

Riverine Targeted Use of Buyouts (TUBs) Program¹ in Harris County, Precinct 2 (Comm. Gracia)

Background on Regional Frequently-flooded Property Buyouts: The impact of large flood

events, such as Hurricane Harvey and other frequent repetitive flood events that impact rivers and waterways both upstream and downstream in respective regional counties, compounded by tropical storms originating in the Gulf of Mexico, sparked substantial increases in buying out FEMA-qualified properties to reduce flood risk but more needed to be done to improve these properties - mainly in high-health risk and EJ communities.



Large-Scale Tree Planting on TUBs Location #1

Houston Wilderness partners with many partners on the *Riverine TUBs Program* including: NRCS - Texas, Texas Forest Service, Harris County Precincts, Harris County Flood Control District, multiple city departments in Houston, Pasadena and Seabrook. The *Institute for a Disaster Resilient Texas* (IDRT) plays a key role in the *Riverine TUBs Program* by providing analysis, research, and technical support on FEMA-qualified buyout properties in the 8-county region leading to Galveston Bay and the Gulf of Mexico

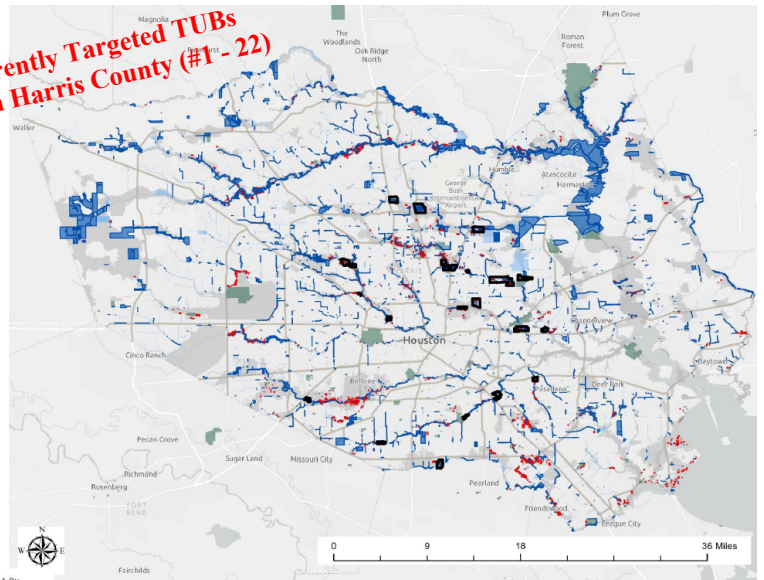
Strategic property buyouts to enhance flood resilience:

A 2020 study by Dr. Brody and the IDRT at Texas A&M University Galveston found that implementing nature-based infrastructure onto contiguous buyout properties, as the *Riverine TUBs Program* is doing, substantially reduced flood risks to surrounding communities and “statistically and spatially demonstrates the feasibility of incorporating additional ecological and proximity criteria into the flood buyout selection process without compromising strong economic benefits” (Atoba et al., 2020 - <https://doi.org/10.1080/17477891.2020.1771251>).

Beneficial Results: Working with state and regional stakeholders to implement the *Riverine TUBs Program* is helping mitigate the impacts of large rain events in the Greater Gulf-Houston Region by providing essential nature-based infrastructure, reduction in erosion, sediment and silt and critical connectivity along riparian corridors. Through large-scale tree plantings of native *Super Trees* and multiple native grass bioswale installations on strategic buyout locations, resilience and recovery increases by protecting, restoring and improving the water/air quality, water absorption rates and riparian erosion control rates, carbon sequestration, property values and wildlife habitat along multiple watersheds. The implementation of these large-scale NBI techniques also reduces Urban Heat Islands Effects and trash dumping in EJ communities.

The pioneering **Riverine Targeted Use of Buyouts (Riverine TUBs) Program** is a targeted nature-based infrastructure (NBI) approach to coastal resilience and hazard mitigation through a long-term strategy for habitually-flooded, multiple contiguous properties along riparian corridors to be 1) purchased by respective regional counties or municipalities, 2) held by the county or municipality - with enhancement MOUs with community partners including Houston Wilderness, and 3) enhanced with native grass bioswales and wetland areas. and large-scale reforestation. through target native *Super Trees*. In addition, the *Riverine TUBs Program* partners are working together to create Best Management Practices (BMPs) for NBI techniques, especially bioswales, that federal, state and local agencies can use to advise application of NBI techniques along other riparian corridors and the Texas coast. NBI enhancements and monitoring activities conducted through the TUBs Program will help mitigate flooding, improve water and air quality, restore natural habitats, and benefit at-risk and EJ communities.

Map of Currently Targeted TUBs Locations in Harris County (#1 - 22)



Data Sources: Buyouts dataset and Flood Control ROW by the Harris County Flood Control District (HCFC). Candidate Buyout dataset: Institute for a Disaster Resilient Texas (IDRT). Floodplains data by the Federal Emergency Management Agency (FEMA). datasets such as Parks, Highways, etc. from the Houston Galveston Area Council (HGAC) GIS data portal.

Riverine TUBs Location #s in Precinct 2:

1. Greens Bayou - Crooker/Moody Park
2. Vince Bayou - Pasadena Memorial Park
3. Sims Bayou - Glenbrook Park
4. Sims Bayou - Law Park
11. Greens Bayou - Dow One Park
13. Halls Bayou - Mary Withers Park
17. Hunting Bayou - Herman Brown Park
18. Halls Bayou - Hall Park Basin
19. Halls Bayou - Shady Lane Park (Bretshire Basin)
22. Little Vince/Armand Bayou - Inca Drive/Partnership Park

Locations in red are completed or underway

¹ March 2024