South Mayde Creek Channel
Conveyance Improvements and Bypass Channel and Related Stormwater Detention Basin Projects

Alan Black
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Harris County Flood Control District
Harris County Flood Control District

• A special purpose district created in 1937 by the Texas Legislature

• In response to floods that devastated the Houston-area in 1929 and 1935

• Serves as a local partner to leverage federal tax dollars for flood damage reduction

• Harris County Commissioners Court serves as our board of directors or governing body
Provide flood damage reduction projects that work, with appropriate regard for community and natural values.
Harris County Watersheds
1. County/Municipal neighborhood drainage and HCFCD infrastructure pre-dates current criteria. Neighborhood streets are re-graded and re-constructed by the City with more inlets and bigger storm sewers to get the water out of the neighborhood faster.
2. Increased flow is mitigated in a new stormwater detention basin that HCFCD constructs in consultation with the City who then maintains the basin. Water is held in the basin and slowly released through a restricted outfall pipe.
3. The stormwater detention basin also provides greenspace and opportunities for recreation such as public parks, which the City constructs and maintains.
4. Because the increased flows are mitigated in the stormwater detention basin, the water flowing to the HCFCD maintained channel is unchanged and does not increase flooding elsewhere.
Bond Approved on August 25, 2018

- 237 projects across all watersheds

- 38 projects added based on community input ($400M+)

$2.5B  Bond funds
+  $2.3B  Partner opportunities
=  ~$4.8B+  Total
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2018 Bond Program – Addicks Watershed
– Community Engagement Meeting June 21, 2018
– HCFCD requested public input
– 135 public comments received
  • 23.70%
  • 19.26%
  • 17.04%
  • 14.81%
Lower South Mayde Creek
Preliminary Engineering Report for
Channel Conveyance Improvements
and Bypass Channel

Jonathan St. Romain
Project Manager
Harris County Flood Control District
Once a feasibility study report has been approved, and if funding is available, the project moves into the **project development or preliminary engineering** stage. During this stage, Flood Control District engineers and environmental specialists develop and evaluate possible alternatives, prepare a project development or preliminary engineering report that includes project recommendations that meet flood damage reduction goals. This report will identify needed right-of-way, determine utility relocation and develop a preliminary cost estimate.
Channel Conveyance Improvements – Preliminary Engineering Report Goals

Preliminary Engineering Report:

- Surveying
- Utilities/pipelines
- Geotechnical
- Environmental
- Hydrologic and hydraulic modeling
- Alternatives analysis

Lower South Mayde Creek looking upstream of Greenhouse Road
Channel Conveyance Improvements – Existing Conditions

- **Existing channel length:** approximately 17 miles
- **Discharge location:** the existing channel discharges into the Addicks Reservoir
- **Known concerns:**
  - Sedimentation and hydraulic restrictions
  - Repetitive flooding in nearby neighborhoods
- **Surrounding land use:** mostly residential with pockets of commercial

Legend
- HCFCD Channel
- Planned Improvement Area
Channel Conveyance Improvements – Proposed Overview

- **Channel Improvements** between Fry Road and Greenhouse Road
- **Bypass Channel** between Greenhouse Road and Barker Cypress Road
  - Sedimentation Basins near Greenhouse Road bridge
Channel Conveyance Improvements – Proposed Improvements

- **Widen channel** between Fry Road and Greenhouse Road to improve conveyance
- **Benched improvements** to minimize environmental impacts
- **Walking trails would be relocated** to make room for channel expansion
Channel Conveyance Improvements – Bypass Channel Details

- Convey additional flow into Addicks Reservoir during more severe storm events
- Project team will evaluate multiple configurations
Channel Conveyance Improvements – Bypass Channel Challenges

Bypass Challenges:

1. Consider U101-01 crossing
2. Minimize environmental impact
3. Consider future road crossing at Groeschke Road
4. Avoid sedimentation and erosion
5. Show no impact
Channel Conveyance Improvements – Sedimentation Basins

- **U.S. Army Corps of Engineers requirement**

- **Purpose**: Sediment basins would facilitate sediment collection and reduce future sedimentation issues

- **Process**: Flows would be diverted from South Mayde Creek and enter the basins where velocities would be reduced
Channel Conveyance Improvements – Preliminary Results

- Channel conveyance improvements reduce flood levels up to 1.3 feet at some locations during a 1% annual chance (100-year) storm event.
- The results provided are based only on channel conveyance improvements and do not account for other proposed improvements.
Channel Conveyance Improvements – Path Forward

Fall/Winter 2019
- Gather Public Input
- Work Through Project Challenges
- Model Remaining Alternatives

Spring 2020
- Preliminary Engineering Report Finalized
- Acquire Properties for Basins

TBD
- Detailed Design

TBD
- Construction
South Mayde Creek Stormwater Detention Basins
Stormwater Detention Basins – Project Purpose

- Reduce risk of structural and street flooding along South Mayde Creek
- Mitigate potential adverse impacts of South Mayde Creek Channel Improvements
- Improve mobility and emergency response following a major storm event
- Temporarily stores excess stormwater, and then slowly drains when channel water levels recede
Stormwater Detention Basins – Wet vs. Dry

**Dry Bottom Basin**
- Includes pilot channels and cross slopes to facilitate mowing and complete drainage of a basin following a storm event.

**Wet Bottom Basin**
- Can include a permanent water pool, a vegetated shelf, and a bottom shelf.
- Wet bottom basin is generally more efficient than a dry bottom basin.
- South Mayde Creek basins will likely be wet bottom basins.
Stormwater Detention Basins – Proposed Location
Stormwater Detention Basins – Project Description

- Construct two regional detention basins
  - West Basin: 404 acre-feet (131,643,781 gallons)
  - East Basin: 578 acre-feet (188,341,845 gallons)
Stormwater Detention Basins – Preliminary Results

- Flood depth reduction ranging from .5 feet to 1 foot during a 1% annual chance (100-year) storm event

- Results are based on preliminary modeling
Stormwater Detention Basins – Path Forward

Fall/Winter 2019
- Gather Public Input
- Preliminary Engineering Report in Development

Spring 2020
- Preliminary Engineering Report
- Acquire Properties for Basins Finalized

Summer 2020
- Detailed Design

TBD
- Construction
Independent Projects

Recently Complete
- De-snag (fallen trees/branches) east of Greenhouse Road bridge

Active Now
- Spot repairs (erosion/outfall pipes)

Begin Late 2019
- Channel de-silt
We want to hear from you.

Please visit HCFCD.org/C36 to learn more about the Channel Conveyance Improvements or HCFCD.org/C46 to learn more about the Related Stormwater Detention Basin Projects.

We also encourage you to ask questions and sign up for our mailing list.