

## **FLOOD CONTROL LEVEES: PROTECTION WITH RISK**

**By Basil Housewright**

Fort Bend County has hundreds of miles of flood control levees consisting of earthen embankments, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding. The levees have been designed to protect urban residential areas, which are located in high-risk flood zones. Some of these areas are Greatwood, Pecan Grove, New Territory, Sienna Plantation, Colony Lakes, Riverpark and many more. The Brazos River and drainage leading to it are the primary source of potential flooding in these areas. The need to create these levees around these subdivisions is to allow residential development with affordable insurance available to the homeowners and business owners. However, no levee provides full protection from flooding.

All levees are designed to provide a *specific level of protection*, and can be overtopped in larger flood events. Levees require regular maintenance to retain their level of protection. The fact is, levees can and do decay over time, and maintenance can become a serious challenge. When levees do fail, or are overtopped, they fail catastrophically and the flood damage may be more significant than if the levee was not there. For these reasons, the thousands of Fort Bend County residents affected by levees need to understand the flood risks they face and take steps to address them by considering purchasing flood insurance.

The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program (NFIP), the cornerstone of the Nation's strategy for preparing communities for flood disasters. The NFIP was created to reduce flood damages by identifying flood risks, encouraging sound community floodplain management practices, and providing flood insurance.

FEMA is updating the Nation's flood hazard data and maps through an effort called Flood Map Modernization. Accurately identifying the flood risk behind levees is an important element of Flood Map Modernization. Levees are present in over one quarter of the counties being remapped.

Flood hazard maps, also known as Flood Insurance Rate Maps, or FIRM's show the high-risk areas where there is a 1% chance of flooding in any given year. They also indicate the low-to-moderate risk areas with a less than 1% annual chance of flooding. This does not mean it is not going to flood rather it means it is a lower probability.

Assessing flood risk for areas behind levees is complex. Among the many factors the assessment must take into account are the actual elevations that an 1% annual chance flood will reach and the ability of the levee to contain such floodwaters. FEMA has criteria for recognizing levees as protecting against the 1% annual chance of flooding. The levee owner is responsible for providing documentation to show that the levee meets these criteria. FEMA does not examine structures or systems to determine how they will perform in a flood event.

If a levee meets FEMA criteria, the flood hazard map will show the area behind the levee as a moderate risk zone. If the levee does not meet FEMA criteria, the flood hazard map will show the area as a high-risk area, or Special Flood Hazard Area (SFHA). The SFHA is the area subject to probability of the 1% annual chance of flooding and all residents located in this area would be subject to mandatory purchase of flood insurance if their property were financed. There is always the potential of a levee previously meeting FEMA criteria but with new criteria limits set by FEMA the levee is not longer in compliance. This would mean all residents located in this area would be subject to mandatory purchase of flood insurance if their property were financed. Spring is upon us and brings torrential downpours so it is best to know your particular situation. Talk to a local Insurance Agent for advice.

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