



JERSEY MEADOWS DETENTION BASIN

PROJECT OVERVIEW

Local Permitting Entities:

- Harris County Flood Control District
- Harris County
- City of Jersey Village

Project Type: Public Infrastructure

Sustainability Stars:

- ★ Investigation
- ★ Investment
- ★ Integration

Project Cost: \$7 million

Site Size: 43 acres

Detention Volume: 400 acre-feet

Project Owner:

Harris County Flood Control District

Civil Engineer:

R. G. Miller Engineers, Inc.

Contractors:

- Serco Construction Group, Ltd.
- Apache Ecological Services, Inc.
- Landscape Professionals of Texas

Sustainability Features:

- Watershed Environmental Baseline (WEB) Used for Planning
- Evaluated Water Quality Improvement Options
- Utilized Permanent Pool (Wet Bottom) Detention Design
- Integrated Stormwater Quality Treatment
- Mitigated Unavoidable Impacts with Onsite Replacement of Habitat and Aquatic Resources
- Planted Trees
- Constructed Trails (City of Jersey Village)

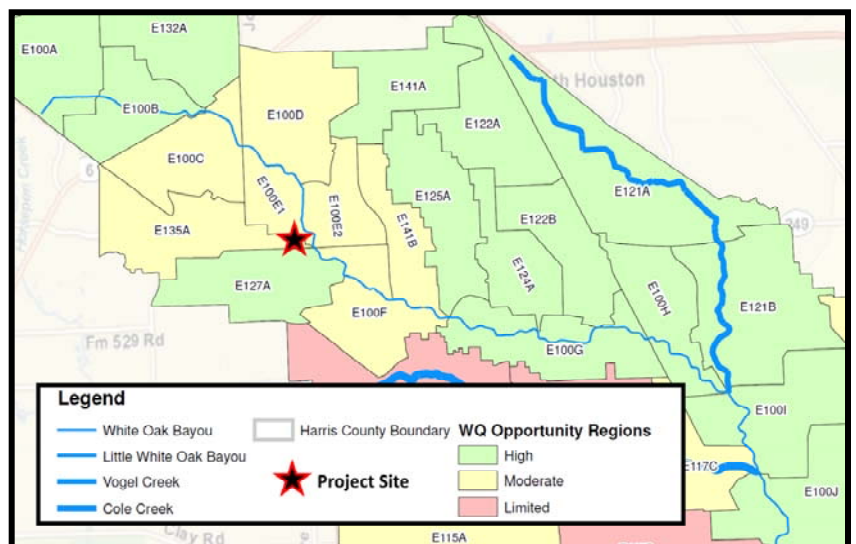
Flood Damage Reduction Benefits:

- 4,000 structures will have reduced or eliminated damages from 1% annual chance, 24-hour event
- Base flood elevation reduced by up to 0.35 feet

INVESTIGATION

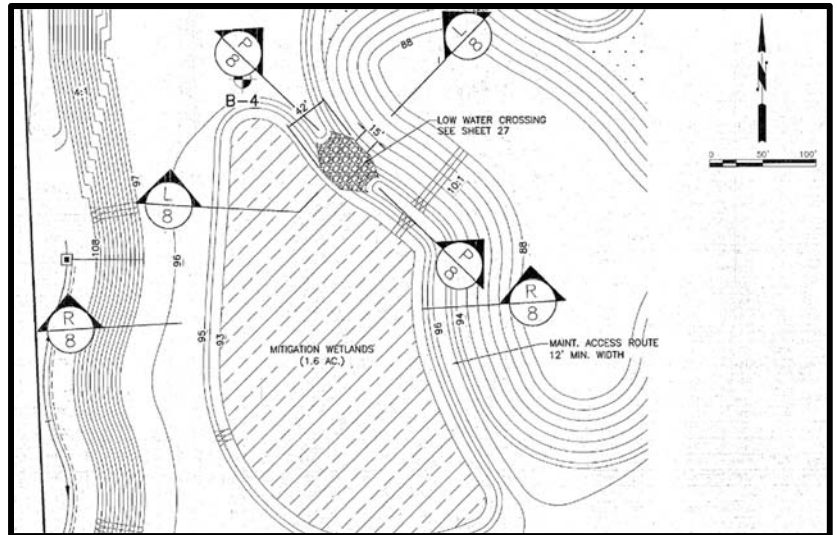
Project team used Harris County Flood Control District (District) design guidance and tools to evaluate potential environmental impacts in the project area and to identify water quality enhancement alternatives. Team used the District's Watershed Environmental Baseline (WEB) Data Summary Tool (DST), a GIS-based tool that reviews multiple environmental resource databases, such as the National Wetland Inventory, cultural resource surveys, hazardous materials, to identify potential impacts and to identify water quality enhancement design alternatives based on the project's location within District-defined water quality opportunity regions.

Project team determined the project was located in a "Moderate" opportunity region (yellow area in the figure below). After an evaluation of alternatives a wet bottom detention basin with water quality treatment wetlands was selected as the preferred water quality enhancement design alternative.



INVESTMENT

The project team designed the wet bottom basin with stormwater quality treatment wetlands to filter and absorb stormwater pollutants. Mitigation wetlands (separate from the treatment wetlands) were designed to replace existing non-jurisdictional wetlands impacted by construction. A tree planting plan was developed as both a park amenity for the City of Jersey Village and to promote areas of reforestation. These facilities reduce the frequency of cyclic maintenance, like mowing, providing habitat and aquatic resource values to the watershed and community, and promoting additional evapotranspiration and infiltration of stormwater runoff compared to a traditionally designed dry bottom detention basin planted with just turf-grass.



INTEGRATION

Construction of the Jersey Meadows Stormwater Detention Basin project was completed in 2014. The project received an award from the *Houston Area Urban Forestry Council* as the *2014 Project of Year* because of the extensive tree planting that was completed.

