

LOOK UPSTREAM

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SEEKING SOLUTIONS TO TOUGH PROBLEMS

In 2008 the Cypress Creek Flood Control Coalition (CCFCC) completed the first phase of a very successful initiative to assure the soundness of the computer modeling of Cypress Creek that is relied on by Harris County, the National Flood Insurance Program (NFIP), land developers and the roadway design and construction industry in particular among many others. These models predict the creek behavior during rainfall conditions. Thus they provide the basis for actions by the County in regard to flood damage mitigation, including, for example, new land development permits and construction of flood mitigation infrastructure.

When FEMA issued new flood plain maps for Cypress Creek based on modeling done after Hurricane Allison, CCFCC undertook what became a comprehensive technical review of the revised models. This identified a number of predicted creek behaviors that had significant deviation from what actually occurred during historical flooding in specific areas in the western part of what is commonly called the "Upper Cypress Creek Watershed." When advised of these findings, the Harris County Flood Control District acknowledged the need for further review. This kicked off a lengthy, collaborative study with CCFCC, wherein HCFCFCD undertook intensive engineering evaluations. The result was that HCFCFCD created, and Commissioners Court adopted a revised model that now

satisfactorily predicts creek behavior and calculation of flood locations, depths and flow thereby outdating the information used for the current flood maps adopted and published by FEMA in June 2008. (Note: An ongoing evaluation of these locally adopted changes is being carried out by FEMA after which it will be made public ally available for review / comment and subsequently used as the basis for NFIP flood insurance purposes.)

This remodeling phase provides the basis for reactivation of research / study that CCFCC had requested, and HCFCFCD undertook several years ago, to model what Cypress Creek behavior would be simulating the watershed as it will likely be under full urban development conditions (called the "Future Conditions Study"). This research had been put on hold understandably when the weaknesses in the model at that time were recognized. With the new model in hand, HCFCFCD with CCFCC continuing participation, has just reactivated that research.

There is a regulatory philosophy, for watersheds, that is referred to as "No Adverse Impact." CCFCC and Harris County endorse this philosophy. However, the execution of it unavoidably involves many uncertainties that strain the limits of conventional technology.

An initiative at Rice University, under Dr. Phil Bedient, was undertaken to develop the technology and application methods needed to remove many of these uncertainties. CCFCC sponsored an effort by Dr. Bedient and his students, to apply his new concepts to Cypress Creek, in order to establish with finer accuracy than ever before, what it takes in the way of flood mitigation facilities in order for new developments in Cypress Creek Watershed to truly have "no adverse impact" on the hundreds of neighborhoods located downstream between the US Highway 290 bridge crossing and where the creek waters join with Spring Creek flowing into the San Jacinto River.

Note: Funding the cost of CCFCC research carried out by professional engineering and academic experts depends almost entirely on voluntary donations from the watershed's municipal utility districts and home owner associations. All contributions are tax deductible.

Look Upstream articles are provided by the Cypress Creek Flood Control Coalition non-profit, community grass-roots organization as a public service. Visit www.ccfcc.org for more information on needed flood protection, environmental preservation, flood insurance and membership or send an e-mail to floodalliance@ccfcc.org.

