

## FLOOD SAFETY

1. Learn the safest route from your home or business to higher, safer ground, but stay tuned to reports of changing flood conditions.
2. If emergency officials tell you to evacuate or leave your home, go immediately to a safe shelter, hotel or relative's house.
3. Turn off all utilities, gas and electricity at the main switch. Stay away from power lines and electrical lines. Be alert for gas leaks.
4. Do not walk through flowing water. Drowning is the number one cause of flood related deaths. Currents can be deceptive; six inches of moving water can knock you off your feet.
5. Do not drive through a flooded area. More people drown in their cars than in any other location. Vehicles also push water into homes and cause additional property damage.

## IMPORTANT USEFUL WEBSITES

[www.bryantx.gov](http://www.bryantx.gov)  
[www.bcsunited.net](http://www.bcsunited.net)  
[www.fema.gov](http://www.fema.gov)  
[www.usgs.gov](http://www.usgs.gov)  
[www.noaa.gov](http://www.noaa.gov)  
[www.nws.noaa.gov](http://www.nws.noaa.gov)  
[www.floods.org](http://www.floods.org)  
[www.weather.gov](http://www.weather.gov)  
[www.tfma.org](http://www.tfma.org)  
[www.twdb.state.tx.us](http://www.twdb.state.tx.us)



**CITY OF BRYAN**  
*The Good Life, Texas Style.™*

## FLOOD PROTECTION FOR YOU, YOUR FAMILY AND YOUR PROPERTY

**Prepared by:**

**City of Bryan  
Engineering Services Division**

## INTRODUCTION

The City of Bryan is dedicated to minimizing the loss of life and property that is associated with flooding events. Education and prevention are valuable and proven tools that help communities become resistant to these natural disasters. The City of Bryan recognizes that its entire community is susceptible to flooding, not just those structures located within Special Flood Hazard Areas (SFHA's). The following information has been provided to help inform property owners located within the SFHA, flood prone areas and also all property owners within the City of Bryan.

## FLOOD HAZARD

The City of Bryan is located in the central portion of Brazos County approximately midway between the Brazos and Navasota Rivers. The area consists mainly of moderately low, gently sloping terrain drained by a combination of man-made and natural drainage channels. Bryan is centered on the ridge that separates the Brazos River and the Navasota River because that is where the original rail line was extended, making Bryan a hub of many industries. To the south, the Texas Agricultural and Mechanical College established in 1871, also established on the rail line, created the sister community College Station, and due to the size of what is now Texas A&M University, a great deal of educational and research activity is centered in this area in addition to normally expected agricultural and business enterprises.

Although ponding of runoff produced by hurricanes from the Gulf of Mexico occasionally causes significant flooding in Bryan, the most severe flooding in the most parts of the City has been caused by intense, relatively confined thunderstorm activity during spring and fall weather patterns. In earlier times, significant portions of land adjacent to the Brazos and Navasota Rivers were inundated by seasonal floodwaters, but both of these rivers now have a high degree of flood control elements and pose little threat within the City Limits. The twin flooding events of October 1994 and April 1995 each caused significant local damage, as well as reminding us that major storms are not always separated by decades of time. Both storm events met or exceeded the predicted 1% annual rainfall amounts in some parts of the community, leading to the conclusion that we received two '100-year' storms within 6 months. Since that time, isolated areas of Bryan have received intense rainfall amounts which have the effect of overwhelming the drainage systems that were constructed prior to modern flood management practices. Because Bryan was incorporated in 1872, The City of Bryan is actively working with its Capital Improvement Plan to identify and correct many of these older 'problem areas' for the benefit of the City as a whole.

More recently the intense short duration rain storms of May 2016 reminded us that there are still improvements needed and show how our local drainage system is sensitive to that type of heavy rainfall over a short time period.

## FLOOD INSURANCE

The purchase of federal flood insurance is highly recommended. Basic homeowner's insurance policies don't cover damage from floods. The City of Bryan participates in the National Flood Insurance Program (NFIP) which means that federally subsidized flood insurance is available to everyone in the City. Remember there is a 30-day waiting period before a policy becomes effective. Some people have purchased flood insurance because it was required by the bank or loan company when they obtained a mortgage or home improvement loan. Usually these policies just cover the building's structure and not the contents. As a result of the kind of flooding that occurs in Bryan, there is usually more damage to furniture and contents than there is to the structure, so policies that include content coverage are strongly encouraged. Remember that a flood insurance policy must be renewed each year.

**Mandatory Purchase Requirement:** The mandatory purchase requirement applies to all forms of federal or federally related financial assistance for buildings located in a Special Flood Hazard Area (SFHA). This requirement affects loans and grants for the purchase, construction, repair or improvement of any publicly or privately owned buildings in a SFHA, including machinery, equipment, fixtures and furnishings contained in such buildings. If a building is located in a SFHA, the agency or lender is required by law to require the recipient to purchase a flood insurance policy on the building.

For more information about flood insurance contact:

- [www.bryantx.gov](http://www.bryantx.gov)
- [www.fema.gov/nfip](http://www.fema.gov/nfip)
- The Bryan Public Library
- Bryan Engineering Services Division
- Your insurance agent

## PROPERTY PROTECTION

Rather than wait for a flood to occur, you can act now to protect your property from flood damage. Various alternatives are available to help minimize flooding. If the floor level of your property or structure is lower than the Base Flood Elevation (BFE) located on the City's Flood Insurance Rate Map (FIRM), consider ways to prevent flooding from occurring such as retrofitting your building. "Retrofitting" means altering your building to eliminate or reduce flood damage.

### Retrofitting measures include:

1. Elevating the building so that flood waters do not enter or reach any damageable portion of it,
2. Constructing barriers out of fill or concrete between the building and flood waters,
3. "Dry floodproofing" to make the building walls and floor watertight so water does not enter,
4. "Wet floodproofing" to modify the structure and locate the contents so that when flood waters enter the building there is little or no damage, and
5. Preventing basement flooding from sewer backup or sump pump failure.

There are good references on retrofitting in the Bryan Public Library. Many of these will inform you about retrofitting techniques and help you decide which is best for you.

## NATURAL AND BENEFICIAL FUNCTIONS

The City of Bryan is a beautiful place to live as represented by our motto; "The Good Life – Texas Style". The undisturbed creeks and streams provide a wide range of benefits to the human and natural systems. They provide flood storage and conveyance, reduce flood velocities and flood peaks. Water quality is improved through the drainage ways ability to filter nutrients and impurities from runoff and process organic wastes. The ponds and steadily flowing streams provide breeding and feeding grounds for fish and wildlife, create and enhance waterfowl habitat, and protect habitats for rare and endangered species. The floodplains are an important asset. They provide open space, aesthetic pleasure and areas for active and passive uses.

## FLOOD WARNING SYSTEM

If flooding is imminent and evacuation of any portion of the City is advised, the City of Bryan will notify you through local radio and cable TV through the Brazos County Emergency Management System. Please call the Brazos County Emergency Management Office at (979) 458-8750 in reference to evacuation notices, procedures and shelters. Citizens are also encouraged to monitor NOAA weather broadcasts for critical weather information.

## FLOODPLAIN DEVELOPMENT PERMIT REQUIREMENTS

All development in the City of Bryan needs local and sometimes state permits. Contact the City Bryan's

Development Services Department at (979) 209-5030 for advice before you build, fill, place a manufactured home or otherwise develop your property. The zoning ordinance, subdivision regulations, side development ordinance, flood control ordinance and the International Building Codes all have special provisions regulating construction and other developments within floodplains. Without these types of provisions, flood insurance through the National Flood Insurance Program (NFIP) would be much more costly to property owners in the City of Bryan. Any development in the floodplain without a permit is illegal; such activity can be reported to the Floodplain Administrator at (979) 209-5030.

## SUBSTANTIAL IMPROVEMENT REQUIREMENTS

What is substantial improvement? The National Flood Insurance Program (NFIP) requires that any reconstruction, rehabilitation, addition or other improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure before the start of the construction of the improvement, must conform or meet the same construction requirements as a new building and be constructed above the minimum Base Flood Elevation (BFE) listed on the City of Bryan's Flood Insurance Rate Map (FIRM).

What is substantial damage? Substantial damage means damage of any origin sustained by a building or structure when the cost of restoring the building to its pre-damaged condition would equal or exceed 50% of the market value of the building before the damage occurred. Substantial damage is measured in this manner regardless of the actual amount of repair work performed.

The City of Bryan requires by ordinance that any substantial improvement or substantial damage improvement must have a building permit. Permit information can be obtained at the Development Services Department located at the Municipal Building or by calling (979) 209-5030.

## DRAINAGE SYSTEM MAINTENANCE

It is illegal in the City of Bryan to dump any type of debris into a creek, stream, river or standing body of water. This debris can become entangled in culverts and shallow streambeds, or drainage ditches and impede drainage causing the flow of water to back up. Citizens of Bryan should also keep drainage ditches on their property free of debris, foliage and vegetation that would impede the flow of water. Debris dumping should

be reported to the City of Bryan's Public Works Department by calling (979) 209-5900.

## FLOOD INFORMATION

Citizens of Bryan can obtain flood information concerning flooding, flood maps, mandatory flood insurance purchase requirements, flood insurance requirements and inquiries and flood zone determinations; including location within floodway, historical flooding hazard area or local drainage problem area, from the City of Bryan's Floodplain Administrator at the Municipal building or by calling (979) 209-5030.

Elevation certificates of properties in the Special Flood Hazard Areas (SFHA's) may be available and on file at The Engineering Services Division at the Municipal Building. Copies are available upon request.

Real time river gauge information can be obtained through a link on the City of Bryan Website [www.bryantx.gov](http://www.bryantx.gov) or via [www.usgs.gov](http://www.usgs.gov).

## FLOOD PROTECTION ASSISTANCE

Concerned citizens and the general public can obtain information on flood protection assistance from the City of Bryan's Engineering Services Division by calling (979) 209-5030. Flood protection assistance available from the City of Bryan is limited to providing available site-specific flood and flood related data, data on historical flooding in the neighborhood and similar information so inquirers can relate the flood threat to their problems.

### List of Services Provided:

1. Provide a list of names of contractors and consultants knowledgeable or experienced in retrofitting techniques and construction.
2. Provide materials or how to select a qualified contractor and what recourse citizens have if they are dissatisfied with the contractor's performance.
3. Make site visits to review flooding, drainage and sewer problems and provide one-on-one advice to property owners.
4. Provide advice and assistance on retrofitting techniques, such as, elevating buildings above flood levels or the Base Flood Elevation (BFE), dry floodproofing, wet floodproofing and protecting basements from sewer backup. Also, information on the installation of barriers, levees, and floodwalls around individual buildings or structures is available.