



## What is TSARP?

In the aftermath of Tropical Storm Allison, the Federal Emergency Management Agency (FEMA) and the Harris County Flood Control District (the District) began a multi-year initiative called the Tropical Storm Allison Recovery Project that will comprehensively assess the flood risks within Harris County.

FEMA and the District have worked closely together in the past to identify major flooding sources and associated flood risks within Harris County, but never on such a scale.

Both agencies are using innovative scientific techniques to determine the current flood risks posed by streams and bayous throughout the county's approximate 1,700 square mile area, including 22 watersheds and 35 communities. The information developed as a result of TSARP will be provided to the public, government officials and numerous other Harris County stakeholders so that they can make informed, scientifically based flood management decisions about the places where they work and reside.

## The Benefits of TSARP

### *Better Tools for Drainage and Flood Damage Reduction Planning:*

Each of Harris County's 35 communities is responsible for planning and regulating new land development projects within their municipal boundaries. TSARP will provide access to more accurate flood risk information, and will allow community planners and engineers to make decisions based on up-to-date technology and conditions. This is critically important as the population of Harris County continues to grow and new land development projects are considered, planned and constructed. In addition, the District will be able to use the TSARP products as new tools for planning and design of new flood damage reduction projects within Harris County.

### *Enhanced Knowledge of Flood Risks:*

Periods of heavy rain regularly occur in Harris County, an area prone historically to flooding. As a result it is very important that citizens possess the best possible knowledge of their flood risks for their homes and businesses. The District and FEMA believe that the citizens of Harris County want to and should know what these risks are so that they can plan accordingly.

### *Comprehensive Remapping of the County's Floodplains:*

Flood Insurance Rate Maps, commonly referred to as FIRMs or floodplain maps, show which areas of the county are at a higher risk of flooding than others.



## TROPICAL STORM ALLISON RECOVERY PROJECT

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During the late 70s and early 80s, the first comprehensive effort was undertaken to map the floodplains for major flooding sources in Harris County. Since that time, updates for particular areas have occurred to reflect changes in conditions resulting from such things as new land developments and the completion of flood damage reduction projects. These map updates were made with reference to the original data from the first comprehensive effort.

As a result of TSARP, not only will Harris County's floodplains be entirely remapped, but brand new and more accurate data and computer models will be created using important advances in science and technology.

### **The Science Behind TSARP**

TSARP is a massive undertaking involving extensive use of a sophisticated laser technology called Light Detection And Ranging, commonly referred to as LiDAR, to map the ground's topography.

Developed by NASA, this laser technology has already been successfully employed by FEMA on other important projects, including the recovery efforts at Ground Zero after the 9-11 attacks.

The use of LiDAR for TSARP involves directing millions of laser beams toward the ground from low-flying aircraft, and measuring the time it takes for that light to bounce off the earth and back to the recording equipment on the plane. The measurable differences in the laser's bounce time represent different heights, or the relief, of the land.

The information generated by this laser technology, along with many other parameters is used in computer models to estimate flood elevations. Flood elevations are then mapped on base topographic maps, also produced from the laser technology. This information then becomes the basis of the new floodplain maps.

### **The Impact of New Floodplain Maps**

FEMA's National Flood Insurance Program (NFIP) – of which every community in Harris County is a member – underwrites flood insurance for the entire nation. FEMA uses Flood Insurance Rate Maps (FIRMs or floodplain maps) to help determine flood risk zones and associated rates for flood insurance policies.

For many, the new floodplain maps will have little or no impact on their flood zone designation and associated policy rate, and for some, their status may actually improve. However, it is possible that the maps may create new boundaries that would cause flood insurance rates to rise in certain areas and/or require a homeowner to purchase flood insurance for the first time.

FEMA and the NFIP are mindful that such changes can be unwelcome. For that reason, the NFIP has the "Grandfather Rule" that may allow alternative rating rules to benefit a given structure. Contact an insurance agent for more information.

In addition, if the new maps reflect a change in flood zone status with which a home or property owner does not agree, they have the right to appeal the change to FEMA.

## **What to Do if the New Floodplain Maps Do Not Identify Increased Risk for Your Property**

Consider these facts: Tropical Storm Allison dropped up to 35 inches of rain in some parts of Harris County, with 28 of those inches falling in 12 hours. As a result, approximately two-thirds of the areas that flooded were outside the 1% (100-year) floodplain. That is a floodplain occurring from rainfall that has a 1% chance of being equaled or exceeded in any given year, as depicted on the FIRM (or floodplain) map. Additionally, approximately 64,000 property owners who did not carry flood insurance during Tropical Storm Allison experienced flooding.

Put simply, even if you have never flooded before or the new floodplain maps do not identify you as being at a high risk, it is strongly recommended that you purchase flood insurance.

### Where to Learn More

You are encouraged to visit one of the following web sites or contact us:

[www.tsarp.org](http://www.tsarp.org)

[www.fema.gov/nfip](http://www.fema.gov/nfip)