


I-45 North Houston Highway Improvement Project

IMPROVED DRAINAGE

Segments 2 and 3

Texas Department of Transportation

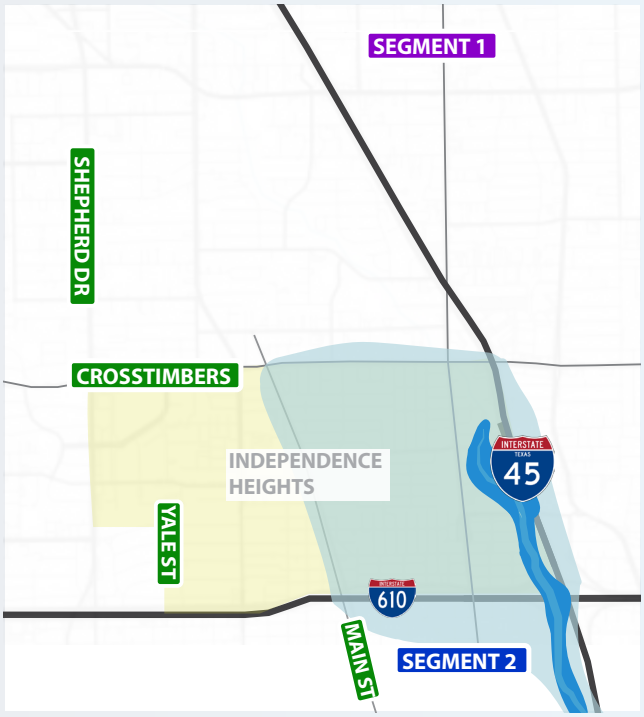
Stormwater drainage management is an important facet of the Texas Department of Transportation's (TxDOT) I-45 North Houston Highway Improvement Project (NHHIP). The project extends from south of downtown Houston north to Beltway 8 and will reroute I-45 around downtown following the route of US 59/I-69 to I-10 and I-10 westward until it continues northward to the Beltway. Once the downtown portion is complete, the Pierce Elevated section of I-45 will be decommissioned and replaced with a set of connectors that will take motorists in and out of downtown.

Poor and insufficient drainage during storm events has long plagued this project's route. Through the use of a variety of stormwater control techniques and drainage improvements, flooding will be dramatically reduced. By changing the ways that stormwater flows and drains, this highway project will mitigate longstanding problems.

> ***Through the use of a variety of stormwater control techniques and drainage improvements, flooding will be dramatically reduced.***

TxDOT estimates that these drainage improvements will reduce flooded areas by 795 acres and not flood 1,525 structures. The improvements will affect Little White Oak, White Oak and Buffalo Bayous. The use of new detention ponds and pump stations will hold 1,309 acre-feet of flood waters - enough to fill 1.4 Astrodomes.

Independence Heights, located north of I-610 and east of I-45, is the first Black city in Texas. It floods during rain events. The NHHIP will remove this area from the floodplain which will improve the quality of life for Independence Heights residents.



The light blue area shows where Independence Heights routinely flooded. The NHHIP will eliminate that flooding.

795 acres less flooded

1,525 structures not flooded

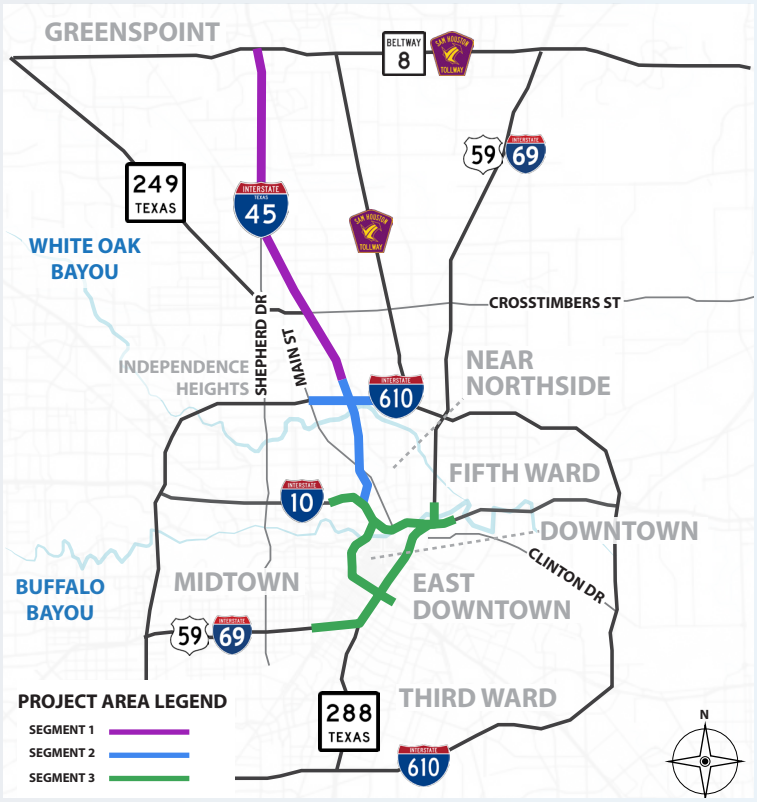
Drainage has traditionally been designed to move water as quickly as possible to area bayous which then drain into the Houston Ship Channel, flow through Galveston Bay and on to the Gulf of Mexico.

However, increasingly severe rain events have required more sophisticated methods for managing stormwater.

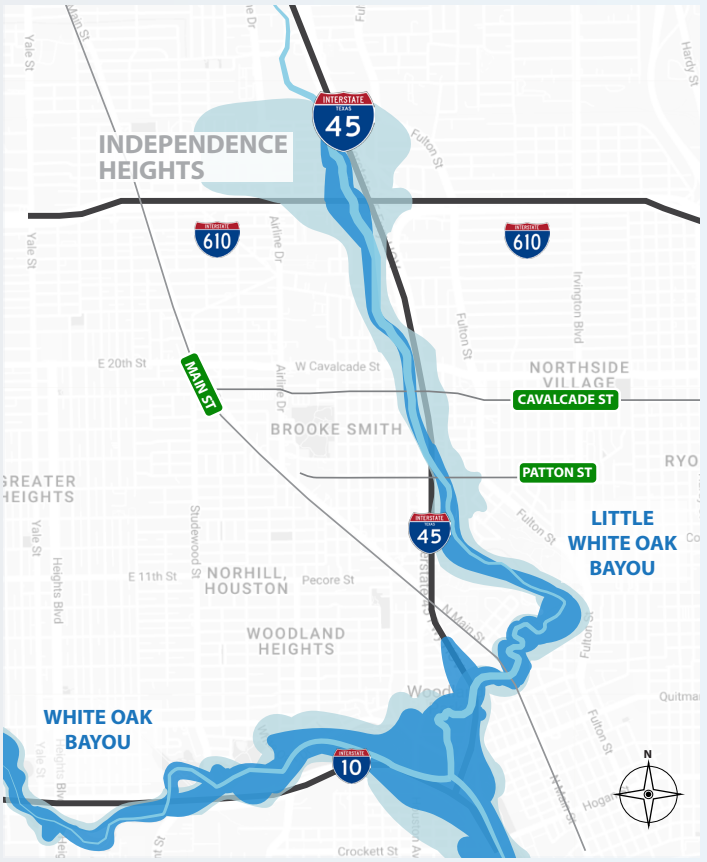
Moving water too quickly to the bayous overwhelms the bayous and causes more severe flooding. In order to slow down the water but also keep it off the streets, 14 new detention ponds will be constructed that hold the water until it is safe for them to drain into the bayous.

The capacity of these ponds is 42% greater than required. TxDOT is committed to enhancing flood resiliency by providing additional flood reduction benefits.

The area along I-45 from Patton to Crosstimbers will see a significant reduction in flooding. Many other areas along Little White Oak, White Oak and Buffalo Bayous will no longer experience 500-year flood events due to the NHHIP drainage improvements.



The I-45 NHHIP Segment Map above diplays the location for each segement in the project by color.



Improvements along White Oak Bayou and Little White Oak Bayou will remove flooding from the light blue areas.

A large detention pond of 30 acres will be built on the site of the former Clayton Homes.

The NHHIP project will address flooding along Buffalo Bayou. The light blue areas will no longer flood.

In addition to the detention ponds, increased underground capacity will be built. These large underground pipes beneath the new highway will help hold water off of roadways and out of structures. The pipes will carry stormwater to detention ponds or in some cases, pump stations that will force the water to drain in certain directions.

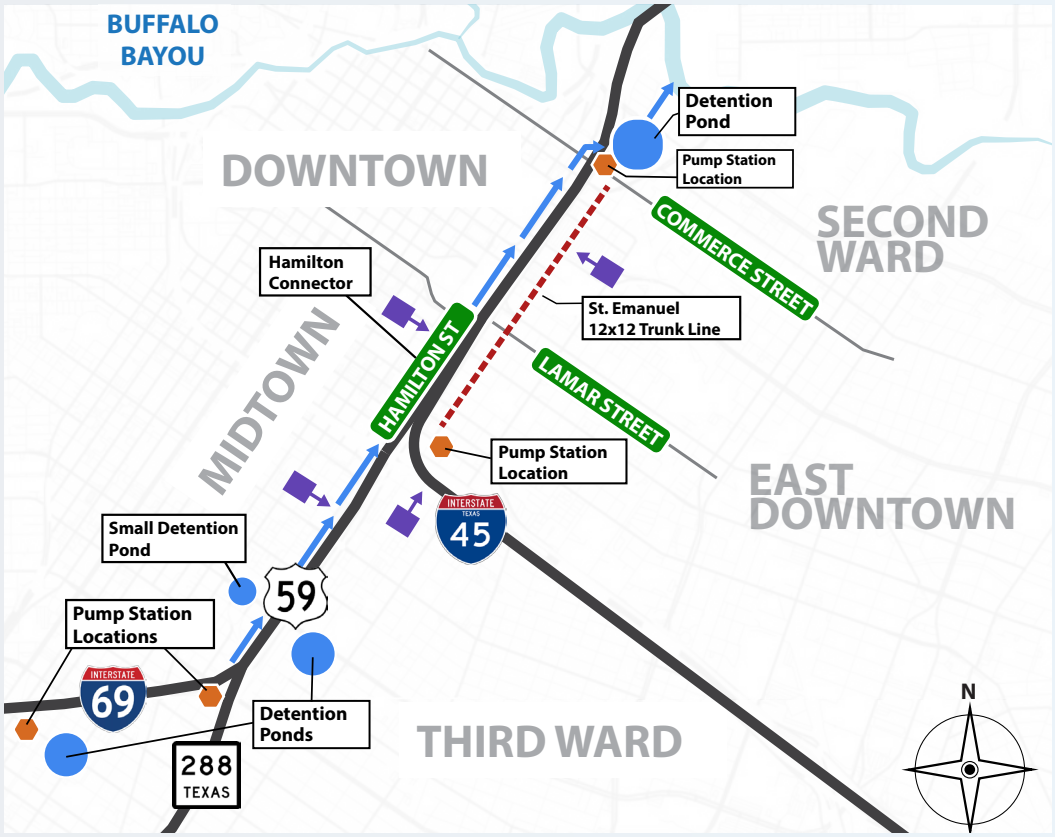
For example, the Hamilton Collector will run underneath the rerouted I-45 as it follows the route of US 59/I-69 along the east side of downtown Houston. Enormous 12 x 12 concrete box culverts underground will collect the stormwater runoff and send the water north to a new pump station and detention pond near Buffalo Bayou on the former Clayton Homes site.

This new system will work in concert with new drainage improvements under St. Emanuel that will also drain into the new detention pond on the Clayton Homes site. Jefferson St, Leeland St, Bell St, Polk St, Dallas St, Lamar St, Walker St, Rusk St, Capitol St, Texas Ave, Preston St, Franklin St, and Commerce St. all have existing systems that cross St. Emanuel so that stormwater from those systems will also flow to Buffalo Bayou via the new pump station and detention pond.

Six new pump stations will work to move flood water to detention ponds and off of highways and streets. TxDOT is also participating in the construction of the North and South Canals that will divert water from White Oak further downstream on Buffalo Bayou.

The EaDo and Third Ward neighborhoods will benefit from improvements along I-69 that will capture flood water that currently flows from Downtown and Midtown through Third Ward and EaDo. The new system will reroute the flows to large underground storm sewer systems and new and expanded detention ponds. This will reduce the amount of water in the existing storm sewers south of US 59/I-69 and provide additional capacity to these neighborhoods. Water will be captured at the new and existing portions of the depressed US 59/I-69 and routed to Buffalo Bayou where detention capacity is greatly expanded before draining into Buffalo Bayou.

Replacing small old drainage pipes under the freeway with 12'x12' box culverts will greatly increase the capacity to hold stormwater underground and off the streets.



The Hamilton Collector will greatly increase capacity to hold floodwater off the streets and send it to the new detention pond on the Clayton Homes site before releasing the water to Buffalo Bayou when it is safe to do so.

The purple boxes on the map show the areas where floodwater will be redirected to new systems. This will mitigate flooding and ponding in those areas, which often suffer from ponding and flooding during heavy rain events.

The new pump stations and detention ponds will be constructed at these locations:

PUMP STATIONS:

- Main St. at I-69
- Chenevert St. at I-69/SH 288
- I-45 & I-69 at St. Joseph & St. Emanuel
- I-69 near Runnels St.
- I-10 at I-59 (Southwest corner)
- I-45 at North Main (Southwest corner)
- Downtown connectors at Dallas St.

DETENTION PONDS:

- I-69 at Main St. (modified)
- I-69 at Chenevert Head Box
- I-69 at Holman St.
- I-69 at Buffalo Bayou
- I-69 & I-10 at Buffalo Bayou
- I-45 at Patton St.
- I-45 & I-610 Interchange

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Contact us at: HOU-PIOWebmail@txdot.gov.

To learn more about the NHHIP, scan the QCR code and watch the Changes for the Better video.

For more information about the project please visit: https://www.ih45northandmore.com.
Also find out more at txdot.gov. and follow us on Facebook and Twitter/TxDOTHoustonPIO.