

**Buffalo Bayou & Lower White Oak Bayou  
Federal Flood Damage Reduction and Ecosystem Restoration Study  
INITIAL STAKEHOLDER GROUP MEETING**

April 13, 2006

**Introductions and Welcome**

Wayne Crull, study manager, welcomed the members of the Buffalo Bayou & Lower White Oak Bayou Federal Flood Damage Reduction and Ecosystem Restoration Study Initial Stakeholder Group meeting. Chris McCall, of the University of Houston-Downtown, was introduced as a new member.

**Information Topic – Hydrology and Hydraulics**

Patty Matthews, Associate Vice President at Turner Collie & Braden, presented the information topic “Flood Damage Reduction: Hydrology & Hydraulics.”

In 1930s, construction on the Addicks and Barker reservoirs took place to alleviate flooding in downtown Houston. Since 1937, there have been 30 damaging storms, ten major storm events since 1950. During Tropical Storm Allison, approximately 4,000 structures were flooded. As a result, FEMA and HCFCD undertook the TSARP to study and map the 100- and 500-year flood plain. Areas along Buffalo Bayou in the mapped FEMA floodplain are noted on slide 4. Structures experiencing multiple flooding were noted on slide 5.

For the hydrology study, how flooding occurs today is identified utilizing the TSARP model. It is adjusted to be responsive to various flood frequencies. “Hydrology” means how water gets to the channel. How it drains, the land uses (commercial and industrial), impervious surfaces, etc. are looked at to update the model.

Both hydrology and hydraulics are used to predict flow and elevation of water in the channel. It is checked by comparing past storm events. For this study, the study team is comparing storm events in 1992 and 1998. The number of cross sections for this study are in the 100s.

⇒ Q: How were these two storms selected? These storms occurred in the less than 25 year range that typically complements a study finding federal interest. Additionally, these are significant historical storm events which flooded homes in Harris County. Due to this importance additional data is collected which aids in the calibration of model efforts.

Some of the methods of flood damage reduction measures include:

- channel improvements to deepen and/or widen;
- detention basins, both offline and inline
- Levees
- Buy outs
- Raising structures (this method reduces flood damages but not significantly)

Reconnecting oxbows may also be evaluated.

HCFCFCD is following the Corps procedures for this study. Currently, this study is in the “without project” phase whereby 1) problems and opportunities are identified and 2) an inventory and forecast of conditions takes place.

The study team anticipates completing the H&H model in Fall 2006 and the H&H report in Spring 2007.

⇒ Q: What is the “future” projection based on? It is called “the life of the project,” however in actuality it is a period of analysis over 50 years.

Dr. Steven Craig at the University of Houston is working on a numerical model evaluating current population and employment as well as predicting future population and employment. This information is used to estimate future land use.

⇒ Q: Is the current mitigation/storage from I-10 accounted for in this study? In the current models developed in the TSARP the storage referred to in the depressed sections of I-10 are actually blocked out. HCFCFCD is aware of TXDOT’s efforts on this issue which include determining mitigation for resolving the flooding of these depressed sections.

⇒ Q: Are any of the diversions in the Buffalo Bayou master plan being studied? HCFCFCD will be looking at bypass or diversion as possible components.

### **Study Status**

Wayne Crull gave the group an overall progress report on the study.

There were minor changes to the Schedule of Deliverables. The changes were related to delays so that the team could meet with the resource agencies. None of the changes affected the major milestones for the Study.

- Economics is 40% complete
- Engineering is 45% complete
- Environmental is 20% complete

Crull provided a Study Status document dated April 13, 2006 for study members to include in their notes. The text is reflected below.

### Engineering

The engineering investigations in this phase of the study are approximately 45 percent complete. The engineering investigations include the hydrological and hydraulics (H&H) studies previously discussed the initial collection of design criteria for flood control and ecosystem restoration components, and the compilation of data on existing structures and other non-structural items which would potentially be impacted by such components.

Since January, the Independent Technical Review (ITR) team has reviewed the first draft of the H&H models that were developed from the TSARP models. No significant issues arose from that review and calibration efforts for the hydraulic and hydrologic models have started. In the next three months the calibration efforts for the H&H models is expected to be 90% complete and will be under review by the ITR team.

### Economics

The economics investigations in this phase of the study are approximately 40 percent complete. The economics investigations establish baseline economic information to use throughout all study phases, to evaluate the base year and future without-project economic damages from flooding. Currently, the study team is evaluating floodplain characteristics – structure inventory, structure elevations, and value of floodplain property.

Since January, data collection efforts have been proceeding. In the last month, survey crews have started the precision survey efforts to obtain finished floor elevations on 300 properties. In the next three months a survey is scheduled to start in the downtown Houston and River Oaks areas to develop information about flood damages for these unique structures.

### Environmental

The environmental investigations in this phase of the study are approximately 20 percent complete. These investigations will document the past, present, and future environmental, social, and economic conditions in the study area. Secondary source data has been collected, including historical mapping, studies and other records. Field visits are ongoing.

Data collection efforts for physical, biological, and socioeconomic resources are ongoing. An initial list of references and available data sets has been generated by the study team and is under review by HCFCD. In the next three months data collection efforts are expected to be complete and work on the without project environmental documentation will be partially complete.

⇒ Q: In the lower White Oak neighborhoods, south of Studewood, there is public right-of-way that may be a place and opportunity for aggressive economic restoration or stream restoration. Will this be considered for flood damage reduction or ecosystem restoration?

As a flood damage reduction option, it does not appear to have a high value when considered in the cost-benefit analysis. As an ecosystem restoration, the answer today is that we don't know. The Corps does consider wetlands an important resource and nationally has a goal of restoring about three million acres. Certain aspects of a restoration project are graded and scored when being considered for federal funding. Restoration of areas with national significance are rated higher, so funding is competitive. Additionally, there are more federal funds available for flood damage reduction than for ecosystem restoration.

### **Communications**

Later this year, HCFCDD will be expanding the study members to include watershed-wide stakeholders and other audiences. In advance of that meeting, Elmore PR will be working with the study team to develop the study's Long Range Public Engagement Plan. A public engagement plan is a requirement for consideration for federal funding.

Over the next few months, we will be working to identify

- Additional target audiences
- Potential concerns/issues in the area
- Strategies to reach the audiences in the study area

Susan Elmore or Claudia Morlan will be contacting study members to gain input on the public engagement plan.

⇒ Q: Is there a mechanism to reach out to residents who have flooded? Perhaps FEMA database? HCFCDD does work with FEMA. The study team will include FEMA as an option to approach to reach this audience.

Kevin Shanley suggested a representative from the downtown community – perhaps the Downtown Management District – should be included. Terry Hershey suggested that City Council should be represented.

### **Next Meeting**

The next proposed group meeting date is Tuesday, July 11, 2006 at 2 p.m. at HCFCDD.