



The Official Rio Grande Valley

# HURRICANE GUIDE

2019



## ARE YOU PREPARED?

[weather.gov/rgv](http://weather.gov/rgv)

# A Letter to Residents

Hello Rio Grande Valley Texas Residents,

Hurricane Season is upon us and it is time to get prepared. In fact, historically 14 hurricanes have struck the Texas Coast in the month of June, so it is important to be ready, even in June. It was just two years ago that Hurricane Harvey brushed by South Padre Island on its way to the Coastal Bend, ultimately producing more than \$125 billion in damage from flooding rain, storm surge, and Category 4 wind near the coast. Many residents from the Coastal Bend through Southeast Texas are still recovering.

Hurricanes bring a multitude of hazards including flooding rain, deadly storm surge, damaging winds, and tornadoes. These destructive forces can displace you from your home for months or years. This is why residents should take planning for hurricanes very seriously. This updated guide can help you and your family get prepared. Learn what to do before, during and after a storm. Your plan should include preparations for your home, gathering supplies, ensuring your insurance is up to date, and planning for an evacuation.

There are many great organizations that can help you get prepared. The Federal Alliance for Safe Homes ([hurricanestrong.org](http://hurricanestrong.org)) has a wealth of information on preparing your property before a storm. If you will need any form of assistance, be sure to register for the State of Texas Emergency Assistance Registry (simply dial 2-1-1 to register). More information about these groups and others can be found in this guide.

Do not be distracted by the hurricane seasonal outlook. It is important to be fully prepared each season, for It Only Takes One, as Harvey (2017) and Beulah (1967) attest. Once a storm develops, obtain the official forecast from your National Weather Service or local media outlets, and be sure to heed the advice from local officials. Take this time to ensure you and your family are ready!

I hope you have a safe hurricane season!

Sincerely,

**Barry Goldsmith**

Warning Coordination Meteorologist  
National Weather Service  
Brownsville/Rio Grande Valley, Texas

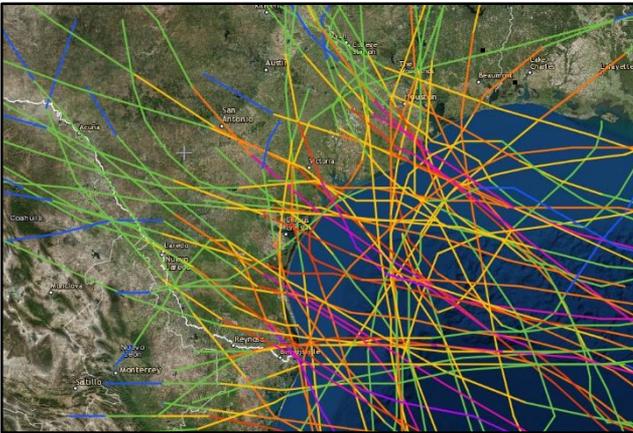


# About Hurricanes



*Above: High resolution satellite image of Hurricane Harvey approaching the Middle Texas Coast. Image--NOAA*

Hurricanes form over warm ocean waters, like those found in the Gulf of Mexico. The hurricane season starts June 1 and ends November 30. The peak threat for the Texas coast exists from August through September. However, hurricanes can and have struck the Texas coast during every month of the hurricane season (though none in November since before 1851).

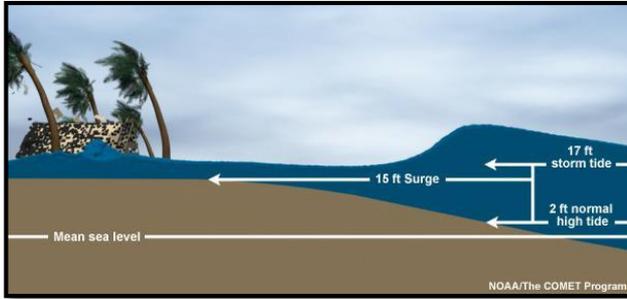


*Above: Historical perspective of hurricane landfalls in Texas since 1851. Image -- NOAA*

**Since 1851, 64 hurricanes have struck the Texas coast. That is one every three years on average.**

## Storm Surge Defined

Storm surge is an abnormal rise of water generated by a storm, over and above the predicted astronomical tides. This rise in water level can cause extreme flooding in coastal areas resulting in storm tides reaching up to 20 feet or more in some cases. Along the Texas coast, these flood waters can penetrate far inland depending on the elevation of the land. If the storm tide is greater than the land elevation (even if well inland) then storm surge flooding will be possible.



## Storm Surge Can Be Deadly! Here are 6 Tips to be Ready

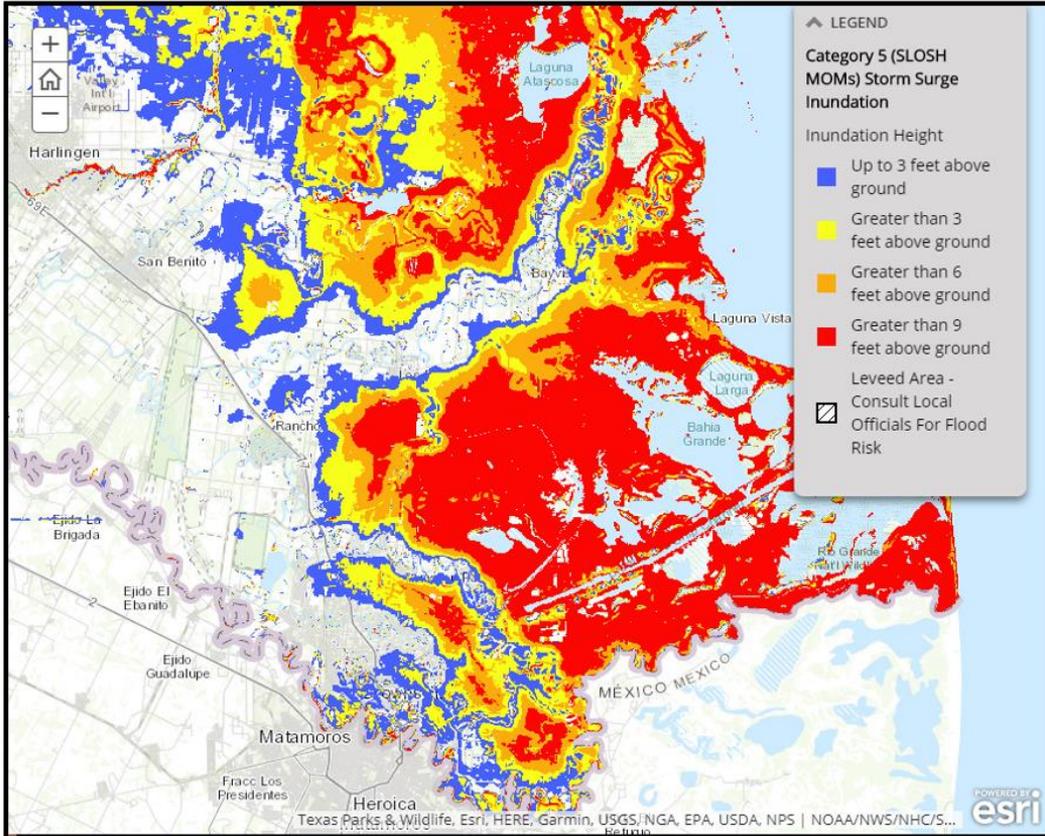
1. Storm surge flooding is often the greatest threat to life and property from a hurricane. It poses a significant threat for drowning. A mere six inches of fast-moving flood water can knock over an adult. It takes only two feet of rushing water to carry away most vehicles.
2. Storm surge can cause water levels to rise quickly and flood large areas in just minutes, and you could be left with no time to take action if you haven't already evacuated as instructed.
3. Storm surge is not dependent on the Saffir-Simpson Hurricane Wind Scale. Hurricane categories are based only on winds and do not account for storm surge. Any wind category can all cause life-threatening storm surge.
4. Many Gulf Coast areas are vulnerable to storm surge including areas many miles inland from the coastline depending on elevation of the coastal plain. Find out today if you live in a storm surge zone (see pages 5-7 in this guide).
5. Storm surge can occur before, during and after the center of the storm passes through an area, and can sometimes cutoff evacuation routes. The water can also rise well in advance of the coming storm, in some cases 36 hours or greater. When an evacuation is ordered, do not wait until the last minute to leave.
6. During the peak of a storm surge event, it is unlikely that emergency responders will be able to reach you if you are in danger.



For more information about storm surge,  
please visit the new NHC Storm Surge Video:  
<https://www.youtube.com/watch?v=bBa9bVYKLP0>

# Storm Surge

## Coastal Cameron County



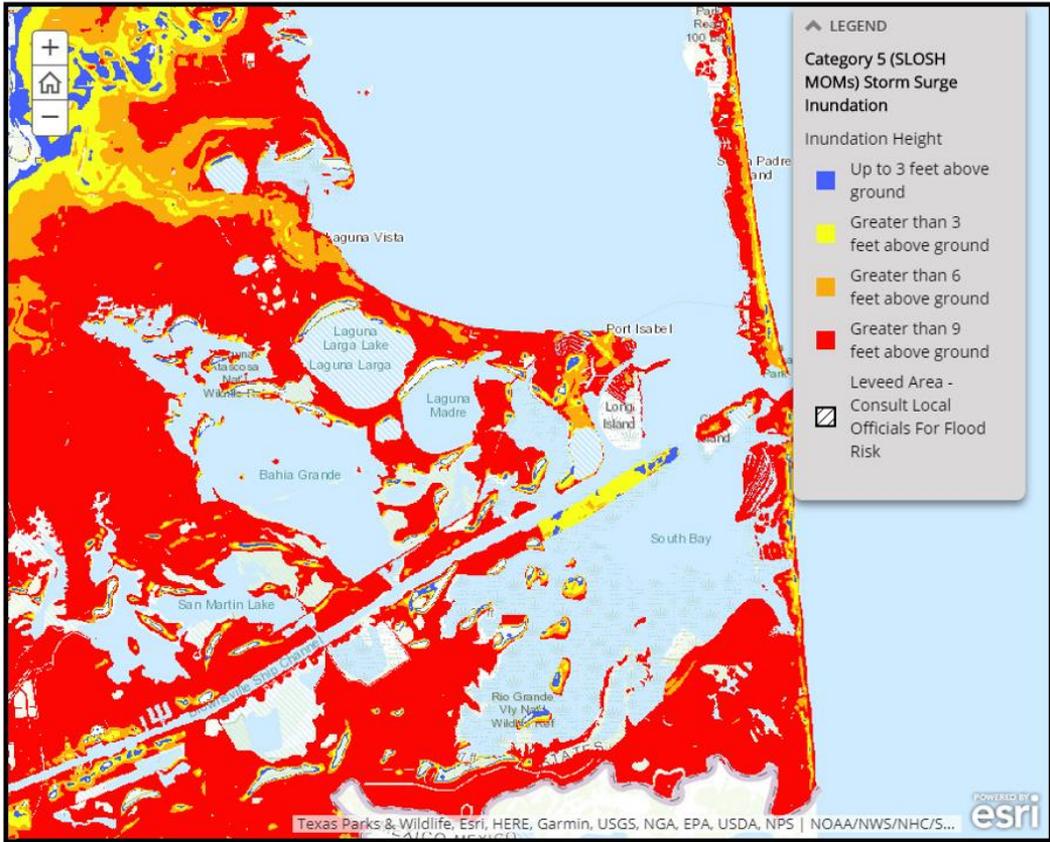
Above: This map shows the height above ground the water could reach and depicts the reasonable worst-case scenario from storm surge flooding.

**“The greatest potential for loss of life related to a hurricane is from the storm surge.”**

**-National Hurricane Center**

# Storm Surge

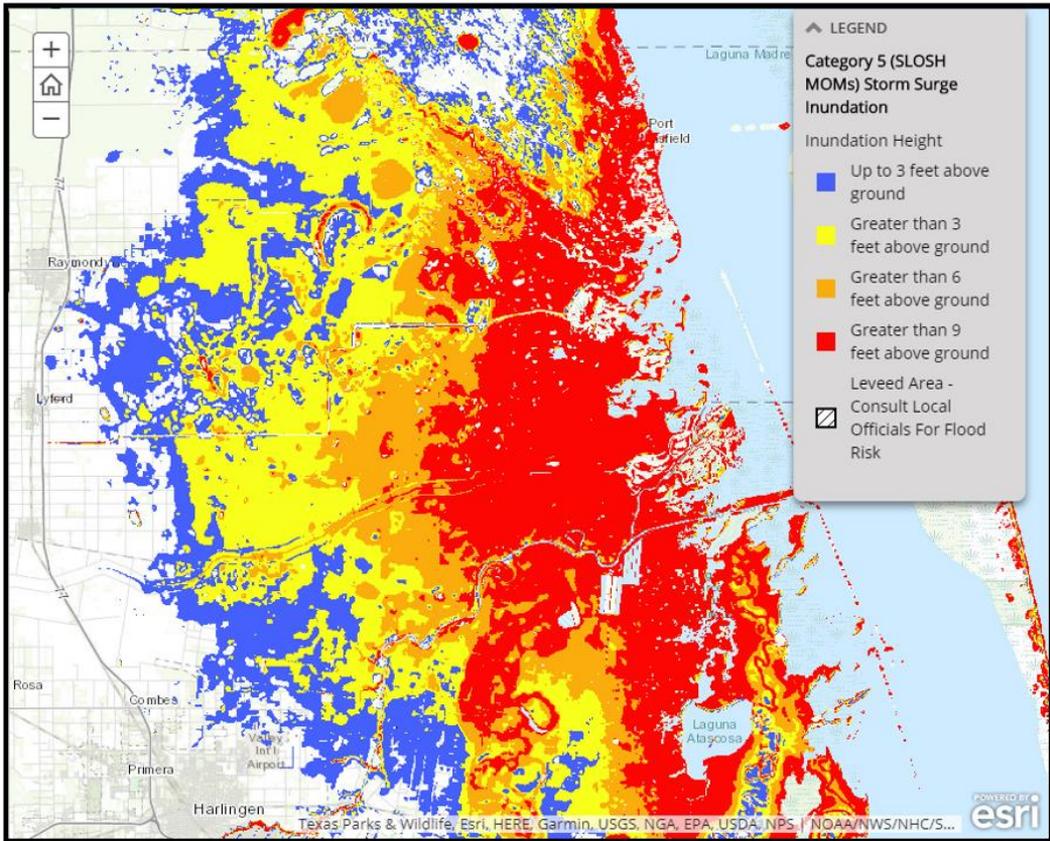
## Zoomed: South Padre, Port Isabel, and Laguna Vista



Above: This map shows the height above ground the water could reach and depicts the reasonable worst-case scenario from storm surge flooding.

# Storm Surge

## Coastal Willacy County



Above: This map shows the height above ground the water could reach and depicts the reasonable worst-case scenario from storm surge flooding.

Want to see more high resolution storm surge maps?  
Visit: [National Storm Surge Hazard Maps](#)

# Inland Flooding

There are numerous examples of significant flooding caused by land-falling tropical cyclones in Texas. Hurricane Harvey broke the mold for tropical rainfall flooding. Storms with a slow forward motion are the most dangerous as heavy rains persist for a longer period of time.

## Five Practical Ways to Protect Yourself and Others From the Dangers of Inland Flooding

### Protect Your Personal Documents and Special Items

- Store valuables in plastic tubs with locking tops
- In case of an evacuation, you should be able to secure and move all your valuables within 15 minutes

### Buy Flood Insurance – A Plan for Replaceable Items

- The National Flood Insurance Program (NFIP) is available from an insurance agent or the NFIP
- For more information see [www.floodsmart.gov](http://www.floodsmart.gov)

### Flood Proof Your Home – Take Steps to Minimize Flood Damage

- Shut off the main circuit breaker to prevent appliances from short circuiting and eliminate the threat of electrocution
- Raise outside air conditioning units onto platforms above ground level
- Store rarely used or expensive items in the attic or on high shelves

### Develop a Family Flood Plan

- Develop a plan of action to keep from panicking or withdrawing during an emergency
- Have an evacuation route and alternatives planned in the event you are asked to evacuate
- Communicate your plans with friends or family outside of your home area
- Battery powered radios or televisions can be used in the event of a power outage

### Never Drive on Flooded Roads

- Driving into flooded roadways puts your life and the lives of others at risk
- Unless told to evacuate, you are probably safest staying at your current location
- If you encounter flood waters when driving, Turn Around, Don't Drown!



# Tornadoes and Destructive Winds

Tropical cyclones also produce tornadoes. These tornadoes most often occur in thunderstorms embedded in rain bands well away from the center of the hurricane; however, they can also occur near the eyewall. Tornadoes produced by tropical cyclones are relatively weak and short-lived, but still pose a threat.

Hurricane force winds of 74 mph or more can destroy buildings, mobile homes, trees and power poles. Debris such as signs, roofing material, siding, and small items left outside become flying missiles in a hurricane. The strongest winds occur in a region of the hurricane called the eyewall. Wind gusts in the right side of the eyewall are the most destructive. Hurricane force winds can be felt as far as 150 miles from the coast



*Above: Damage to the community of Copano Village in Aransas County, TX in the wake of Hurricane Harvey in 2017.*

## MOBILE HOME RESIDENTS MUST EVACUATE!



*Above: Container trailer leaning on a recreational vehicle in San Pedro, following EFO tornado associated with Hurricane Alex in 2010.*

- No mobile home or manufactured home - no matter how new it is - can provide safe shelter from hurricane force winds.
- Straps or other tie-downs will not protect a mobile home from the high winds associated with a hurricane.
- Mobile home residents must evacuate when told to do so by local authorities.

## Saffir Simpson Hurricane Wind Scale

- Category 1 - Winds 74 to 95 mph
- Category 2 - Winds 96 to 110 mph
- Category 3 - Winds 111 to 129 mph
- Category 4 - Winds 130 to 156 mph
- Category 5 - Winds 157 mph or higher

# Hurricane Preparation

## Home Preparation

### Elevation Matters

- Know the elevation of your home! Are you in a flood and/or evacuation zone?

### Mobile Homes

- Check tie-downs for rust or breakage.
- Residents of mobile homes must evacuate when told to do so!!

### Landscaping

- Trim trees, shrubbery and dead limbs, especially ones close to your home.
- Repair or replace broken or damaged fences.

### Roofing

- Inspect the roof for loose tiles, shingles or debris. Consider replacing old or damaged shingles with new ones rated for hurricane force winds.
- Clear loose and clogged rain gutters and downspouts.

### Doors

- Reinforce garage doors and tracks or replace with a hurricane tested door.
- Reinforce double entry doors with heavy duty foot and head bolts.
- Use a security dead bolt with a one inch minimum bolt length.

### Windows

- If possible, install tested/manufactured hurricane shutters.
- Inspect existing shutters to ensure they are in good working order.
- Alternative: Use 5/8" or greater exterior grade plywood secured by 2 1/2" screws and/or special clips. Obtain wood and fasteners, cut wood to size, pre-drill holes and place anchors on homes.



*Above: This well built home in the community of Copano Village in Aransas County, TX survived Hurricane Harvey in 2017.*

**For more information on home preparedness, please visit the Federal Alliance for Safe Homes (FLASH) at:**

**<http://www.flash.org/>**

# Additional Preparation

## Business and Employee Preparation

- Identify and protect vital records. Backup and store key files off site.
  - Protect electronic equipment from possible water damage.
  - Have extra cash and blank checks in case extra money is needed after the storm.
  - Develop a 24-hour emergency contact with phone numbers of key employees.
  - Set up telephone numbers for employees to check in and receive company information.
  - Establish a temporary location for business operations in case your facility is damaged.
  - Give employees enough time to secure their homes and families.
  - Consider paying employees before they leave to prepare their homes.
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## Marine Preparations

- Check with the manufacturer for proper ways to secure your boat during a storm.
  - Purchase necessary hurricane materials such as additional mooring lines, crew anchors, fenders, fender boards, chafing gear, and anchors.
  - Safe storm moorings should consist of good condition ropes of sufficient diameter and length, with at least three or four substantial anchor points.
  - Do not moor parallel to bank. Receding tides often capsize boats in this type of anchorage.
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## Preparing for Your Pet's Safety

- Your pet should be part of your overall hurricane preparation plans. Below are a few important things to help you prepare:
- Make sure your pet's vaccinations are current and have proof they are current. DO NOT assume that a public shelter or hotel will accept your pet.
- Be sure to have a current photo of your pet.
- Each animal should have a properly sized pet carrier. The carrier should be large enough for the animal to stand up and turn around.
- Pack enough food and bottled water for the duration of your evacuation. DO NOT let your pet eat food or drink water from outside that may have become contaminated.
- Be sure to pack all medications your pet may need along with a muzzle, collar, leash, paper towels, and trash bags.
- Make sure your pet has a proper ID collar.

## Before the Storm

- New and existing policies will not be written or modified when a storm nears the Gulf of Mexico.
  - Make sure you fully understand what perils are covered and excluded in your policy.
  - Make sure your coverage is adequate to replace your home and contents in today's dollar.
  - Determine whether your policy covers additional living expenses for a temporary residence if you are unable to live in your home because of damage from a disaster.
  - Before hurricane season, prepare detailed written and/or photographic inventory of your home's contents and store it in a safe place with your policy.
  - If your insurance company does not cover flood or windstorm perils, ask about coverage through the Texas Windstorm Insurance Association or the National Flood Insurance Program.
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## After the Storm

- Give prompt written notice to your insurance company.
- Photograph or videotape damaged structures and all damaged property. Make a list of damaged or lost items.
- DO NOT throw out damaged property before your adjuster has inspected the debris unless it is a health hazard or impedes local cleanup.
- Protect your property from further damage.
- Keep an accurate record of temporary repair and living expenses if a loss of use is suffered.

## Important Online Insurance Information

- National Flood Insurance Program  
[www.floodsmart.gov](http://www.floodsmart.gov)
- Texas Windstorm Insurance Association  
[www.twia.org](http://www.twia.org)  
Consumer help line 800-788-8247
- Texas Department of Insurance  
[www.tdi.texas.gov](http://www.tdi.texas.gov)  
Consumer Help Line 800-252-3439

# Contact Info and Supplies



**American  
Red Cross**

## Emergency Contact Information

Out of Town Contact Address: \_\_\_\_\_  
Out of Town Contact Phone Number: \_\_\_\_\_  
Work Telephone Number: \_\_\_\_\_  
Cell Number/Spouse Cell Number: \_\_\_\_\_  
Children Cell Number: \_\_\_\_\_  
School Telephone Number: \_\_\_\_\_  
Doctor Telephone Number: \_\_\_\_\_  
Bank/Credit Card Telephone Number: \_\_\_\_\_  
Insurance Company Information: \_\_\_\_\_

Whatever comes your way,  
you'll know what to do.

**Red Cross mobile apps  
put help in your hand.**



**24 hour number to  
call for assistance  
1-800-RED CROSS  
(1-800-733-2767)**

Download our preparedness apps today. Call \*\*REDCROSS from your mobile phone and we'll send you a link to download the apps, or search the iTunes app store or Google Play for American Red Cross.

# Hurricane Supply Kit

**The South Texas chapter of the American Red Cross recommends that you have the following items in your Hurricane Supply Kit.**

- At least a 7-day supply of non-perishable food and water. One gallon of water per person per day is recommended
- Battery powered portable television or radio with extra batteries
- Flashlight with extra batteries
- First Aid kit and manual
- Sanitation and hygiene items such as instant hand sanitizing gel, moist towelettes, toilet paper, and feminine hygiene products
- Whistle
- Kitchen accessories, cooking utensils, and manual can opener
- Cash
- Extra clothing, blankets, and sleeping bags
- Matches in a waterproof container
- Photocopies of identification, insurance, prescriptions, household inventory, credit cards, and your latest utility bill
- CD or photocopies of important documents such as birth/marriage certificates and titles
- Prescription medications, eyeglasses, contact lens solution, and hearing aid batteries
- Formula, baby food, diapers, and pacifiers
- Pet carriers, leashes, shot records, and food for each animal evacuating with you
- A good map showing county roads and highways
- Tire repair kit, booster cables, pump, and flares
- White distress flag
- Toys and games for children
- List of family phone numbers and addresses outside the area

# Hurricane Names

Have you ever wondered how a hurricane gets its name? The National Hurricane Center actually does not name tropical storms and hurricanes. Instead, the names are established by the World Meteorological Organization and then rotated every six years. If a storm is too deadly or costly, the name will be retired and never be used again.

2019	2020	2021	2022	2023	2024
—Andrea—	Arthur	Ana	Alex	Arlene	Alberto
Barry	Bertha	Bill	Bonnie	Bret	Beryl
Chantal	Cristobal	Claudette	Colin	Cindy	Chris
Dorian	Dolly	Danny	Danielle	Don	Debby
Erin	Edouard	Elsa	Earl	Emily	Ernesto
Fernand	Fay	Fred	Fiona	Franklin	Francine
Gabrielle	Gonzalo	Grace	Gaston	Gert	Gordon
Humberto	Hanna	Henri	Hermine	Harold	Helene
Imelda	Isaias	Ida	Ian	Idalia	Isaac
Jerry	Josephine	Julian	Julia	Jose	Joyce
Karen	Kyle	Kate	Karl	Katia	Kirk
Lorenzo	Laura	Larry	Lisa	Lee	Leslie
Melissa	Marco	Mindy	Martin	Margot	Milton
Nestor	Nana	Nicholas	Nicole	Nigel	Nadine
Olga	Omar	Odette	Owen	Ophelia	Oscar
Pablo	Paulette	Peter	Paula	Philippe	Patty
Rebekah	Rene	Rose	Richard	Rina	Rafael
Sebastien	Sally	Sam	Shary	Sean	Sara
Tanya	Teddy	Teresa	Tobias	Tammy	Tony
Van	Vicky	Victor	Virginie	Vince	Valerie
Wendy	Wilfred	Wanda	Walter	Whitney	William

For a printable hurricane tracking map, please click on this [link](#).

# Forecast Information



## Latest Weather Information

### National Weather Service

[www.weather.gov/rgv](http://www.weather.gov/rgv)

24 Hour Phone Recording:

361-289-1861



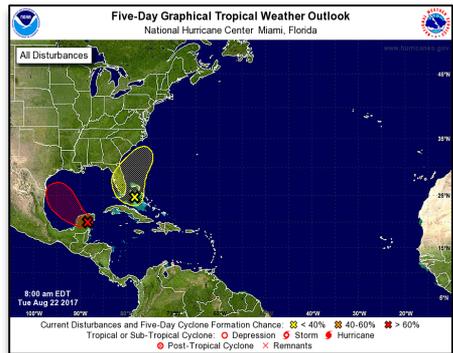
### National Hurricane Center

[www.hurricanes.gov](http://www.hurricanes.gov)



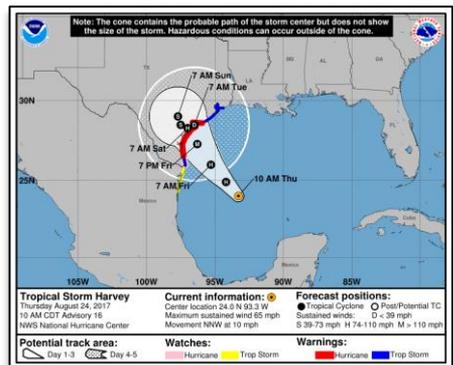
## Graphical Tropical Weather Outlook

- This NHC product provides an overview of all tropical cyclone activity and indicates areas of interest that have potential for tropical cyclone development.



## NHC Forecast Advisory

- Most recent position for a storm along with all coastline watches and warnings. Includes a 3 or 5 day track with error cone.
- Error cone represents a 5 year average error. Storms only stay within the error cone 67% of the time.
- DO NOT focus too closely on the exact track forecast – the little back line.
- Impacts may occur well outside the cone.



# Forecast Information

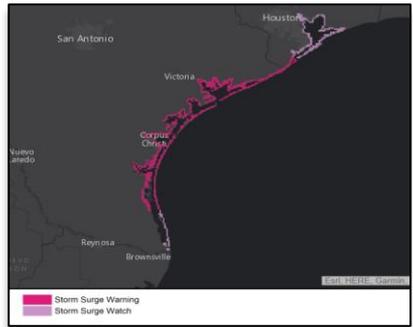
## Time of Arrival Graphics

- These maps are useful planning tools.
- One map shows the earliest reasonable arrival time of tropical storm force winds.
- A secondary map will show the most likely arrival time of tropical storm force winds.



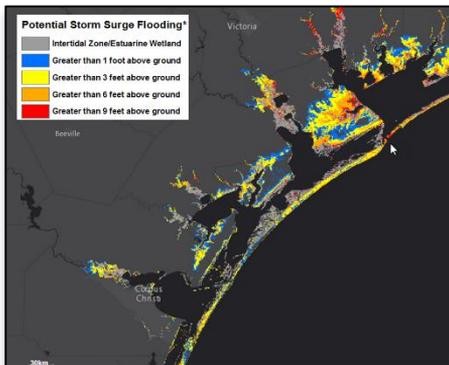
## Storm Surge Watch/Warning

- A storm surge watch is the possibility of life-threatening storm surge within 48 hours.
- A storm surge warning is the danger of life-threatening storm surge within 36 hours.
- If you are located in a storm surge watch or warning, you are not safe. Take action to protect your life. Promptly follow evacuation and other instructions from emergency management officials.



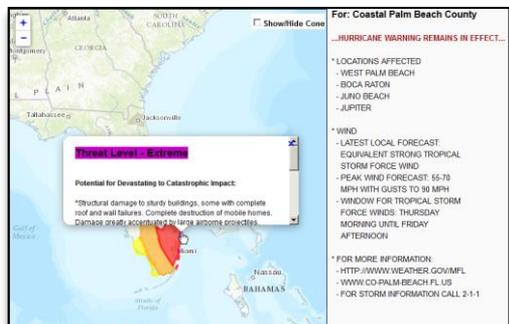
## Potential Storm Surge Flooding Map

- If a hurricane is threatening your community, go to [hurricanes.gov](http://hurricanes.gov) and view the potential storm surge flooding map, which will show the reasonable-worst case scenario from storm surge inundation for your area.



## Hurricane Threats and Impacts

- This product issued by local NWS offices will summarize potential impacts expected from a tropical cyclone.
- Click on the colored area and text that describes potential impacts will display.
- [www.weather.gov/srh/tropical?office=bro](http://www.weather.gov/srh/tropical?office=bro)



# Local Tropical Webpage

## NWS Brownsville/Rio Grande Valley Tropical Webpage

[Outlook](#)

[Threats and Impacts](#)

[Satellite](#)

[Radar](#)

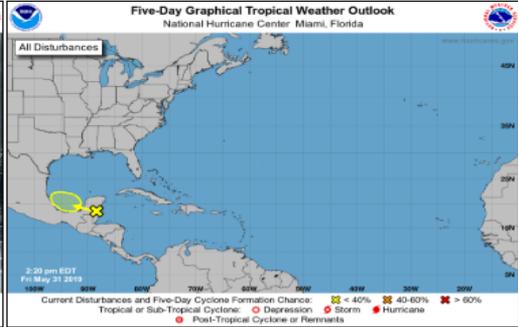
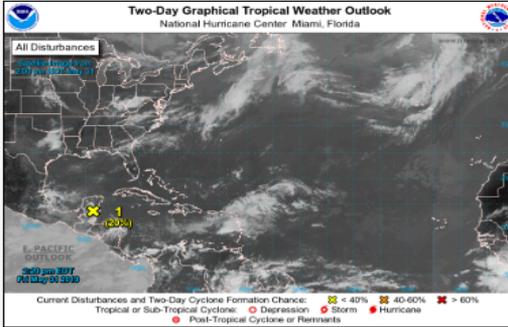
[Social Media](#)

[Preparedness](#)

[Links](#)

There are currently no active storms in the North Atlantic, Caribbean Sea, or Gulf of Mexico.

[Local Briefing from the National Weather Service office in Brownsville](#)



[Click each image above to view the full-size image.](#)

Special Tropical Weather Outlook  
NWS National Hurricane Center Miami FL  
2:20 PM EDT Fri May 31 2019

For the North Atlantic...Caribbean Sea and the Gulf of Mexico:

A broad area of low pressure accompanied by cloudiness and showers centered over the Yucatan Peninsula is forecast to move westward over the southern Bay of Campeche during the weekend. Some gradual development of this system is possible through early next week as long as it remains over water. Regardless of development, the disturbance will likely produce heavy rainfall over portions of southern Mexico during the next few days. Regular issuance of the Tropical Weather Outlook will begin at 2 AM EDT tonight with the beginning of the Atlantic hurricane season.

\* Formation chance through 48 hours...low...20 percent.

\* Formation chance through 5 days...low...30 percent.

\$\$

Forecaster Avila/Zelinsky

[Oprima aqui para ver la Perspectiva sobre las Condiciones del Tiempo Tropical en Español](#)

- **One-Stop Shop** for all tropical related forecast information, tailored to each forecast area along U.S. coastline.
- **Active Storms** tab appears when NHC initiates Tropical Cyclone advisories.
- **Local Products** tab also becomes active when WFO Issues Watches/Warnings for local area.
- **Satellite and Radar** data is always available.
- **Preparedness** tab is always available and provides quick access to local evacuation maps, preparedness guides, and videos.
- Scrolling down the page provides access to NHC products related to each active storm and WPC rainfall products.

# Final Checklists

## Actions to Take When a Storm is in the Gulf

- Listen frequently to radio, TV, or NOAA weather radio for bulletins and forecasts of the storm's progress.
- Double check items in your emergency supply kit.
- Fuel and service your vehicles.
- Inspect and secure mobile home tie-downs.
- Board up windows (if shutters do not exist) in case storm moves quickly and you have to leave!

### **TAPE PROVIDES NO PROTECTION!**

- Store lawn furniture and other loose, light weight objects, such as garbage cans and garden tools.
- Garage or store vehicles that are not being used.
- Follow instructions issued by local officials.

### **EVACUATE IMMEDIATELY IF ORDERED TO DO SO!**

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## Final Actions to Take if Leaving

- Turn off propane tanks.
- Unplug small appliances.
- Empty refrigerator and freezer.
- Turn off utilities if ordered to do so.
- Lock home securely.
- Take pets with you.



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## Final Actions to Take if Staying

- Close storm shutters.
- Notify family members of your evacuation plans.
- Lower water level in swimming pool by one foot.
- Turn refrigerator or freezer to coldest setting and open only if necessary. (25 pounds of dry ice will keep a 10-cubic foot freezer below freezing for 3-4 days.)
- Follow instructions from emergency managers and be prepared to turn off utilities if ordered to do so.
- Board up remaining doors, brace garage door, and remain inside. Stay away from boarded up windows.
- Take refuge in a predetermined safe room, such as an interior closet, bathroom, or hallway.
- **DO NOT EXPECT EMERGENCY RESPONDERS TO BE OF ANY ASSISTANCE DURING A LANDFALLING HURRICANE!**

# Hurricane Surf and Rip Currents

## Hurricane Surf



Along with big surf come strong rip currents. Rip currents are the leading surf hazard for all beachgoers and result in over 100 drownings every year in the United States. The strength and size of rip currents are related to the size of the surf and wave period. Rip currents typically form at the low spots in the surf, at the breaks in the sandbars, and near jetties and piers. The north side of Isla Blanca jetty is renowned for large rip currents when tropical cyclones are in the Gulf.

## Rip Currents

If caught in a rip current, don't panic, but swim parallel to the shore. The current is usually only about 50 feet wide and you should be able to swim out of it. At that point, you can swim back to shore. If you are still unable to reach the shore, draw attention to yourself: face the shore, wave your arms, and yell for help.

**RIP CURRENTS**  
**Break the Grip of the Rip!**

ESCAPE ESCAPE  
ESCAPE ESCAPE  
RIP CURRENT

Rip currents are powerful currents of water moving away from shore. They can sweep even the strongest swimmer out to sea.

**IF CAUGHT IN A RIP CURRENT**

- ◆ Don't fight the current
- ◆ Swim out of the current, then to shore
- ◆ If you can't escape, float or tread water
- ◆ If you need help, call or wave for assistance

**SAFETY**

- ◆ Know how to swim
- ◆ Never swim alone
- ◆ If in doubt, don't go out

More information about rip currents can be found at the following web sites:  
[www.ripcurrents.noaa.gov](http://www.ripcurrents.noaa.gov)  
[www.usla.org](http://www.usla.org)

# Student Information Checklist

<ul style="list-style-type: none"><li>• Assure that all contact information and emergency contact information is accurate with your campus' registrar's office.</li></ul>
<ul style="list-style-type: none"><li>• If your campus offers an emergency management communication system, register as a user of the system.</li></ul>
<ul style="list-style-type: none"><li>• Plan your method of evacuation and your destination before a storm enters the gulf.</li></ul>
<ul style="list-style-type: none"><li>• Monitor local radio and TV stations for updates.</li></ul>
<ul style="list-style-type: none"><li>• Contact your campus Student Affairs Office if you need assistance with evacuation.</li></ul>
<ul style="list-style-type: none"><li>• If you require any assistance due to a disability-related accommodation, please contact your campus Disability Services Office to make necessary arrangements.</li></ul>
<ul style="list-style-type: none"><li>• Communicate with your family regarding status and location</li></ul>
<ul style="list-style-type: none"><li>• If your campus is evacuating, you will not be allowed to remain on-campus and it is highly recommended that you leave the city. Do not go to a coastal location.</li></ul>
<ul style="list-style-type: none"><li>• Take your driver's license, student I.D. card, and a copy of your housing lease as well as medical insurance cards and other important documents when you evacuate.</li></ul>
<ul style="list-style-type: none"><li>• If you bank with a local bank or credit union whose infrastructure may be damaged by the storm, withdraw some funds as you may not have access to them once you leave the area.</li></ul>
<ul style="list-style-type: none"><li>• International students must take passports with US student visa inside, I-20, I-94, student I.D. and class schedule.</li></ul>
<ul style="list-style-type: none"><li>• If using personal transportation, take as many of your valuable or irreplaceable items as you are able.</li></ul>
<ul style="list-style-type: none"><li>• If driving, make sure all roads that you are driving are open and safe. You can call the Department of Transportation at 1-800-452-9292 or check on-line for conditions at <a href="http://www.txdot.gov">www.txdot.gov</a></li></ul>
<ul style="list-style-type: none"><li>• Follow baggage limits if participating in an assisted evacuation program.</li></ul>
<ul style="list-style-type: none"><li>• Take a 30-day supply of medications in original pharmacy containers.</li></ul>
<ul style="list-style-type: none"><li>• Make a record of any valuables left behind (description, serial numbers, etc). Take pictures of all belongings.</li></ul>
<ul style="list-style-type: none"><li>• If you are evacuating to a shelter, make appropriate arrangements for pets. Most shelters do not accept pets.</li></ul>
<ul style="list-style-type: none"><li>• Do not plan to return to campus until an all-clear is given (monitor media and campus web-site).</li></ul>

## STATE OF TEXAS EMERGENCY ASSISTANCE REGISTRY

# STEAR

Do you or anyone you know need some form of assistance during times of an emergency/disaster event? The state of Texas offers Texans the option to register with the STEAR program, a FREE registry that provides local emergency planners and responders with additional information on the needs in their community.

(Texas communities use the registry information in different ways. Registering yourself in the STEAR registry DOES NOT guarantee that you will receive a specific service during an emergency. Available services will vary by community. For more information on how your community will use information in the STEAR registry, contact your local emergency management office.)

### Who Should Register?

- People with Disabilities
- People with access and functional needs such as:
  - People who have limited mobility
  - People who have communication barriers
  - People who require additional medical assistance during an emergency event
  - People who require transportation assistance
  - People who require personal care assistance

### How to Register

- <https://STEAR.dps.texas.gov>
- Dial 2-1-1 or use your video phone relay option of choice to contact 211
- Printed or electronic forms (Contact your local government)

### Required Information to Register

- Name
- Address
- Phone Number
- Primary Language

Registration is **VOLUNTARY**.

### Additional questions asked to capture vital information for local emergency planners and responders

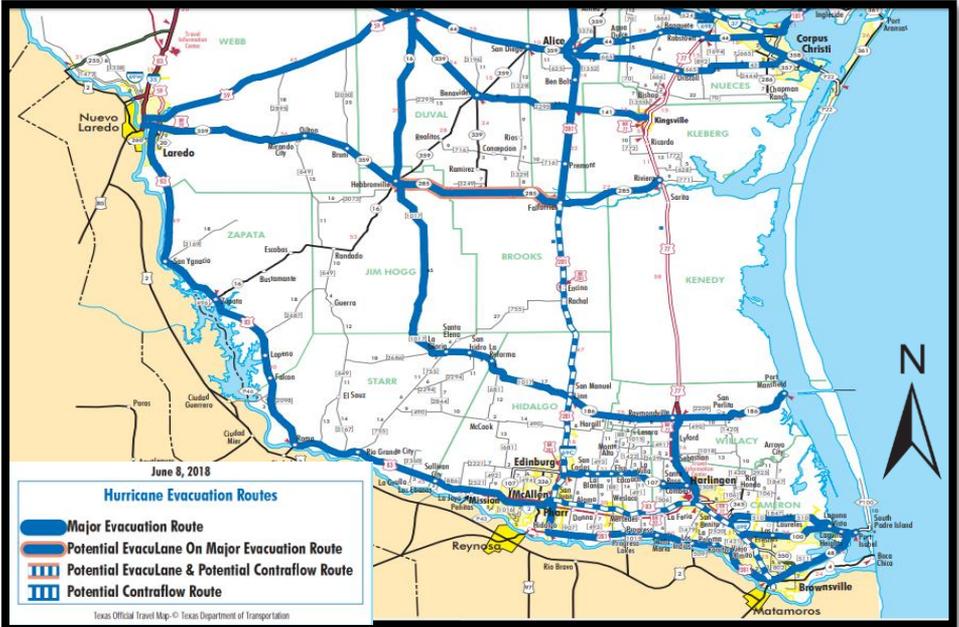
- Emergency Contact Information
- Caregiver Information
- Pets
- Transportation assistance for home evacuation
- Communication Barriers
- Disability, Functional or Medical Needs

All of the information you provide will be kept

**COMPLETELY CONFIDENTIAL**



# Evacuation Routes



Evacuees need to consider the projected path of the hurricane when choosing an evacuation route and destination. When evacuating, be sure to check local weather and highway conditions before departing. When local authorities order an evacuation of your area, leave immediately!

## Final Actions before Evacuating

- Follow evacuation orders provided by your local officials.
- Once the evacuation order has been given, LEAVE IMMEDIATELY!
- Take your Hurricane Supply Kit with you.
- Leave as early as possible to avoid heavy traffic and hazardous weather.
- Do not stay in a mobile home near the coast under any circumstance.
- Remember that large boats and travel trailers may not be allowed to cross local bridges and causeways once high winds commence.
- Prepare to stay at your evacuation destination for a week or more, as re-entry into the affected area may be restricted.

## Texas Road Information

- TXDOT Highway Conditions 1-800-452-9292 or [www.drivetexas.org](http://www.drivetexas.org)
- TXDOT Rio Grande Valley Office, Pharr 1-956-702-6100
- Emergency Broadcast Information KURV News Talk 710 AM
- Twitter @TxDOTPharr

# Returning Home

**IF YOU EVACUATED THE AREA, WAIT FOR AN ALL CLEAR FROM THE CITY OR COUNTY BEFORE ATTEMPTING TO RETURN TO YOUR HOME. BE PREPARED TO SHOW PROOF OF RESIDENCE BY HAVING A COPY OF YOUR LATEST UTILITY BILL.**

## Debris Cleanup

- Cities and counties will publish a schedule for debris pick-up and removal. Debris cannot be removed from private property.
- Construction materials, vegetative debris, household hazardous waste and household appliances will need to be placed into separate piles and moved to the curbside for pick-up.



## General Cleanup

- Be cautious of structural damage and downed power lines.
- DO NOT attempt to move structural supports or large pieces of debris.
- DO NOT run power generators indoors. Inhalation of carbon monoxide from the exhaust can cause death. Ensure exhaust is well ventilated.
- DO NOT use open flames indoors.
- Restrict your driving to emergency use only. Road conditions may not be safe until road debris is cleared.

## Water

- Listen for instructions regarding public water supply. Use only bottled, boiled or treated water until you know that your water supply is safe.
- You can use household chlorine bleach to treat water for drinking or cleaning. Add 1/8 teaspoon of bleach per gallon of clear water or 1/4 teaspoon of bleach per gallon if water is cloudy. Allow water to stand for 30 minutes before using.

## Interior Cleanup

- Disinfect and dry interior buildings and items inside. This will prevent growth of some bacteria, viruses, mold, and mildew that can cause illness.
- Clean walls, floors, and counter tops with soap and water. Disinfect them with a solution of 1 cup of bleach to 5 gallons of water.
- Wash all clothes and linens in hot water. Air dry and spray all unwashable items with disinfectant. Steam clean carpets. Throw away all items touched by water that cannot be disinfected.

# Returning Home

## Utility Cleanup

- Check for gas leaks. If you smell or hear gas leaking, leave immediately. DO NOT use the phone or turn on lights in your home. Call the gas company from a neighbor's phone.
- Report any visible damage of power lines to the electric company. Turn off power at main breaker if any electrical equipment or circuits have been exposed to water.
- DO NOT connect generators to your home's electrical circuits. If a generator is on line when electrical service is restored, it can become a major fire hazard. Also, line workers working to restore power will be endangered if a generator is hooked up to the home's circuits.
- It is likely that an electric company other than your own will reconnect the lines to your home; however, they cannot turn the service back on. Only your electric company can actually turn the power back on to your house.



## Sewage Cleanup

- If you suspect water or sewage lines are damaged, do not use your plumbing (toilets, sinks, etc.). Contact the water company or a plumber for repairs.
- A chemical portable commode can be created by the following:
  - Use 5 gallon buckets with tight lids, lined with heavy duty plastic garbage bags.
  - Add kitty litter to the bucket as a disinfectant and deodorizer. Keep lids on firmly.
  - Keep buckets in a cool, dark place. Clean and disinfect buckets immediately.
- Your toilet can also be used by flushing until the bowl has no water. Then, line with heavy duty trash bags and disinfect with chlorine bleach after each use. Remove waste to an outside location.
- If significant sewer outages have occurred, instructions for disposal of human wastes will be announced.
- DO NOT dispose of human waste through your regular trash!

# Emergency Information

## CAMERON COUNTY

- **County Emergency Management**  
956-547-7000  
Twitter: @cameron\_county  
Facebook: cameroncountym
- **County Sheriff**  
956-544-0860\*
- **City of Brownsville**  
956-504-7405  
[oem.cob.us](http://oem.cob.us)  
Twitter: @BOEMHS  
Facebook: 546HELPCOB
- **City of Harlingen**  
956-216-5920  
[myharlingen.us](http://myharlingen.us)  
Twitter: @Harlingen\_Texas  
Facebook: Harlingen, Texas
- **City of La Feria**  
956-797-3121  
[cityoflaferia.com](http://cityoflaferia.com)
- **Town of Laguna Vista**  
956-943-1792  
[lvtexas.us](http://lvtexas.us)  
Twitter: @LagunaVistaPD  
Facebook: lvtexas
- **City of Los Fresnos**  
956-233-5768  
[citylf.us](http://citylf.us)  
Twitter: @CityofLosFresnos  
Facebook: City of Los Fresnos
- **City of Port Isabel**  
956-943-2727  
[portisabel-texas.com/cityhall](http://portisabel-texas.com/cityhall)  
Twitter: @portisabeltexas  
Facebook: Port Isabel Texas
- **City of San Benito**  
956-361-3800  
[cityofsanbenito.com](http://cityofsanbenito.com)  
Twitter: @SanBenitoTX  
Facebook: San Benito, Texas

- **City of South Padre Island**  
956-762-8144  
[myspi.org](http://myspi.org)  
Twitter: @SouthPadreTexas  
Facebook: South Padre Texas

## HIDALGO COUNTY

- **County Emergency Management**  
956-318-2615  
[hidalgocounty.us](http://hidalgocounty.us)  
Twitter: @HidalgoCounty  
Facebook: Hidalgo County, Texas
- **County Sheriff**  
956-383-8114\*
- **City of Alamo**  
956-781-2004  
[alamotexas.org](http://alamotexas.org)  
Twitter: @CityofAlamo  
Facebook: City of Alamo
- **City of Donna**  
[cityofdonna.org](http://cityofdonna.org)  
Twitter: @CityofDonna  
Facebook: cityofdonna
- **City of Edinburg**  
956-383-7691  
[cityofedinburg.com](http://cityofedinburg.com)  
Twitter: @cityofedinburg  
Facebook: CityofEdinburgGovernment
- **City of Hidalgo**  
956-843-2286  
[cityofhidalgo.net](http://cityofhidalgo.net)  
Facebook: cityofhidalgotx
- **City of McAllen**  
956-681-1234  
[mcallen.net](http://mcallen.net)  
Twitter: @CityofMcAllen  
Facebook: McAllenTX
- **City of Mercedes**  
956-565-3102  
[cityofmercedes.com](http://cityofmercedes.com)  
Facebook: The City of Mercedes

**Do Not Call 911 for Non-Emergencies!**

# Emergency Information

## HIDALGO COUNTY (continued)

- **City of Mission**  
956-580-8705  
[missiontexas.us](http://missiontexas.us)  
Twitter: @CityofMissionTX  
Facebook: City of Mission Government
- **City of Pharr**  
956-787-7541  
[pharrem.com](http://pharrem.com)  
Twitter: @PharrTX  
Facebook: CityofPharr  
[Pharr Life](#)
- **City of Weslaco**  
956-968-0367  
[Weslaco Emergency Management](#)  
Twitter: @WeslacoCity  
Facebook: CityWeslaco

## STARR COUNTY

- **County Emergency Management**  
956-716-4800  
[www.co.starr.tx.us](http://www.co.starr.tx.us)
- **County Sheriff**  
956-487-0672\*
- **Rio Grande City**  
956-487-0672  
[cityofrgc.com](http://cityofrgc.com)  
Twitter: @CityofRGC  
Facebook: CityofRGC
- **City of Roma**  
956-849-1411  
[cityofroma.net](http://cityofroma.net)  
Facebook: cityofroma

## WILLACY COUNTY

- **County Emergency Management**  
956-689-5456  
[Willacy County Texas](#)  
Facebook: CountyofWillacy
- **County Sheriff**  
956-689-5577\*

- **City of Lyford**  
956-347-3512  
[lyfordtx.us](http://lyfordtx.us)
- **Port Mansfield**  
956-689-3332  
[portofportmansfield.com](http://portofportmansfield.com)
- **City of Raymondville**  
956-689-2443  
[raymondville.tx.us](http://raymondville.tx.us)

## ZAPATA COUNTY

- **County Emergency Management**  
956-765-9942  
[Zapata County Texas](#)
- **County Sheriff**  
956-765-9960\*

## BROOKS COUNTY

- **County Emergency Management**  
361-326-3681  
[Brooks County Texas](#)
- **County Sheriff**  
361-325-3697\*
- **City of Falfurrias**  
361-325-2420  
[ci.falfurrias.tx.us](http://ci.falfurrias.tx.us)  
Facebook: Falfurrias, TX

## JIM HOGG COUNTY

- **County Emergency Management**  
361-527-4100  
[Jim Hogg County Texas](#)

## KENEDY COUNTY

- **County Emergency Management**  
361-595-8527  
[Kenedy County Texas](#)
- **County Sheriff**  
361-294-5205\*

**Do Not Call 911 for Non-Emergencies!**



# Spanish Language Alerts



## NOAA Weather Radio Goes Bilingual in the Rio Grande Valley

In a world plugged into continuous weather information, NOAA Weather Radio remains a critical tool that can alert people to potentially life-threatening weather in the middle of the night when the power goes out. Across the Rio Grande Valley, weather-vulnerable neighborhoods contain a significant number of residents whose primary language is Spanish. Understanding and being able to translate an alert from English to Spanish can be difficult for many of these residents; the additional time to process the information and take action could literally be the difference between life and death. Until now.

A Homeland Security Grant from FEMA sparked a two-year collaborative effort among the National Weather Service, the State of Texas, and the Lower Rio Grande Valley Development Council culminating with the Spanish Language Public Safety Warning System. The Warning System's core components include two new NOAA Weather Radio transmitters, broadcasting from Harlingen and Pharr. Broadcasts and special alerts will cover nearly all communities. Spanish language radio and television stations that are part of the Emergency Alert System will be able to select the feed(s) from the Spanish language transmitters, removing the need for a third party to translate the information from English to Spanish.

Should a hurricane threaten the Rio Grande Valley, owners of NOAA Weather Radios will be able to tune to specific frequencies and receive critical information that will describe the hazard, potential impact, and recommended safety actions in the language they are most comfortable hearing.

Transmitter Location	Station Identification	Frequency
Bluetown/La Feria	WZS-2542	162.450 (channel 3)
Pharr	WZS-2541	162.475 (channel 4)

# More to the Story Than Category!



Left: Bolivar Peninsula scraped clean by Ike's Storm Surge in 2008. Center: Damaged and destroyed homes along the Jersey Shore from Sandy in 2012. Right: Interstate 10 along Jefferson/Chambers Co. Line in 2017 during Harvey.

## Flooding – on Land and by the Sea – Often Trumps the Wind

A hurricane, by definition, is a "bad" storm. At minimum, a hurricane will disrupt a routine for a few days. At maximum, a hurricane will devastate a community forever. For many people over the past four decades, the perception of hurricane "badness" came from the Saffir-Simpson Hurricane Scale. It seemed so easy to grasp. A Category 1 hurricane contained 74 to 95 mph winds, a storm surge of 4 to 5 feet, and surface pressure  $\geq 980$  mb. A Category 5 hurricane contained wind greater than 155 mph, a storm surge  $> 18$  feet, and surface pressure  $< 920$  mb.

Then came Allison. Charley. Katrina. Ike. Sandy. And...Harvey!

Each of these storms damaged billions of dollars in property, and all but Charley killed dozens to hundreds of people. None of these storms had impact that purely matched the Saffir-Simpson Scale. Only Charley (2004) met the wind criteria, now the only feature of the Saffir-Simpson Hurricane Wind Scale (SSHWS). The following table summarizes each storm.

Storm	Main Impact Area	Year	SSHWS (landfall)	Damage (\$billions) <sup>†</sup>	Primary Impact
Allison	Houston	2001	None	5.5	<b>3+ feet of rainfall</b> ; record inland flooding in Houston
Charley	Southwest Florida	2004	4	15.4	Extensive Wind Damage, but only a <b>4 to 7 foot storm tide</b>
Katrina	Louisiana and Mississippi	2005	3	81.3	<b>Storm tide up to 28 feet.</b> Catastrophic storm surge flooding; thousands of persons drowned
Ike	Upper Texas and Southwest Louisiana	2008	2	29.3	<b>Storm tide up to 20 feet.</b> Extensive to catastrophic storm surge flooding; several dozen persons drowned or missing
Sandy	Northeast U.S.	2012	1*	50+	Vast majority of damage from <b><math>\geq 10</math> foot storm tide</b> along NJ/NY coast; dozens of persons drowned
Harvey	Texas	2017	4	125+	<b>\$100 billion</b> from freshwater flooding in SE TX when system was a <b>Tropical Storm</b>

\*Storm considered Post-Tropical at Landfall

<sup>†</sup>Dollar values in year of landfall

# 2018: A \$200 Million Flood With No Name



Northeast Weslaco, June 2018

## Rainfall Exceeds Event Records in Weslaco; Rivals Beulah Elsewhere in RGV

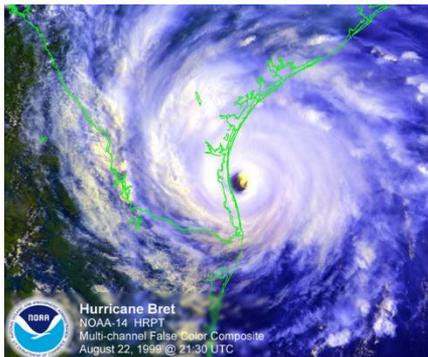
The Great June 2018 Flood of the Rio Grande Valley will be remembered for a long time to come, not just for its damage which likely exceeded \$200 million, but also for the challenges faced by the region for potentially much more rainfall from an organized tropical cyclone that decides to sit and spin over the region for a few days.

The flooding was not the result of a tropical cyclone. Rather, a broad tropical wave originating in the western Caribbean Sea moved across the Yucatan peninsula on June 15th and 16th, 2018. The slow moving but persistent system approached the Texas coast on Sunday, June 17th before finally arriving on June 18th. As the center axis of the wave passed the longitude of the South Texas coastline, the gates opened to repeated surges of tropical moisture deep into the atmosphere with origins in the western Caribbean Sea. A series of upper level disturbances interacted with this wave throughout its life cycle and helped to maintain a broad area of low pressure at all levels of the atmosphere for the period from June 18th through June 22nd across Rio Grande Valley, and the adjacent Gulf waters. Several surface-based boundaries and convergence along the coastline also aided the production of heavy rainfall. The memorable events for the region began on June 19th (Falfurrias, more than 12" of rainfall), then peaked on June 20th (more than 15" in Weslaco, including over 11" in just three hours) and June 21st (6 to 11" in the Mission/McAllen region). For each case, several feet of water were noted in poor drainage locations.

The following information is from initial reports from Emergency Management partners across the Rio Grande Valley.

- More than 7,500 residences and businesses in Cameron and Willacy County with flood damage defined as minor to destructive by FEMA Standards.
- At least 10,000 residences and businesses considered "affected" by the floods. This includes the 7,500 listed above.
- More than 600 persons in at least ten shelters at the peak of the area-wide flooding
- Several thousand vehicles with varying degrees of flood damage
- Dozens to hundreds of roads, from neighborhood streets to major thoroughfares and frontage roads, closed during and after peak flooding
- More than 2,000 rescues from vehicles and homes were conducted
- 21,000 meals served by the American Red Cross
- Public infrastructure damage of at least \$50 million in Cameron and Willacy County alone

# 20<sup>th</sup> Anniversary of Hurricane Bret



## A Close Call for the RGV

Hurricane Bret made landfall on the Padre Island National Seashore in Kenedy County, home of the King Ranch. Bret was the first major hurricane of the 1999 Atlantic hurricane season and the first to make landfall in Deep South Texas since Allen in 1980. Bret reached peak intensity as a Category 4 (144 mph) hurricane 70 miles east of South Padre Island but weakened just prior to landfall and made landfall as a small Category 3 hurricane with winds of 115 mph during the evening of August 22nd.



Damage and impacts from Bret were minimal due the landfall location. Storm tides estimated as high as 10 feet along the Kenedy County shoreline left twelve new cuts from near Port Mansfield to north of Baffin Bay. Torrential rains dropped more than a foot of rain near Sarita (Kenedy County) and nearly nine inches in Falfurrias (Brooks County). The heavy rains filled washes and left high standing water across northern Kenedy County and northern Brooks County; Los Olmos Creek near Falfurrias crested at 10 feet during the evening of August 24th, causing additional minor flooding.

Hurricane-force winds were concentrated in the eyewall, but included all of Kenedy County and northern Brooks County. Peak winds reached 98 mph near Falfurrias, 90 mph along the Laguna Madre in southern Kenedy County, and 76 mph at Port Mansfield. Peak winds across the Rio Grande Valley only reached tropical storm strength. Wind damage within the eyewall included a felled 310-foot radio tower, numerous destroyed windmills, and hundreds of mesquite and oak trees blown down on the King Ranch. Several roofs were blown off buildings in Falfurrias, and some trailers were overturned in Port Mansfield. In Brownsville, Harlingen, and Raymondville, scattered downed tree limbs was the only evidence a tropical cyclone had been nearby. One small tornado damaged a business and a few mobile homes in Weslaco.

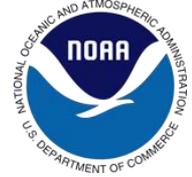
Had Bret curved into the coast at the mouth of the Rio Grande – 70 miles south of actual landfall – damage would have been devastating. A ten foot storm tide would have washed over the City of South Padre Island and edged into Port Isabel, Laguna Vista, and other shoreline communities. Winds 125 mph or stronger would have severely damaged or destroyed older or unprotected buildings near the Cameron County coast; hurricane force winds through Cameron County would have created widespread damage to poorly built structures, blown down thousands of trees, and created long lasting power outages to at tens of thousands of residents. Valley-wide rainfall between 10 and 15 inches would have left high standing water in most areas, with some water not draining for weeks, similar to the aftermath of Hurricane Dolly in 2008. Storm surge and stronger winds from the “model” Bret would have left several billion dollars more in damage than Dolly due to stronger winds and storm surge inundation.

**National Weather Service  
Brownsville/Rio Grande Valley, TX**

20 S. Vermillion Avenue  
Brownsville, TX 78521

**Phone:** 956-504-1432 x2

**Fax:** 956-982-1766



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