increasing emphasis on the means to protect property, members of the TCPIA board felt their intentions were compatible with the Texas Coastal and Marine Council program. It was in this spirit that a joint effort was proposed in 1975, and ultimately carried out. Perhaps others will join future efforts. But a major step has been taken. How successful this first major step was remains to be seen, but preliminary judgments are that it was highly successful, especially when the limited budgets and personnel for both groups are considered.

PURPOSE of the 1975 Hurricane Awareness Program: To reach as many residents and property owners in the Texas coastal area with an effective message about the need to prepare in advance for a major natural catastrophe. Within the confines of a limited budget, every available public relations tool was to be used to full advantage.

COMPONENTS of the 1975 Hurricane Awareness Program included

- Direct mail. Public officials (such as the mayors of coastal communities) and appropriate agencies (such as the National Weather Service, Department of Public Safety) were notified in some manner about the program. Material was provided.
- Publicity. Both the Texas Coastal and Marine Council and the TCPIA acted independently in some cases in terms of publicizing the hurricane awareness program. This was largely because of the newness of the relationship, the separately established contacts and responsibilities, and the previously successful effort already made by the Texas Coastal and Marine Council. However, there was an extensive effort on a combined basis through the Texas Office of the Insurance Information Insititute.
- Radio. Public service announcements were sent to all radio stations in the coastal area. There were several approaches used, including separate messages from Sen. A. R. Schwartz and State Insurance Board chairman Joe Christie. One sound track was in Spanish.
- TV. Eight 16mm public service announcements were made available to the appropriate television stations. The messages were keyed to encouraging responses from viewers by including the necessary address information and comments about how to receive a "hurricane survival checklist". One spot was in Spanish.
- Media Information Kit. This was assembled, produced and distributed by the Texas Office of the Insurance Information Institute. The kit included features, newspaper clippings, camera-ready versions of the hurricane survival checklist, background material from Texas A & M and the Texas Highway Department and the National Oceanic and Atmospheric Administration, and other information designed to create interest and to provide a ready source book about hurricanes and hurricane survival

--"Hurricane Survival Checklist". This represented the key element of the entire hurricane awareness program. It was a large printed piece, folded to letter-size for mailing purposes. It was first developed and used by the Texas Coastal and Marine Council in 1974. Improvements were made in its design for 1975, and additional information was included to make it an even more effective piece. The hurricane survival checklist remained constant, but there were seven maps produced keyed to a particular area on the coast: Brownsville, Kingsville, Corpus Christi, Port Lavaca, Bay City, Galveston and Beaumont. Lists were appropriately coded. The maps for each area illustrated the extent to which recent hurricanes have flooded Texas coastal areas. The maps were prepared by the Bureau of Economic Geology at The University of Texas-Austin, and derived in part from the U. S. Corps of Engineers' data. This basic piece of literature was mentioned as being available in nearly every news release and mailing related to the project.

--Public Service Advertisements. Camera-ready public service newspaper advertisements were provided for all newspapers in the "hurricane area". Their use depended solely on the discretion of the individual newspaper management. The use of this material far exceeded expectations, and is to the credit of public-spirited newspaper executives, since public service advertising, by definition, is a contribution of free space.

A COMMENT: It's difficult to measure the effectiveness of a project such as the 1975 hurricane awareness program. This is unfortunate to the extent that any final judgments oftentimes have to be based on subjective analysis. The number of clippings from newspapers, for instance, may provide some data, assuming that (1) all clippings were secured and (2) the clippings represented readership. With television and radio public service announcements there is the same difficulty: some feedback can be gathered about the use, but it is presently impossible to calculate exactly how many spots were used, when, where, and then had their message received. With literature, such as the hurricane survival checklist, the problems continue: the number distributed can be determined, but how many people saw the material and then used it is again impossible to calculate. Given these qualifications, can it be definitely stated that a program was successful? Probably not--except with heavy emphasis on the subjective aspects. However, using most of the available measures, there can be some impressive evidence, and this was the case with the 1975 hurricane awareness program.

For example, the following is a breakdown of the distribution totals of the hurricane survival checklist.

<u>Area</u>	<u>Individual Requests</u>	<u>Number Requested</u>
Beaumont	297	2,089
Galveston	1,978	15,979
Bay City	167	3,045
Port Lavaca	380	1,735
Corpus Christi	336	3,136
Kingsville	17	674
Brownsville	431	1,129
*Multi-Area	501	-
*Complete Sets	169	-
	<u>4,276</u>	<u>27,787</u>

This, it should be noted, is the distribution in response to individual requests. These individual requests were made virtually in every case by a personal letter. Generating a sizeable number of requests in this manner is the most difficult of all approaches, because it involves several steps of communication: (1) the availability of the material has to be announced and the message received, and (2) someone has to take the initiative to do something about it, like write a letter. Based on this, the 4,276 individual requests would appear by many measures to represent an unqualified success. It exceeded, in fact, all projections. The number of individual requests has a multiplied impact when coupled with the more than 27,000 survival lists that this group desired. This means that large numbers of these individuals intended to further distribute the material. This required additional personal initiative. There is no way to calculate how many individual readers this represented, but multiple readership can fairly be assumed.

The mechanics of the distribution were handled by the Texas Coastal and Marine Council, and represented a significant contribution to the overall success. This was somewhat complicated because of the different maps required for different areas, but in any event was a monumental task well-handled.

REACTION. One response in particular demonstrated the value of the program in many respects. A post card inquiry from a Texas City couple, asking for several hurricane survival checklists for the local senior citizens' organization, said: "Please mail the free hurricane survival checklist for Galveston County. We lost all our possessions in Carla. We are senior citizens and my husband is an invalid, so we must leave early."

There were other less emotional replies from other segments. One from a radio station, commenting on the media information kit and public service announcements, said "very good". Remarks from newspaper executives included "well-planned and produced"; "appreciate information and will use some of it"; "excellent"; "very helpful"; "timely--thanks"; "we're happy to use the material"; "very impressive and comprehensive"; "very informative--will definitely use to maximum"; "good. . .excellent--send us all you can"; "great for somebody who grew up inland". A television public service director said "we appreciate receiving innovative spots of superior quality with important messages--thanks!".

*The following pages are samples of how some of the material was received and how it was used. It is incomplete, but representative.*



**DIVISION OF DISASTER EMERGENCY SERVICES**  
**TEXAS DEPARTMENT OF PUBLIC SAFETY**

5805 N. Lamar Blvd.  
 Box 4087  
 Austin, Texas 78773  
 512/452-0331, Ext. 295  
 September 29, 1975

DOLPH BRISCOE  
 Governor

WILSON E. SPEIR  
 Director

M. P. BOWDEN  
 Coordinator

Mr. Clint Dare  
 Insurance Information Institute  
 9th and San Jacinto  
 Austin, Texas 78701

Dear Mr. Dare:

This is to confirm receipt of your recently published Hurricane Awareness Kit. In our opinion, it puts together in a highly readable form those isolated bits of information so necessary to reduce the loss of lives and property when these unpredictable "ladies" decide to pay us a visit.

I asked me to acknowledge the package, I am taking (2) additional copies, if available.

Our staff members in preparation of are on emergency preparedness.

The State of Texas  
 Office of the Lieutenant Governor  
 Austin

September 30, 1975



WILLIAM P. HOBBY  
 LIEUTENANT GOVERNOR

Mr. Clint Dare  
 Insurance Information Institute  
 400 San Jacinto Building  
 9th & San Jacinto Streets  
 Austin, Texas 78701

Dear Mr. Dare:

Just a note to thank you for providing me with a copy of the Hurricane Awareness Media Kit prepared by the Texas Coastal and Marine Council on the Texas Catastrophe Property Insurance Association. Your thoughtfulness is appreciated.

The key to reduction of personal and property losses resulting from hurricanes lies in the success of public information programs which are designed to inform the public of what should be done in advance of, during and after a hurricane. The hurricane awareness program of the Texas Coastal and Marine Council on the Texas Catastrophe Property Insurance Association has made great progress in improving the public's understanding of hurricanes and the media kit is most impressive for both its scope and thoroughness.

Sincerely,

*Bill Hobby*

DB/dls

Sincerely yours,  
*Dolph Briscoe*  
 Dolph Briscoe  
 Governor of Texas



DOLPH BRISCOE  
 GOVERNOR

OFFICE OF THE GOVERNOR  
 EXECUTIVE OFFICE BUILDING  
 September 24, 1975

Mr. Clint Dare  
 Insurance Information Institute  
 400 San Jacinto Building  
 9th & San Jacinto Streets  
 Austin, Texas 78701

Dear Mr. Dare:

Thank you very much for providing me with the Media Kit on Hurricane Awareness that was created by the Texas Coastal and Marine Council and the Texas Catastrophe Property Insurance Association.

Public awareness and education of this type is extremely important to the citizens of Texas. I want to commend you and the Texas Catastrophe Property Insurance Association for its part in this very important joint program.

Again, I want to express my appreciation for your sending this to me, and I will be sharing it with my state coordinator for the Governor's Division of Disaster Emergency Services.

PLAYCARE CENTERS OF AMERICA, INC.  
P. O. Box 1496  
Galveston, Texas 77550



May 23, 1975

Hurricane  
Box 13407  
Austin, Texas 78711

Dear Sirs:

As per newspaper article in the Islander and The Mainlander newspaper published in Galveston, Texas on Wednesday, May 21, 1975, please send to the address shown above a free copy of the checklist and map which shows the potential danger from a hurricane by indicating the extent of flooding caused by hurricane Beulah (1967) and Carla (1961) which was developed by the Texas Coastal and Marine Council and the Texas Catastrophe Property Insurance Association.

Thank



cc: 2228 Kentucky Baytown, Texas 77520

August 8, 1975

Hurricane  
Box 13407  
Austin, Texas 78711

Dear Sir:

Please send me your information about Hurricane prep and preparation, especially am I interested in the check



LOCKHEED ELECTRONICS COMPANY, INC.  
AEROSPACE SYSTEMS DIVISION

10011 EL CAMINO REAL • HOUSTON, TEXAS 77058 • TELEPHONE (AREA CODE 713) 488-6880

11 August 1975

HURRICANE  
Box 13407  
Austin, Texas 78711

Dear Sir:

Please send me 2,200 "If A Hurricane Strikes!" information folders. You all did an excellent job on putting that information series together

Very truly yours

Geography Department  
San Jacinto College  
A PUBLIC JUNIOR COLLEGE  
8040 SPENCER HIGHWAY  
PASADENA, TEXAS 77505

September 5, 1975



Hurricane  
Box 13407  
Austin, TX 78711

Gentlemen:

Please send me 2 copies of the hurricane map and hurricane survival check list made available by the Texas Coastal and Marine Council and the Texas Catastrophe Property Insurance Association. Both copies will be used in instruction at this institution-- 1 copy in the classrooms and 1 copy on the bulletin boards.

GALVESTON COUNTY REACT  
P.O. Box 2023  
Texas City, Texas 77590

HURRICANE  
Box 13407  
Austin, Texas 78711

RE: Hurricane Maps - Galveston Area

Dear Sir:

REACT is an Radio Emergency Action Citizen's Team, herein the GALVESTON AREA (County). We work directly with the Civil Defense during the Emergency situations and whenever needed by the local authorities. Our membership is in excess of 100 and I would like to know if it would be possible to obtain the above listed maps for the majority of our members?

Should there be any map promptly circulated to the be given to the local new

Thanking you in advance.

PLEASE MAIL THE FREE "HURRICANE SURVIVAL CHECKLIST", FOR GALVESTON COUNTY. WE LOST ALL OUR POSSESSIONS IN CARLA. WE ARE SENIOR CITIZENS AND MR. YOUNG IS AN INVALID, SO WE MUST LEAVE EARLY.

MR. & MRS. M. K. YOUNG  
1414 Ave. B,  
Texas City, Tex. 77590

CAN YOU MAIL SEVERAL FOR OUR SENIOR CITIZENS ORGANIZATION



25 Galveston Maps

University of Houston  
Clear Lake City

2700 Bay Area Boulevard  
Houston, Texas 77058  
(713) 488-6840

Office of the Chancellor

29 July 1975

HURRICANE  
Box 13407  
Austin, Texas 78711

Gentlemen:

I have seen your advertisement advising the public of the availability of a free Hurricane Survival Check List and map of the Galveston-Houston area.

The University of Houston at Clear Lake City is a new institution which is just moving into its new quarters this fall. About half of our faculty will be new to this area. It would indeed be helpful if we could provide each member of our faculty and staff of approximately 200 people with your Hurricane Survival Check List.

If you can spare 200 of your publications, it will be greatly appreciated.



THE UNIVERSITY OF TEXAS  
HEALTH SCIENCE CENTER AT HOUSTON  
SCHOOL OF PUBLIC HEALTH  
COMMUNITY NURSE PRACTITIONER PROJECT

September 4, 1975

Hurricane  
Box 13407  
Austin, Texas

Dear Sir:

I would appreciate very much receiving a copy of the map of low lying areas and precautions about hurricanes. Please mail to:

STATE DEPARTMENT OF PUBLIC WELFARE

September 4, 1975

Hurricane  
Box 13407  
Austin, Texas 78711

Dear Sir:

Please send five (5) copies of "If A Hurricane Strikes".

RAYMOND VOWELL  
COMMISSIONER

BOARD MEMBERS  
GEORGE A. BUTLER  
CHAIRMAN, HOUSTON  
H. G. ANDREWS, JR.  
SPRINGFORD  
GARRETT MORRIS  
FORT WORTH



DICK J. WILEY, Agent  
Auto - Life - Health - Home and Business

2027 Tradewind Center (Drawers O)  
Texas City, Texas 77590  
Phone: Off. 948-3456



DON POTTER, Agent  
Auto - Life - Health - Home and Business

September 3, 1975  
12122 Murphy Rd., Suite C Stafford, Texas 77477  
Phone: Off. 550-0000

**JACK G. WAGNER & COMPANY**  
INSURANCE—ALL FORMS  
Service, Safety and Savings to Policyholders  
P. O. Box 95281 HOUSTON, TEXAS 77055 454-5846

To Hurricane  
Box 13407  
Austin, Texas 78711

REGARDING: MAP OF GALVESTON, TEXAS

DATE: 9/7/75

Please furnish us your map of Galveston, Texas.

Thank you very much,



Hartford Plaza  
Hartford, Connecticut 06115

August 5, 1975

THE HARTFORD

August 5, 1975



**NORTHWESTERN NATIONAL INSURANCE GROUP**

HOME OFFICE: 731 NORTH JACKSON STREET / MILWAUKEE, WISCONSIN 53202 / PHONE (414) 763-8444

August 8, 1975  
**CHUM & FURST**  
INSURANCE COMPANIES  
THE POLICY MAKERS

August 6, 1975



6 June 1975

Texas Coastal and Marine Council  
"Hurricane"  
P. O. Box 13407  
Austin, Texas 78711

Gentlemen:

Please send us one copy of the hurricane map for the Galveston area. Thank you.

**GALVESTON INSURANCE BOARD**  
The Oldest Board in the State of Texas  
ESTABLISHED 1872  
Galveston, Texas 77550

INSURANCE INSPECTOR  
EDWARD J. BODDEKER  
AMERICAN INDEPENDENT CO. BLDG.

May 14, 1975

"HURRICANE"  
Box 13407  
Austin, Texas 78711

RE: HURRICANE SURVIVAL CHECKLIST  
FOR GALVESTON AREA

Attn. Mr. Clint Dare

Dear Mr. Dare:

Will you please send us a hurricane survival checklist and map that has been produced for the Galveston Area of the Texas Coast.

Thank you very much.

Yours very truly,

GALVESTON INSURANCE BOARD

By Inspector

YOUR WORKER OF PROTECTION



**EMPLOYERS CASUALTY COMPANY**  
POST OFFICE BOX 2759 | DALLAS, TEXAS 75211

August 8, 1975

Subsidence Map  
P. O. Box 13407  
Austin, Texas 78711

Gentlemen:

**S. PHILLIP COLTRERA INSURANCE AGENCY**  
5050 Westheimer - Room 310  
Houston, Texas 77027

representing  
Phone: 622-7030

**KEMPER**  
INSURANCE

Chicago 60643



151 Farmington Avenue  
Hartford, Connecticut 06115

August 6, 1975

"Subsidence Map"  
P. O. Box 13407  
Austin, Texas 78711

John T. Guldin, Assistant Secretary  
Personal Accounts Department  
Casualty & Surety Division



**American General**  
COMPANIES  
BOX 3247 • HOUSTON, TEXAS • 77001

April 16, 1975

C. V. BERSON  
Vice President

YOUR WORKER OF PROTECTION



**EMPLOYERS CASUALTY COMPANY**  
1515 TREMONT | GALVESTON, TEXAS 77550 | TEL. 763-4348



**Commercial Union Assurance Companies**  
EXECUTIVE OFFICES: ONE BEACON STREET, BOSTON, MASSACHUSETTS 02108

"Subsidence Map"  
P. O. Box 13407  
Austin, Texas 78711



SEAFARER INSURANCE AGENCY

JOE C. BLACKSHEAR ■ J. J. McFERRAN ■ 2217 MARKET STREET ■ GALVESTON, TEXAS 77550 ■ TELEPHONE: GALVESTON 752-8578 ■ HOUSTON 297-0

April 15, 1975

"Hurricane"  
Box 13407  
Austin, Texas 78711

In re: Hurricane Awareness Program

Gentlemen:

Will you please forward to our Agency 100 maps, if possible, which we will distribute to members of the public.

We are interested in Galveston area.

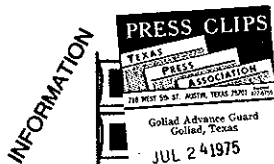
Thanks very much.

Yours very truly,

JJH:gmh

Press  
Port Isabel, Texas  
JUL 31 1975

Port Isabel-South Padre Press, Thursday, July 31, 1975



AUG 7 1975



JUL 30 1975

The Hui angle in relocating engineers vital. Et to suppl because relocate

Flo po

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## Flooding and winds possible storm results

Hurricanes strike the Texas Gulf Coast on an average of one every two years. They bring with them rain, wind and exaggerated tidal surge. The damage they do is calculated in dollars by various agencies within the limits of their special interest. The social upheaval caused by large scale devastation is more difficult to assess and in many areas may only be estimated by one's imagination.

Each hurricane is unique and unpredictable. Three recent hurricanes to hit Texas—Carla (1961), Beulah (1967) and Celia (1970)—each inflicted distinctly different types of damage.

Carla, although the packed peak winds of over 160 mph, did most of her damage by saltwater flooding. In places, Carla's surge reached 21 feet above sea level and spread more than 10 miles inland.

Beulah's damage was mostly from fresh-water flooding as a result of extremely heavy after-math rainfall (27.30 inches). Beulah also packed sustained winds of over 120 mph and spawned at least 49 tornadoes across the state, some as far inland as Austin.

Celia did her damage with winds. She blew things down and apart. While her sustained winds were less than Beulah's, Celia packed very strong gusts (the recorder went at 162 mph) that inflicted distinct kinds of destruction across Corpus Christi. One expert described the damage "as if a giant lion's paw had gone through the city."

**Storm surge**

In most hurricanes, it is the inundation of the coastal plain by the "storm surge" which causes most loss of life and property damage. Storm surge is a separate phenomenon from the regular astronomical tides. Collectively these regular tides and the storm surge form the "hurricane tide."

Development of the storm surge takes place over deep water, where the drop in barometric pressure in the center of the storm causes the sea surface to bulge upward. A second action develops as hurricane winds sweep across the sea surface. This causes a swirling movement of the surface water which gradually extends downward to a depth of about 50 fathoms (900 feet).

**Subsidence**  
Carla was the last major hurricane to hit the Houston-Galveston area. She came in 1961. In the 14 years since, things have changed greatly in the area around Galveston Bay.

Extensive land development has occurred since Carla, such as NASA's Johnson Spacecraft Center and associated development. Hundreds of acres of land in Harris and Galveston counties have been developed since 1961.

Extensive land subsidence has occurred because of heavy groundwater withdrawal. In places the land has sunk 5-7 feet. This has drastically expanded the flooding danger.

A combination of the expanded flooding potential and intense development increases the chance for a major disaster much more than either flooding or development alone.

The National Weather Service, in a recent report, points out two alarming facts. If Carla returned today, she would directly affect at least 50,000 more people and inundate Interstate 45 in several places not affected in 1961, thus cutting off escape routes that were usable in 1961.

The situation will continue to become worse. Even if groundwater pumping ceased today, subsidence would still continue for several years. The land boom along the west shore of Galveston Bay shows no sign of slowing, and most of those who move in are unaware of the "big one" that is bound to come someday.

Preparing for a major disaster on the Texas coast this year will require planning and action by all involved entities. It must include several types of action such as careful preparation by Civil Defense officials of how, when and where to move people under the new and constantly changing conditions and also restrictions of the withdrawal of ground water to minimize the additional land areas subjected to possible flooding. Some form of coastal zone land use management to reduce the lives and property exposed is needed, as well as an active public awareness program aimed, not at creating hysteria and fear, but rather at educating the public to cope with hurricanes.

LA FERIA NEWS, THURSDAY, AUGUST 7, 1975

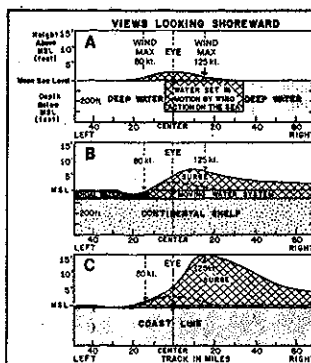
# IF A HURRICANE STRIKES...



AT SEA in deep water the only rise in sea level is due to the drop in air pressure at the storm center. However, hurricane winds stir the ocean to a depth of 50 fathoms, setting up a systematic movement of the water which sets the stage for storm surge when the system reaches shallow water.

SAN BENITO NEWS, WEDNESDAY, JULY 30, 1975

# IF A HURRICANE STRIKES...



AT SEA in deep water the only rise in sea level is due to the drop in air pressure at the storm center. However, hurricane winds stir the ocean to a depth of 50 fathoms, setting up a systematic movement of the water which sets the stage for storm surge when the system reaches shallow water.

IN SHOAL WATER (less than 50 fathoms... 300 ft.) as the center approaches the coast the water set in motion by hurricane winds tries to spread outward in all directions. This results in some piling up of water in a mound which may cause sea level to rise 8-10 feet while the center is still 10-20 miles from shore.

AT THE COAST LINE the moving water piles up to its greatest height and the surge may culminate in a sea level rise of 15-20 feet or more. In Carla the peak surge was 24.6 feet above mean sea level, and in Carla the peak was about 21 feet.

**THE GREATEST STORM SURGES OCCUR WHEN:**  
1. shoal water extends seaward more than 30 miles  
2. air pressure at the storm center approaches record lows  
3. the hurricane crosses the coastline rapidly (20mph or more)  
4. the maximum winds occur at greatest distances from the center  
5. landfall is made on a track perpendicular to the coast

RISE OF THE STORM SURGE AS A HURRICANE MAKES ITS LANDFALL

Increased population, severe subsidence in some areas, and "the odds" create a need for stepped up awareness and preparation for the Texas coastal zone this hurricane season.

Possibly as much as a third of the current coastal population has never experienced a hurricane. Extensive land development in Harris and Galveston counties within the past 10 years has resulted in excessive groundwater withdrawal causing drastic land sinking. Thus, flooding vulnerability has been increased. And despite the fact that hurricane occurrence is unpredictable, the pattern is a hurricane every 2-3 years and a major one every 10 years. The Texas coast is past due.

The Texas Coastal and Marine Council, in conjunction with federal, state, and local officials, as well as with the Texas Catastrophe Property Insurance Association and other insurance organizations such as the Texas Insurance Advisory Association, is coordinating current available data to publicize information every coastal citizen should know in the event of a hurricane. This material is designed to be a year-round reference for hurricane information and awareness.

This material provided as a public service. Its purpose is to increase hurricane awareness. It represents a joint effort by the Texas Catastrophe Property Insurance Association and the Texas Coastal and Marine Council.

## INSURANCE-AND CATASTROPHE RECOVERY

In the aftermath of a major catastrophe, such as a hurricane, the role of the Texas insurance industry is an important one. A quick and proper reaction is a major objective. Herdship cases are a first priority—with prompt service promised to all policyholders as soon as possible. Every effort is made to fully inform the public before, during, and after disaster strikes as to what steps are to be taken. The magnitude of what might be faced should be quite clear from the material presented here, and patience and understanding are required. All individuals should realize their own role too—and regular review of how to prepare adequately is strongly advised. Advance preparation is the key thought. The Texas Catastrophe Property Insurance Association joins the Texas Coastal and Marine Council in urging all

residents in the vulnerable areas along the Texas coast to become thoroughly familiar with the survival checklist—because it is as stated, a list to help everyone survive. The educational process should be year-round.

On a statewide basis, the Texas insurance industry has established a plan of action for expediting insurance rehabilitation of catastrophe-struck communities. This "Texas Catastrophe Loss Plan" is coordinated by the Texas Insurance Advisory Association, headquartered in Austin.

The Texas Catastrophe Property Insurance Association was formed in 1971 to provide a means for individuals in high risk areas to obtain insurance against wind damage. Every company which writes property insurance in Texas participates.

**'Watch', 'Warning'**  
—words to know

# The Bayshore Sun Pull-Out

## 1975 Hurricane

4 PAGE SECTION  
TRACKING MAP-HURRICANE  
INFO AND SAFETY TIPS

## Where To Call For Information

The major in incorporated areas and the county judge in unincorporated areas serve as the local coordinator. The local coordinator generally designates some individual to handle this responsibility. The best method for locating this individual along the coast varies, but usually either the telephone directory under civil defense, the local police or sheriff's department, or the mayor or county judge will have the information.

**TEXAS DEPARTMENT OF PUBLIC SAFETY**  
Parks Bowden, State Coordinator, Division of Emergency Services, Texas Department of Public Safety, P.O. Box 697, Austin, Texas 78773  
**RED CROSS**  
The numbers for your local office are in the telephone directory.  
**CORPS OF ENGINEERS**  
Emergency Operations, U.S. Corps of Engineers, P.O. Box 1229, Galveston, Texas 77550

**FEDERAL DISASTER ASSISTANCE**  
Joe D. Winkle, Region 6 Director, Federal Disaster Assistance, 1100 Commerce Street, Dallas, Texas 75202  
To further assist in recovery, various insurance organizations are also prepared to be of service. These include the Texas Catastrophe Property Insurance Association.

**PRESS CLIPS**  
TEXAS  
PASS  
ASSOCIATION  
110 WEST 46th ST. AUSTIN, TEXAS 78711

La Feria News  
La Feria, Texas

AUG 21 1975

NATIONAL WEATHER

## Hurricane Precautions

1. Be sure that your insurance coverage is suitable.
2. Have tools such as axes and wrecking bars available for emergency rescue.
3. Obtain location and telephone numbers of nearest Red Cross or other shelters.

4. Become familiar with best evacuation routes.
5. When leaving, take things such as extra eye glasses, minimal toilet articles, Kleenex and bedding if time and space permit.
6. It is recommended that pets be left with commercial facilities.

7. Be sure you have an evacuation vehicle. It should be kept in good mechanical condition since repairs and service may not be available. Larger cars are preferable since they can drive through deeper water and carry more people and items. Also they will not be blown off the road as easily. Motorcycles should be used only as a last resort. Never overload the vehicle chosen.
8. For more specific suggestions, see the "Survival Checklist" in this section.

## Hurricane Glossary

**EYE:** The circular center of a hurricane. It has comparatively light winds and fair weather.  
**GALE WARNING:** A notice added to small craft advisories when winds of 26-35 m.p.h. are expected.  
**HURRICANE WARNING:** A

threatens the watch area and has a 60-80 chance of becoming a hurricane. Small craft advisories are issued as part of a hurricane watch advisory.  
**EXTREME HURRICANE:** A tropical cyclone with winds of 120 m.p.h. or higher and a central pressure of 28 inches or less.

## Hurricane Survival Checklist

### BEFORE HURRICANE SEASON BEGINS, FIND OUT FROM CIVIL DEFENSE

The elevation of your home above mean sea level.  
The maximum storm surge height in your area.  
Escape routes in the event of evacuation.  
The location of the nearest official shelter.  
How safe your home is - if you live on the seashore below the third story or in a mobile home, always plan to relocate.  
Inventory of your property for insurance claims.  
Note: This information should be gathered long before the season starts. Once the storm begins to come towards your area, officials will be too busy to answer all your questions.

### WHEN HURRICANE WATCH IS ISSUED:

Obtain transistor radio with fresh batteries - it is quite possible there will be no electricity and your radio will be the only reliable source of information. Have enough batteries to last several days.  
Stock flashlights, candles or

### WARNING IS ISSUED:

Monitor continuously TV and AM radio broadcasts or VHF-FM continuous weather broadcasts. Discount rumors. Use telephone sparingly. If you live in a mobile home, secure tie-downs and leave immediately.  
Secure garbage cans, awnings, garden tools and all other outside objects that become lethal projectiles in high winds.  
Properly secure windows and doors.  
Move small boats on trailers close to house. Secure mooring lines of docked boats and leave them.  
Move valuables and personal papers to highest point in house.  
Recheck survival supplies.

### IF YOU DECIDE TO REMAIN AT HOME:

Remain indoors - don't venture out during the lull in the eye. Winds over 75 mph can arise within a few seconds. Move furniture away from exposed windows and doors. Stay on the leeward or downwind side of the house, moving in the direction of the wind. If the wind has any remaining there of the

### tidal waves arrive three to five hours before the actual storm.

Don't travel farther than necessary.  
Close and lock all windows and doors.  
Turn off main gas valve and power switch.  
Carry along survival supplies - first aid kit, canned or dried provisions and utensils, bottled water, medications regularly required, and spare batteries, eyeglasses, etc.  
Take important papers - driver's license and other identification, insurance policies and special medical information.  
Take at least one change of clothes - warm protective clothing makes more sense than a bathing suit.

### AFTER HURRICANE PASSES:

Beware of outdoor hazards such as downed power lines. Walk or drive carefully. Snakes and poisonous insects will be hazardous and road bridges structures, weakened by washouts, may easily collapse.  
Guard against spoiled food. Do not use water from city mains until you receive official word.  
Take extra precautions to prevent fires.  
**CLEANING UP AFTERWARDS**  
Notify your insurance representative.  
Make temporary repairs to protect property from further damage. Board up broken windows.

## Texas Hurricane Record

This table contains the total number by month of hurricanes or tropical storms that hit the Texas coast, moved into Texas from Mexico or Louisiana, or affected the Texas coast as they passed through the Gulf of Mexico during the period from 1971 to 1973:

	June	July	Aug.	Sept.	Oct.
Hurricane	8	6	15	13	3
Tropical storm	7	4	4	8	2
	1	0	5	3	1
Total	2	1	4	5	6

1 a tropical cyclone; 44

# HURRICANE SURVIVAL CHECKLIST

This material provided as a public service. Its purpose is to increase hurricane awareness. It represents a joint effort by the Texas Catastrophe Property Insurance Association and the Texas Coastal and Marine Council.

Maps are available for the following areas: Brownsville, Kingsville, Corpus Christi, Port Lavaca, Bay City, Galveston and Beaumont. If you have an interest in any of these areas, write "Hurricane" and "Survival Checklist" on a postcard and mail to: "Hurricane Survival Checklist", Box 13407, Austin, Texas 78711 and indicate which map you want.

Land Subsidence Amplifies Hurricane Damage  
"Subsidence Map", P.O. Box 13407, Austin, Texas 78711

For a comprehensive atlas on "Natural Hazard Zones" send \$3.15 to Bureau of Economic & Geology, University of Texas at Austin, Box X, University Station, Austin, Texas 78711

### BEFORE HURRICANE SEASON BEGINS, YOU SHOULD KNOW:

#### THE ELEVATION OF YOUR HOME ABOVE MEAN SEA LEVEL

Your local Civil Defense officials can help you obtain information about your elevation. The local Weather Service office can supply flood-stage information for local streams and bays.

#### THE MAXIMUM STORM SURGE HEIGHT WHICH MIGHT OCCUR IN YOUR AREA

Your nearest Weather Service office can tell you the highest potential storm surge at each point along the coast and the approximate extent of inland flooding.

#### THE ROUTE YOU WOULD TRAVEL TO SAFETY IF YOU HAVE TO LEAVE

Plan your escape route early, and check with local Civil Defense for the low points and flooding history of your route. The LOCATION OF THE NEAREST OFFICIAL SHELTER Civil Defense or Red Cross can locate the shelter nearest your home and explain what you should bring with you.

#### HOW SAFE YOUR HOME IS

If you live near the seashore, plan to relocate during a hurricane emergency unless you live in a high-rise above the third floor level. If you live in a mobile home, always plan to relocate.

#### THE INVENTORY OF YOUR PROPERTY

To settle your insurance claim should there be loss or damage, it is helpful to have a complete inventory of your personal property. Don't trust your memory. Take photographs both inside and outside to help you remember details. A check list can be obtained from many sources, including your insurance representative. Store this information in a high, dry area in a waterproof container or in your safe deposit box along with your insurance policies and other important papers.

#### WHAT YOUR INSURANCE WILL COVER

Review your insurance policies to avoid misunderstanding later. Take advantage of flood insurance. Wind damage is different than water damage—and this will require two different policies.

**IMPORTANT:** Do the above before the hurricane season arrives in June. Do not wait until a hurricane is brewing in the Gulf; by then it is too late. Your officials will be very busy preparing for the emergency and won't be able to respond to everyone's individual request.

### CONTAINERS FOR DRINKING WATER

Have enough clean containers to store six weeks' supply of water for several days. The city supply will be interrupted or contaminated.

### MATERIALS FOR PROTECTING GLASS OF WINDOWS AND DOORS

Have suitable shutters or procure stout lumber (large windows and doors; have masking tape to use on small windows).

### WHEN A HURRICANE WARNING IS ISSUED PROMPTLY

#### BEGIN A CONTINUOUS COMMUNICATIONS WATCH

Monitor TV and AM radio broadcasts or VHF-FM continuous weather broadcasts. Keep a log of official information, hurricane position, intensity and expected landfall. Discuss rumors. Use the telephone sparingly.

#### IF YOU LIVE IN A MOBILE HOME

Check your tie-downs and leave immediately for safer refuge. PREPARE YOUR RESIDENCE AND PROPERTY FOR HIGH WINDS

#### BRACE YOUR GARAGE DOOR

Lower antennas. Be prepared to make repairs. Your insurance policy may cover the cost of materials used for making temporary repairs—so keep all receipts for materials for later reference.

#### SECURE ALL OUTSIDE OBJECTS

Garbage cans, awnings, garden tools and loose objects can become lethal projectiles. Anchor them securely or bring them indoors.

#### PROTECT LARGE WINDOWS AND OTHER EXPOSED GLASS

If shutters are not available, board up large windows securely. Tape windows which are not boarded or shuttered to reduce shattering. Draw drapes across windows and patio doors to protect against flying glass if shattering does occur.

#### MOVE SMALL BOATS ON TRAILERS CLOSE TO THE HOUSE

Fit them with weight to weigh them down. Lash boats securely to trailer and use tie-downs to secure the trailer to the ground or to the house.

**CHECK MOORING LINES OF BOATS IN THE WATER. THEN LEAVE THEM**  
**MOVE VALUABLES AND PERSONAL PAPERS TO HIGHEST POINTS**  
It is good insurance for irreplaceable documents to place them in a high spot and, if possible, in a waterproof container. CHECK YOUR SURVIVAL SUPPLIES ONCE AGAIN

# HURRICANE SURVIVAL CHECKLIST

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### IF YOU DECIDE TO REMAIN AT HOME

#### REMAIN INDOORS

Don't venture out during the lull when the eye arrives. The lull sometimes ends suddenly as winds return from the opposite direction. Winds can increase to 75 m.p.h. or more in a very few seconds.

#### PROTECT PROPERTY

Without taking any unnecessary risks, protect your property as much as possible. Temporary repairs can reduce your losses from damage. Temporary repairs can reduce your losses from damage.

#### STAY AWAY FROM EXPOSED WINDOWS AND GLASS DOORS

Move furniture away from exposed doors and windows during the hurricane.

#### STAY ON THE LEeward OR DOWNWIND SIDE OF THE HOUSE

As the wind direction changes, move to another room. If your home has an "inside" room, remain there during the hurricane.

#### KEEP A CONTINUOUS COMMUNICATIONS WATCH

Keep the radio or television tuned for hurricane information from official sources. Unexpected changes can sometimes occur. Your ability to meet emergencies will help others maintain control of their situation.

#### IF YOU MUST LEAVE HOME DUE TO THE HURRICANE THREAT

**FIRST MAKE SURE THERE IS A SAFE REFUGE WHEN YOU REACH EARLY, IN DAYLIGHT, IF POSSIBLE**  
Remember, dangerous winds and seas may arrive three to five hours before the hurricane center reaches the coast. Roads may be traffic-jammed and a stranded auto may become a coffin.

### WHEN A HURRICANE WATCH IS ISSUED, CHECK SUPPLIES:

#### TRANSISTOR RADIO WITH FRESH BATTERIES

Your radio will be your only reliable source of information. Have enough batteries to last several days. There may be no electricity.

#### FLASHLIGHTS, CANDLES OR LAMPS, MATCHES

Store matches in a waterproof container. If you use lanterns or lamps, have sufficient fuel for several days and know how

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MAY 8 1975  
Victoria  
Victoria, Texas

## Hurricane Survival Checklist Available For Texas

A hurricane survival checklist for seven areas of the Texas coast has been produced for residents of the coastal areas of the state. The checklist is available for residents of the coastal areas of the state. The checklist is available for residents of the coastal areas of the state.



MAY 8 1975  
Highlands Star  
Highlands, Texas

## Hurricane Survival Checklist Still Available

A hurricane survival checklist for seven areas of the Texas coast has been produced for residents of the coastal areas of the state. The checklist is available for residents of the coastal areas of the state.



SEP 4 1975  
Deer Park Progress  
Deer Park, Texas

## Hurricane Survival Checklist Still Available

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MAY 28 1975  
Daily Sun  
Texas City, Texas

## Survival Checklist Map Aids Coastal Areas In Hurricane

A hurricane survival checklist for seven areas of the Texas coast has been produced for residents of the coastal areas of the state. The checklist is available for residents of the coastal areas of the state.



MAY 8 1975  
Port Isabel, Texas

## Hurricane Survival Checklist Available

A hurricane survival checklist for seven areas of the Texas coast has been produced for residents of the coastal areas of the state. The checklist is available for residents of the coastal areas of the state.



SEP 6 1975  
Citizen  
El Campo, Texas

## Hurricane Kit Still Available

A hurricane survival checklist for seven areas of the Texas coast has been produced for residents of the coastal areas of the state. The checklist is available for residents of the coastal areas of the state.

SEP 4 1975  
Beacon  
Palo Alto, Texas

## Checklist for hurricanes ready

A hurricane survival checklist is still available for residents of the Texas coastal areas. The checklist mentions steps to be taken before, during and after a hurricane in order to save lives and property. Requests for a free copy of the survival checklist and map should be sent to "Hurricane" Box 13407, Austin, TX 78711.

The map and list will be distributed in advance of the hurricane season, which runs from June through November. Requests for a free copy of the survival checklist and map should be sent to "Hurricane" Box 13407, Austin, TX 78711. The checklist mentions steps to be taken before, during and after a hurricane in order to save lives and property.



JUL 27 1975  
Times  
Angleton, Texas

## Storm Preparedness Checklist Offered

June through October is on it. Texas can be a time of fun and excitement, but it can also be a time of disaster. A storm preparedness checklist is available for residents of the coastal areas of the state. The checklist mentions steps to be taken before, during and after a hurricane in order to save lives and property.

Also, a checklist of what to do in and around the home or business should be followed to minimize damage. The checklist mentions steps to be taken before, during and after a hurricane in order to save lives and property.

## Hurricane checklist available to residents

The June-Nov. season is well-known to all area residents. It's the hurricane season. Although this has been a mild year so far, hurricanes in the past have devastated parts of the Texas coast. A program is presently underway in the Texas coastal area, sponsored by the Texas Coastal and Marine Council and the Texas Catastrophe Property Insurance Association.

and checklist are free. Hurricane precautions for the area have been listed by the program. Residents should leave low-lying areas, outdoor objects or bring them indoors. Extra food that requires little or no cooking with fuel in case evacuation becomes necessary. Residents should store the home for water supply in mobile homes should be evacuated if a home is sturdy and on high ground, residents should stay at home to ride out the storm.

There is no way to say. Hurricanes don't understand. Thus, the past is necessary a guide to future events that should bring. Cells and should be prepared to be prepared.

