



Whiteoak Bayou Low Impact Development Redevelopment

Water Body	Whiteoak Bayou Above Tidal (Seg 1017)
Location	Houston, Texas
River Basin	San Jacinto River (10)
Contractor	City of Houston
Project Period	May 19, 2010 to July 31, 2014
Project Total	\$778,243 (Federal 60% and Local 40%)

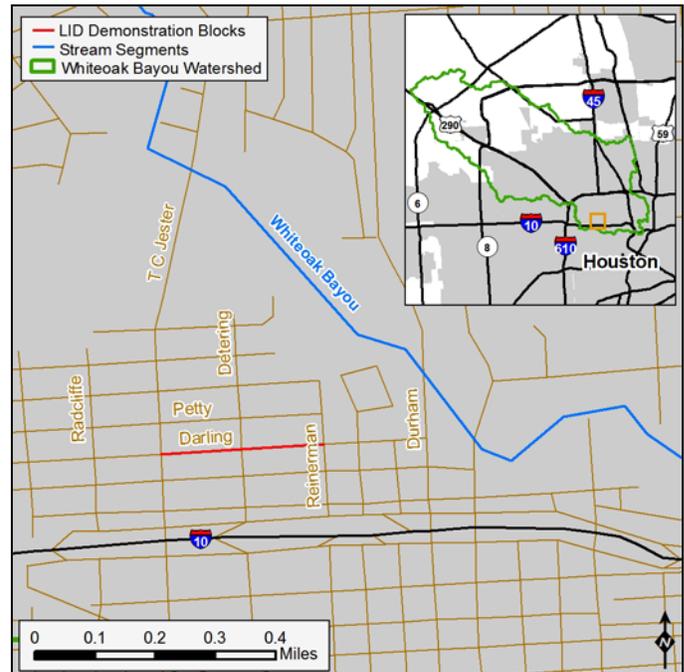
Low Impact Development (LID)

LID is a comprehensive approach to site planning, design, and pollution prevention strategies that, when combined, create a more economically sustainable and ecologically functional landscape. LID works with nature to manage storm water as close to its source as possible. This approach treats storm water as a resource, rather than a waste product, and integrates hydrologic and water quality functions into all aspects of the urban landscape and infrastructure. The result is functional and appealing site drainage which restores the ecological integrity of receiving waters, promotes the natural movement of water within an ecosystem or watershed, and reduces construction, maintenance and inspection costs. Examples of LID management approaches and technologies include rain gardens, porous pavements, green roofs, and rainwater harvesting for later use.

The Whiteoak Bayou Above Tidal (Segment 1017) flows through a primarily urban landscape in the Houston area. Water quality testing has found elevated bacteria concentrations within the waterways of the Whiteoak Bayou watershed, posing a risk to people who swim or wade in them. Urban storm water runoff has been shown as a significant contributor of pollutant loadings to the waterways; therefore, LID has the potential to be an effective management strategy.

Project Description

This project incorporates a set of LID technologies into a redevelopment project in the Cottage Grove Subdivision and evaluate their effectiveness. The 5200 and 5300 blocks of Darling Street will be reconstructed with LID features (e.g., vegetative swales, porous pavement/parking, and porous sidewalks). The city will document the water quality benefits of the LID features through collection of storm water quality data prior to and after redevelopment, establish and conduct a scheduled maintenance program for each LID feature, and document and compare the construction costs and annual operation/maintenance costs for the LID



features with the costs of conventional practices for possible city-wide application in public construction and private development. The city will also conduct LID public outreach and educational activities.

Current Status

The contract is closed. Construction of BMPs is completed. Post-construction monitoring and cost-benefit analysis are continuing in the post-contract period.

For More Information

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Project Highlights

- 6/2010 – The Post-Award Conference was held.
- 3/2011 – A Water Quality Study Plan for monitoring water quality performance was approved.
- 1/2012 – A Communication Plan for developing partnerships, informing the public, and facilitating coordination of city-wide application of LID features was approved.
- 3/2012 – The LID design subcontract was awarded to Jones & Carter.
- 3/2012 – The planning meeting for the Quality Assurance Project Plan (QAPP) for monitoring was conducted.
- 4/2012 – The draft QAPP for monitoring was submitted and the monitoring subcontract with Rice University.
- 7/2012 – The City of Houston Technical Review Committee reviewed the project design criteria.
- 12/2012 – Jones & Carter submitted the draft design plan & drawings for the redevelopment.
- 2/2013 – The City of Houston conducted a “constructability review” of the project to identify possible barriers.
- 3/2013 – Jones & Carter submitted a second draft design plan. City reviewed and commented.
- 4/2013 – Jones & Carter submitted the final design plan & drawings.
- 4/2013 – Watearth (design subcontractor) completed the Operation and Maintenance Plan for the Cottage Grove BMPs
- 5/2013 – Local stakeholders meeting held with City Council member; pre-construction sampling of storm runoff at project site (Darling) and control street (Petty).
- 5/2013 – Construction bids issued and opened. Successful bidder selected for recommendation to Council.
- 6/2013 – City Council granted approval to initiate construction contract
- 12/2013 – Utility relocations and other project site clearance requirements completed
- 1/2014 – City issued Notice to Proceed to construction contractor (Metro City Construction)
- 10/2014 – City granted contractor Substantial Completion status after final walk-through inspection
- 2/2015 – Final report approved