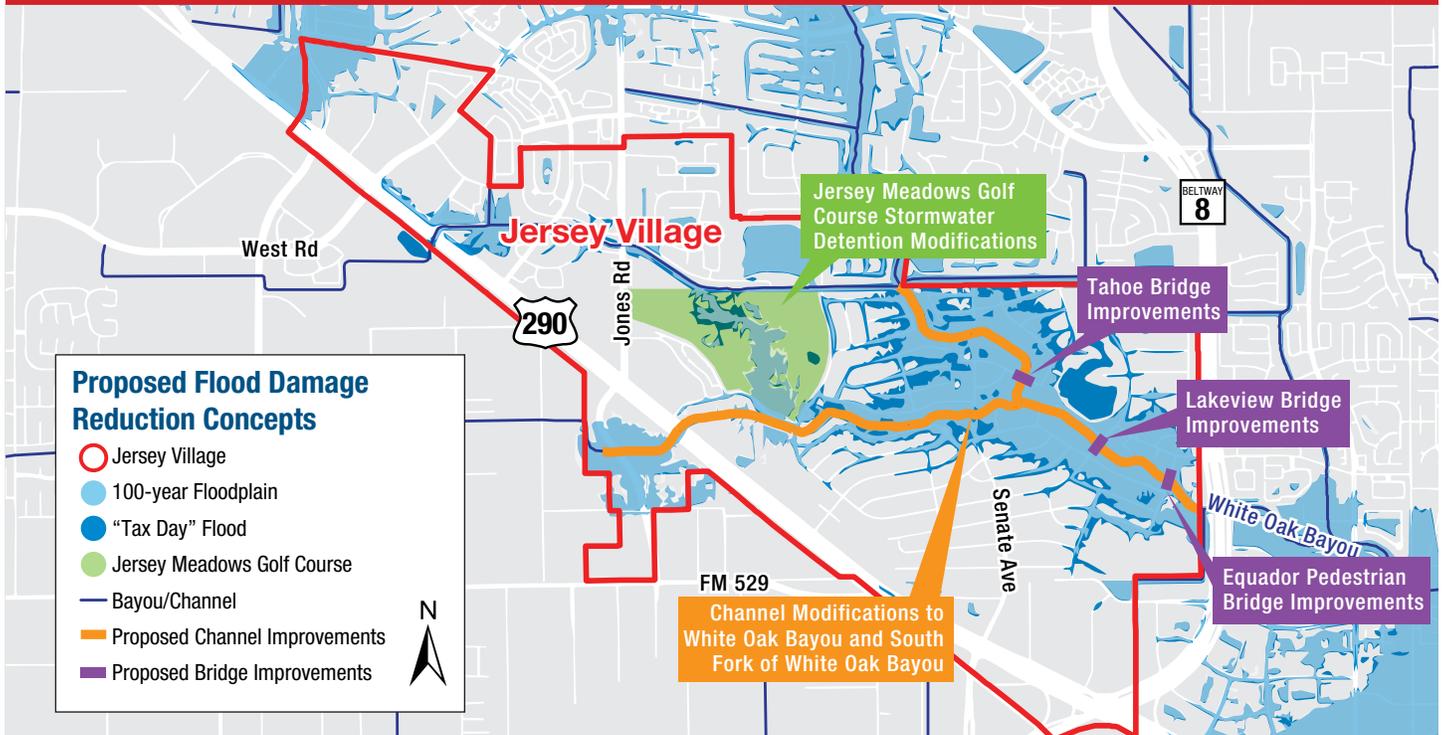




The City of Jersey Village Long-term Flood Recovery Plan

Phase 2 Public Meeting – March 23, 2017



Planning Study Background

The City of Jersey Village has been repetitively impacted by chronic flooding along White Oak Bayou and its local tributaries. The City is located in the upper portion of the White Oak Bayou watershed, and the bayou flows from the headwaters near U.S. Highway 290 west of Huffmeister Road southeast to its confluence with Buffalo Bayou in downtown Houston.

Major flooding occurred along White Oak Bayou in the City of Jersey Village in 1998, 2001, 2002, and 2016. The most recent flooding occurred after implementation of extensive flood damage reduction efforts by the City and the Harris County Flood Control District to improve stormwater drainage infrastructure in and around Jersey Village.

In the last 20 years, the Flood Control District has implemented more than \$95 million worth of improvements to address channel flooding in the White Oak Bayou watershed, including completion of the Jersey Village diversion channel in 2010, as well as completion of multiple stormwater detention basins upstream of Jersey Village. In the last decade, the City completed over \$25 million of street and drainage reconstruction efforts, with the primary goal of reducing localized neighborhood flooding.

Despite these significant efforts on behalf of the City and the Flood Control District, more than 230 structures within Jersey Village experienced flooding during the most recent "Tax Day" flooding event on April 18, 2016. The City responded to this severe flooding event by initiating the Jersey Village Long-term Flood Recovery Planning Study.

Did you know?

The White Oak Bayou watershed is comprised of more than 111 square miles, with 146 miles of open stream.



The Long-term Flood Recovery Plan Process



About the Flood Recovery Planning Study

The Jersey Village Long-term Flood Recovery Plan is an accelerated flood damage reduction study led by Dannenbaum Engineering Corporation with Crouch Environmental Services, Inc. and Kuo and Associates to address repetitive flooding in the City and the surrounding area. In September 2016, the City contracted Dannenbaum Engineering Corporation to rapidly deliver the Jersey Village Long-term Flood Recovery Plan by Summer 2017.

The goal of the Jersey Village Long-term Flood Recovery Planning Study is to develop a flood damage reduction plan that balances social acceptability with economic, hydraulic, and environmental feasibility. The plan will identify both short-term and long-term flood damage reduction projects that can be designed and implemented as funding allows.

The planning process will be delivered in three phases, and the community will be invited to attend a public meeting during each study phase:

- **Phase 1:** Data Collection and Preliminary Assessment
- **Phase 2:** Technical Analysis and Development of Alternatives
- **Phase 3:** Preferred Alternative Selection and Finalization

Phase 1: Data Collection and Preliminary Assessment

Phase 1 of the study was initiated in fall 2016. During this time, the Study Team conducted a topographic survey of homes, hosted a public scoping meeting in October of 2016, collected data from public agencies, and mailed surveys to about 2,400 properties in Jersey Village requesting input on flooding observed by local residents. Comments submitted to the Study Team provided personal accounts of flooding, alerts regarding local street flooding, concerns about local drainage infrastructure, as well as potential solutions to flooding experienced along the bayou and its tributaries. Sentiments from submitted comments expressed the dire need for alleviation from flooding in the City of Jersey Village area.

Phase 2: Technical Analysis and Development of Alternatives

Now, as the Study Team concludes the major technical study that defines Phase 2, the public's continued participation is encouraged.

Work accomplished during Phase 2 includes a Rapid Assessment structural inventory of buildings in the floodplain. One of the main goals of the rapid assessment was to evaluate how many structures are currently deep in the floodplain and how many of those structures will continue to be deep in the floodplain following completion of all of the projects listed in the federal flood damage reduction study, known as the General Re-evaluation Report (GRR) for White Oak Bayou.

Another goal of the assessment was to screen structures for possible *future* flood damage reduction measures. This analysis relied on the most recent data available, such as home appraisal values and finished floor elevations. Results from these assessments indicated that – even after the implementation of possible flood damage reduction measures in the General Re-evaluation Report – structures remain in the floodplain and would be affected by 25-year, 50-year, 100-year, and 500-year storms.

The Study Team also accomplished a Drainage Impact Study for the Jersey Village Transit-Oriented Development, a 300-acre proposed development south of US 290. This study identified a drainage plan to ensure that sufficient stormwater drainage infrastructure is implemented and there will be no flooding impacts as a result of the proposed Transit-Oriented Development. The Development will not result in an increase in flows downstream of U.S. Highway 290.

Phase 2 also included extensive hydrologic and hydraulic modeling and development of a system of preliminary flood damage reduction concepts for public consideration.

About the “Tax Day” Floods

Given the severity of flooding experienced during the 2016 “Tax Day” flood event, the Study Team was tasked with identifying the sources of flooding in Jersey Village. Actual data from the “Tax Day” flood event were used to inform this analysis, including Harris County Flood Control District rain gauge data.

Several different types of hydrologic and hydraulic models were run, and the results yielded the following:

- Of the 238 structures that experienced flooding during the “Tax Day” flood event, it was identified that at least 210 of these structures were flooded due to bayou flooding. The remaining structures flooded as a result of local street flooding.
- When the flooding associated with the “Tax Day” flood event was compared directly to the flooding associated with a theoretical 100-year event, it was identified that the “Tax Day” event was an extremely atypical rainfall event. The dramatic flooding associated with the “Tax Day” event was equivalent to a 240-year rainfall event, approximately. This is important to note because flood damage reduction measures implemented by the federal government and the Flood Control District are designed to provide a 100-year level of protection.
- Modeling was completed to determine the effectiveness of stormwater drainage infrastructure improvements since 2008. These improvements include the Fallbrook Stormwater Detention Basin, Ranchstone Stormwater Detention Basin, Jersey Village Bypass Channel, Elwood Weir, and Jersey Meadows Detention Basin. When the flows from the “Tax Day” flood event were simulated in a hydraulic model from which all stormwater drainage infrastructure improvements since 2008 were removed, it was determined that at least 363 structures would have experienced bayou flooding during the “Tax Day” flood event compared to the 210 structures that did flood due to bayou flooding. This modeling established that the stormwater drainage infrastructure improvements completed since 2008 had significantly increased the level of protection in Jersey Village.
- Following model calibration and analysis of the “Tax Day” flood event, it was identified that more than 100 structures in Jersey Village are within the 100-year floodplain, susceptible to repetitive flooding.



Flood Damage Reduction Measures under Consideration

To address the findings yielded in Phase 2, the Study Team is considering several proposed flood damage reduction measures, including both nonstructural and structural methods.

“Nonstructural” tools are measures that reduce the risk of damages caused by flood events by removing buildings from the floodplain or floodway. These types of measures include voluntary buyouts, raising buildings, flood proofing, floodplain management and regulation, and flood alerts. While these types of measures will be considered on a case-by-case basis by the Jersey Village Long-term Flood Recovery Plan Team, they will not be the primary methods recommended.

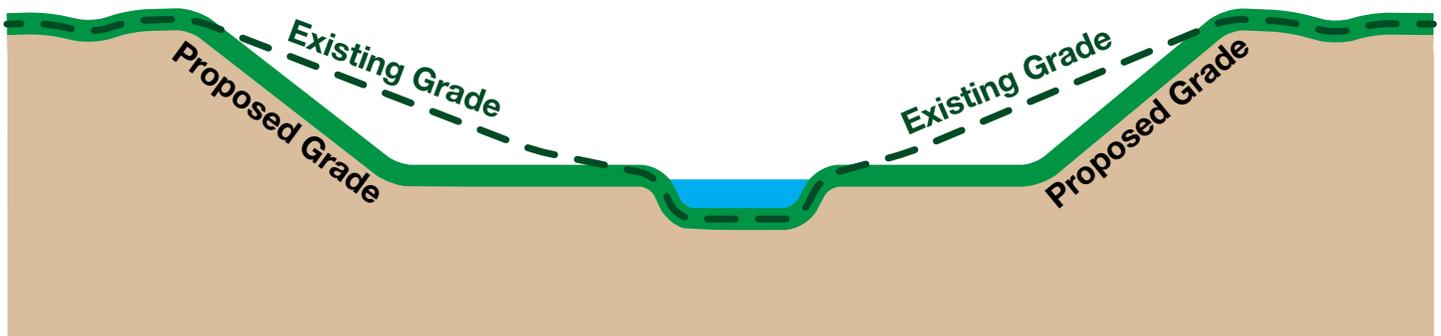
“Structural” flood damage reduction measures, on the other hand, are those that would result in an actual lowering of water surface elevations during an extreme storm event. Examples of these types of tools include conveyance improvements, detention basins, bypass channels, bridge or culvert widening, levees or floodwalls, and new outlets.

The following structural flood damage reduction concepts are proposed to address flooding issues identified through public outreach and hydraulic modeling.

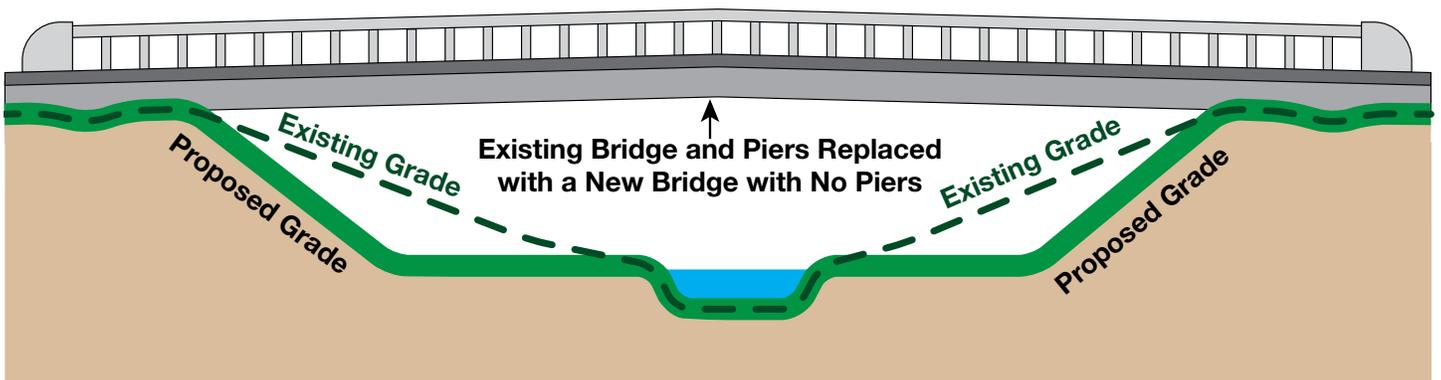
- **Bridge improvements** at Tahoe Bridge, Lakeview Bridge, and the Equador Pedestrian Bridge
- **Channel improvements** along White Oak Bayou Main Channel and the South Fork of White Oak Bayou (Tributary E127-00-00) within the city limits.
- **Additional stormwater detention facilities**, including modification of the Jersey Meadows Golf Course
- **Local street drainage assessments**, notably Wall Street and Capri Drive

Each of these flood damage reduction measures has been modeled and analyzed individually to assess functionality and identify their effects on flooding.

Proposed Channel Improvements



Proposed Bridge Improvements



What's Next?

In Phase 3, the flood damage reduction measures identified in Phase 2 will be combined into various flood damage reduction systems, and their collective performance will be analyzed together. This analysis will provide the benefits to be achieved through implementation of proposed flood damage reduction measures, and – ultimately – identify a feasible plan that will be most advantageous for the City of Jersey Village. The public will be invited to review and consider the results of this analysis at a public meeting this summer.

We look forward to hearing your feedback about the work accomplished so far. By letting us know what *you think* about the study and the flood damage reduction measures being considered, the Study Team will be better equipped to refine these concepts to meet your needs.

Following incorporation of public comments and finalization of the proposed flood damage reduction measures, the Study Team will present a hydraulically, economically, environmentally, and socially feasible Long-term Flood Recovery Plan for consideration by the City of Jersey Village. The recommended plan will include an achievable funding and project implementation strategy, which will allow the City to expedite delivery of flood damage reduction projects for its citizens.

We Need Your Feedback!

Comments will be accepted at the public meeting and throughout the duration of the study. All comments should be submitted or postmarked by **April 21, 2017**, to be considered in Phase 3 of the study. Those who are unable to attend the public meeting may submit written comments via mail or email. You may submit comments to:

Long-term Flood Recovery Plan
402 Teetshorn Street
Houston, Texas 77009

or JVfloodRecovery@crouchenvironmental.com

For more information about this study, please visit
www.jvfloodrecovery.com.