# Cottage Grove East Drainage and Paving Improvements


## Background

The Cottage Grove East project area is a high-density urban development partially situated in the Federal Emergency Management Agency regulatory floodplain along White Oak Bayou. Records within the project area show construction of homes dating back as early as the 1940s with development of several new townhome communities within the past few decades.

## Challenge

CivilTech, a Woolpert Company, received a contract from the city of Houston to perform professional engineering services for the Cottage Grove East drainage and paving improvements project. Because the area serves hundreds of commuters, residents, and visitors daily, the need to minimize disruptions to public areas was crucial during design and construction.

## Solution

CivilTech performed hydrologic and hydraulic analysis to determine the hydraulic efficiency of the existing storm drainage system. The project team also studied potential drainage improvements to identify those that could be implemented without inducing localized flooding or adversely impacting White Oak Bayou.

CivilTech's approach incorporated cost-effective drainage and paving solutions that leveraged construction phasing to minimize traffic disruption and maximize work during non-peak hours. The team developed the following recommendations for addressing the site's drainage deficiencies:

- Replace approximately 9,433 linear feet of 24-inch RCP with 10-foot by 8-foot RCB storm sewers
- Replace approximately 1,841 linear feet of 8-inch water line
- Construct approximately 16,730 linear feet of 8- to 27-inch sanitary sewer
- Install approximately 17,680 linear feet of 6-inch, 26-foot-wide concrete pavement

Additionally, CivilTech's team provided bidding, contracting and construction administration services.

**CLIENT**
City of Houston

**LOCATION**
Houston, TX

**CHALLENGE**

- Growth of urban development
- Overwhelmed storm drainage system
- FEMA floodplain location

**SOLUTION**

- Evaluate existing stormwater drainage system
- Develop recommendations for system improvements

**SERVICES**

- Hydrologic and hydraulic analysis
- Civil engineering
- Construction services