Buffalo Bayou & Lower White Oak Bayou
Federal Flood Damage Reduction and Ecosystem Restoration Study
INITIAL STAKEHOLDER GROUP MEETING SUMMARY
July 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 (ISG) meeting.

Information Topic – Economic Analysis in a Federal Study

Wayne Crull, presented the information topic "Flood Damage Reduction within the Corps of Engineers – An Economic Analysis in a Federal Study."

The guidance for the Corps process is taken from the U.S. Water Resources Council, Economic and Environmental Principles and Guidelines for Water and Related Land Resources, which gives the authority for the Federal Government to invest in civic works projects; sets the objective of Federal involvement; and establishes the process by which decisions are made.

The federal objective of water and related land resources project planning, is to "contribute to National Economic Development (NED)…" Contributions to NED are the *direct net benefits* that accrue in the planning area and include increases in the net value of those goods and services.

For federal resource planning purposes, the goal is to maximize the *net economic benefits*. (Net economic benefits are the sum of the economic benefits minus the economic costs.) There are a number of economic benefit categories for flood damage reduction. While the District considers many of these categories, they focus on the following because they have proven to be significant.

- damages reduced to structures and contents, not land
- damages reduced to public infrastructure such as roads and utilities
- damages reduced to vehicles

Damages reduced can be achieved by changes in the water surface profile (i.e. a structural solution like channel modifications, levees or detention basins) or with changes to the property risk (i.e. a nonstructural solution like home buyouts, property elevations, emergency warning systems, etc.)

NED costs are opportunity costs, or the value of that which is foregone when a choice is made.

The basis for damage reduction benefits is the comparison of the *Without Project Condition* (existing condition) against the *With Project Condition* (project in place) over a period of time (i.e. 50 years).

There are approximately six steps in the planning process to "solve" problems:

- Identify water resources problems in the study area.
  This is an important step in the planning process. Make a clear problem statement of what is wrong. Identify opportunities, constraints, goals, and objectives.

- Collect data on the problems identified. (The Study is in this phase now.)
  Establish the planning boundary, the "most likely" future condition, and set the baseline.

  Economic data requirements include
  - Structure inventory – type, value, location, ground elevation, and first floor correction/threshold of floods
  - Depth-damage relationship – percent damage to structure and contents based on value of structure by increment of flood stage/elevation
  - H&H water surface profiles – changes in dollar damages are based on depth of flooding and an inventory of damageable property within the flood impact area

- Develop alternatives to solve problem. Must meet objectives and avoid constraints. May be composed of measures/components, structural or nonstructural activities, and policies.

- Evaluate the effects of the alternative plans. Forecast "with project" condition and compare "with-" and "without-" conditions. Assess important differences.

- Compare alternatives. Must be complete (all data considered), efficient (economical), effective (does the job) and acceptable (feasible socially and politically).

- Select a plan for recommendation. May recommend an alternative plan as long as the ASA (CW) [Assistant Secretary of the Army, Civil Works] agrees to the economic and environmental compared to the NED.

Study Status

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

- Economics is 60% complete
- Engineering is 55% complete
- Environmental is 40% complete

A Study Status document dated July 13, 2006 for study members to include in their notes. The text is reflected below.

<u>Engineering</u>

The engineering investigations in this phase of the study are approximately 60 percent complete. The engineering investigations include the hydrological and hydraulics (H&H) studies, 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 April, the work to calibrate H&H models for Buffalo Bayou using historical storm data has been completed. This second version of the models was submitted for review by the Independent Technical Review (ITR) team. In the next three months the Lower White Oak Bayou model will be added to the Buffalo Bayou model and water surface elevations for various flood frequencies will be developed for determining economic damages in the study area from flooding.

Economics

The economics investigations in this phase of study are approximately 55 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 – for approximately 14,000 properties potentially at risk from a 500-year event.

Since April, additional data collection efforts have been conducted and precision surveys of finished floor elevations on approximately 300 properties have been completed. Real estate appraisals have been performed for a sample of properties and compared to Harris County Appraisal District values. In the next three months we will compare survey elevations to elevation estimates for the structures, additional real estate appraisals will be performed and finished first floor elevation surveys will be obtained for an additional 100 structures.

Currently we are having discussions with the Corps of Engineers regarding our proposed method of assessing or surveying the downtown Houston and River Oaks area. Corps staff have questioned the methodology we originally proposed at the start of the data collection process and these discussions may potentially delay completion of our economics model.

Environmental

The environmental investigations in this phase of study are approximately 40 percent complete. The environmental investigations during this phase of the study document the past, present, and future environmental, social and economic without project conditions in the study area. Data collection efforts are mostly complete and written documentation is being prepared. Field visits were conducted by biologists, engineers, and other environmental scientists along the bayous. An assessment of potential significant resources for ecosystem restoration opportunities is being developed. In the next three months we anticipate developing concurrence with resource agencies on the description of the watershed and its significant resources. During this time frame the draft without project documentation will be prepared.

Open Discussion

Q⇒ Does this information all apply to the measure of flood damage?

For example, if there is a pocket of downtown properties in the Buffalo Bayou flood plain and the estimated economics is +$1 million, an explanation for those "damages" needs to be charted. We need to also take into account whether the buildings downtown have been reinforced for flood damages (or have flood doors).

Q⇒ Why would you not talk with individual owners?
OMB (Office of Management and Budget) must approve the form and all questions. The District prepared a form with questions copied from other projects however the form was refused. This perhaps indicates a shift in thinking at the Corps and OMB regarding the value of data collected in this fashion.

Q⇒ In the field survey, you mentioned the western edge of Buffalo Bayou. Did the survey include all areas?
The site visit encompassed the main stem of Buffalo Bayou from Barker Reservoir downstream to the Turning Basin. They accessed the areas through boat and/or trails. The team viewed areas that have less disturbed or more natural characteristics.

Communications

Susan Elmore briefed the group on the status of the Long Range Public Engagement Plan. The Plan is approximately 80% complete and is under review now by the District.

The Plan includes a situation analysis; documentation of concerns and opportunities expressed by the ISG; detailed target audiences in the study area; and the recommended communications objectives, strategies, tactics and evaluation to be implemented over the course of the study.

The study has three phases and the Plan was tailored accordingly. Phases include data collection (the phase we are in now), alternatives analysis and study recommendations. The Plan was also tailored to audience – ISG, broader stakeholder group, key audiences, and general public – with the goal of growing the audience that is aware, informed and educated about the study over a period of time.

The primary audience has been and will always include the ISG members, who have a good level of understanding of the data, conditions and the variables involved. It was important to keep the ISG members engaged during the phase where the information is rich but decisions and public input are not immediately critical. Additional invitees will be invited to join the ISG members and may include Central Houston or a downtown Houston representative (suggested at the meeting in April).

It will be important to engage a wider circle of audiences as data collection is completed and there is a need to engage a wider public for input. The District wishes to capture input on the alternatives to be analyzed and/or considered and incorporate that, as appropriate, in the study recommendations phase.

The next steps are to finalize the Plan with the District and share it at a later date with the ISG.

Aside from the Long Range Public Engagement Plan, a brief “article” describing the study and the ISG participation was prepared and offered to the group. The document will be emailed to the group.

Q=> Will information about the study be posted on the District web site?
Elmore PR has made this recommendation as part of the Plan. The District will take this under consideration.

Next Meeting

The next proposed group meeting date is Thursday, October 12, 2006 at 2 p.m. at HCFCD.