

MEMORIAL PARK DEMONSTRATION PROJECT

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Introduction

The Memorial Park Demonstration Project (MPDP) is a proposed stream restoration project on Buffalo Bayou. Its purpose is to restore Buffalo Bayou to a natural, stable condition by utilizing fluvial geomorphology design principles to preserve the bayou’s flood conveyance capacity, repair severe erosion on the banks of the bayou, stabilize the bayou’s banks, reduce sediment deposition, and improve water quality within the bayou.

Project Location

MPDP includes a stretch of Buffalo Bayou that flows adjacent to Memorial Park and the River Oaks Country Club, west of Shepherd Drive and east of West Loop 610. The proposed project reach spans the section of bayou from the Hogg Bird Sanctuary/Bayou Bend Parking Lot to approximately 5,800 feet upstream, stopping just south of Memorial Park’s Picnic Loop.



Current Condition of Buffalo Bayou

This reach of Buffalo Bayou has remained natural throughout the years. However, the Buffalo Bayou watershed has been urbanized, creating a stressed natural stream in an urban environment. The bayou has experienced severe erosion caused by changes in stormwater runoff rates due to urbanization and the release of high stormwater flows for extended periods of time from the United States Army Corps of Engineers-controlled Addicks and Barker reservoirs in west Harris County. Erosion in the project area has caused bank failures, loss of public and private land, and a reduction in ecological functions, such as water quality and habitat.

Project History

In response to urbanization within the Buffalo Bayou watershed, Buffalo Bayou has naturally eroded and widened over time. Concerned about the bayou's worsening condition, the Bayou Preservation Association (BPA) sponsored a workshop in November 2010 that allowed experts in the fields of fluvial geomorphology and natural channel design to float Buffalo Bayou in order to evaluate and identify potential locations for a project that would demonstrate the effectiveness of natural stable channel design techniques. These techniques are based on the principles of fluvial geomorphology, which is the study of a stream's character (dimension, pattern and profile) in response to the effects of its sediment supply and water flow from the watershed. The BPA workshop resulted in the identification of the proposed project location along a stretch of Buffalo Bayou, bordered by Memorial Park and the River Oaks Country Club.

Because the Harris County Flood Control District has general jurisdiction over Harris County's bayous and creeks as granted by the State, the BPA and the City of Houston's Public Works and Engineering Department asked the Flood Control District to partner in the project that has become known as the MPDP. While the Flood Control District did not initiate MPDP, it has become the lead for the project's design and implementation.

Natural Channel Design Techniques

The utilization of natural channel design will serve Buffalo Bayou well, as it would create a self-sustaining bayou that would slow the erosion process. The proposed project design includes natural channel design techniques, such as the implementation of toe wood, bioengineered slope restoration, pool and riffle systems, and bankfull benches. The project area would be replanted with native vegetation to restore native habitat and help further minimize erosion along the bayou.

Project Cost

The proposed project is estimated to cost \$6 million. The project's funding partners – the City of Houston, River Oaks Country Club and Harris County Flood Control District – will share in the cost of the project.

Project Timeline

A step-wise approach is being used in the development of the proposed Memorial Park Demonstration Project. At each step in the process, information is refined and consensus measured to determine if there is enough support to move to the next step in the process. For example, the initial steps in the process involved determining if there was general interest that Buffalo Bayou's erosion problem warranted a demonstration project. Further review and support led to the concept of a demonstration project. The next step was to determine where that project might take place and what it might be, and so forth. Public input is being pursued as well. The proposed project also requires a Corps of Engineers individual permit, as well as a public hearing under Texas Parks and Wildlife Code, Chapter 26 to determine if protected park land (Memorial Park) can be used for other purposes. Both of these processes include the opportunity for public input. If these steps are successful, the final design could be completed by fall 2014, and construction could begin by the end of 2014. The project would take approximately 12 months to construct.