



Lake Conroe – Lake Houston Joint Reservoir Operations Study

Public Meeting #1 – Study Background, Scope, and Goals

March 5, 2026



San Jacinto River Authority



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- Created by Texas Legislature in 1937
- Boundaries include all or part of 7 counties
- Board of Directors: 7 members appointed by Governor
- Receives no dedicated funds from the state, nor does it collect any type of taxes

Assure long-term water supplies

Protect water quality

Educate the public on water resources management topics

Provide raw water, drinking water, and wastewater services

Coordinate regional flood planning

Coastal Water Authority (CWA)



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- Created by Special Act of the Texas Legislature in 1967
- Conservation and Reclamation District of the State of Texas
- A partner with the City of Houston
- Board of Directors
 - 4 Appointed by City of Houston Mayor
 - 3 Appointed by Governor
- Located in Harris, Chambers, and Liberty Counties
- Largest Regional Raw Water Supplier (1 Billion Gallons per Day)

Lake Houston - Watershed



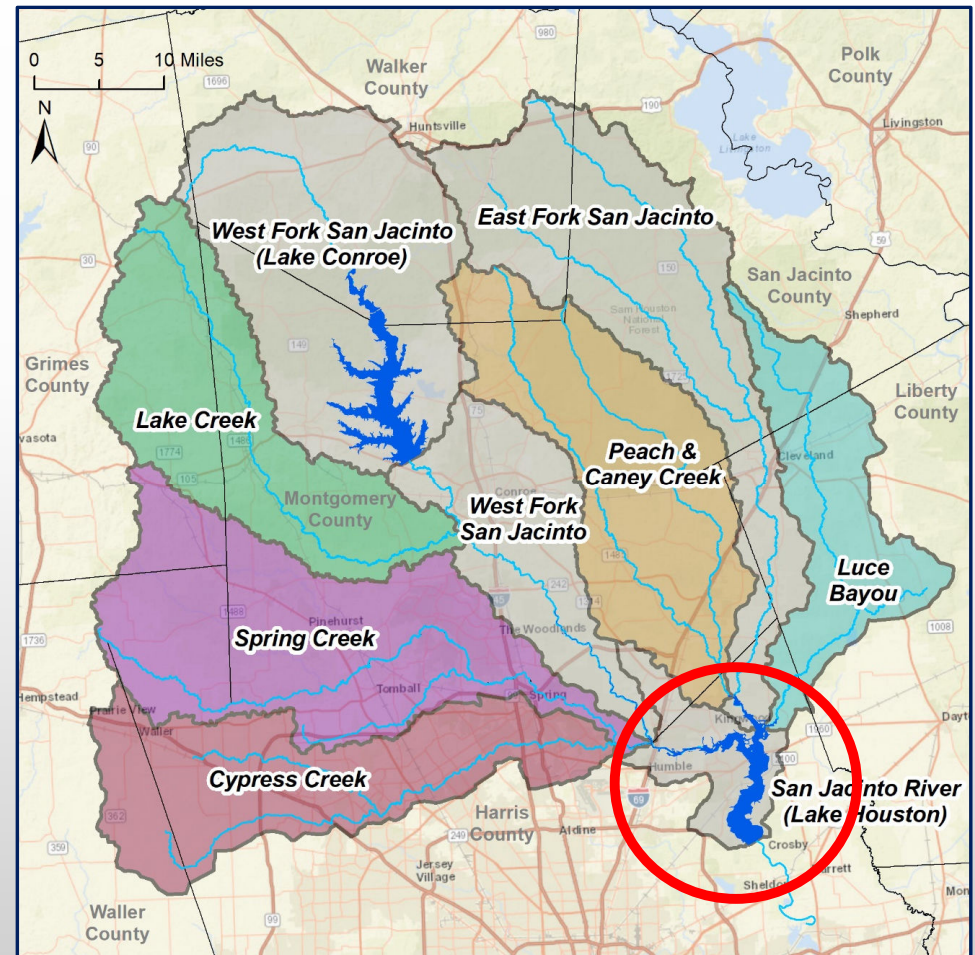
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~2,800 square miles

2 major reservoirs

Sub-watersheds

-  San Jacinto River (E & W Forks)
-  Cypress Creek
-  Lake Creek
-  Spring Creek
-  Luce Bayou
-  Peach/Caney Creek



Lake Houston Facts

- Water Supply Reservoir
- 11,443 acres
- 136,119 acre-feet Reservoir Storage
- City of Houston (COH) owns Lake Houston Reservoir, Dam and Lake Houston Pump Station
- CWA under contract to operate and maintain facilities
- SJRA also owns and operates a pump station



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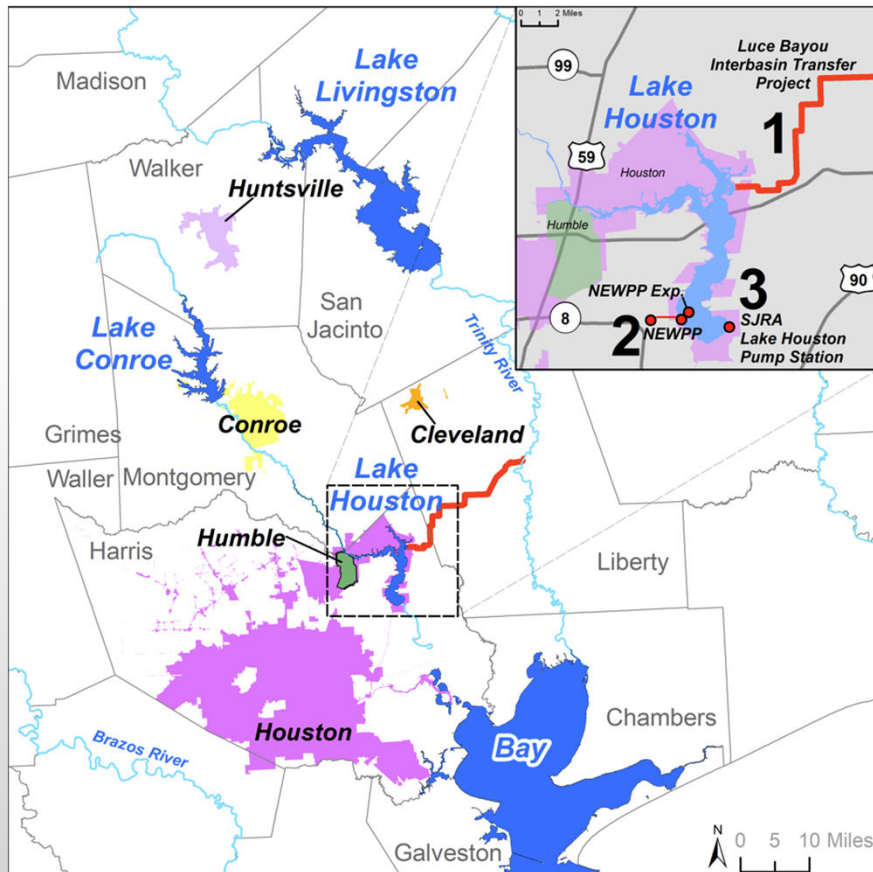


Lake Houston Dam was constructed in 1953

Lake Houston Water Supply Operations



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1: Luce Bayou Interbasin Transfer Project



2: NEWPP and NEWPP Expansion



3: SJRA Lake Houston Pump Station



Lake Houston – Historic Flooding



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Recent Flooding Events (last decade)

Storm	Year
May Storms	2024
Tropical Storm Imelda	2019
Hurricane Harvey	2017
Memorial Day	2016
Tax Day Flood	2016



Existing Lake Houston Dam



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Uncontrolled Spillway

- 3,080 feet-long

4 Gates

- 2 Flashboard Gates
- 2 Tainter Gates
- Capacity ~10,000 cfs



Lake Houston Dam Spillway Improvement Project (LHDSIP)

Project Objectives

- Improve operations of Lake Houston Reservoir
- Provide 11 additional spillway gates to support long term rehabilitation, repair, or replacement of the existing, aging spillway gates
- Provide additional discharge capacity to reduce upstream flooding
- Project is being joint funded by HCFCD



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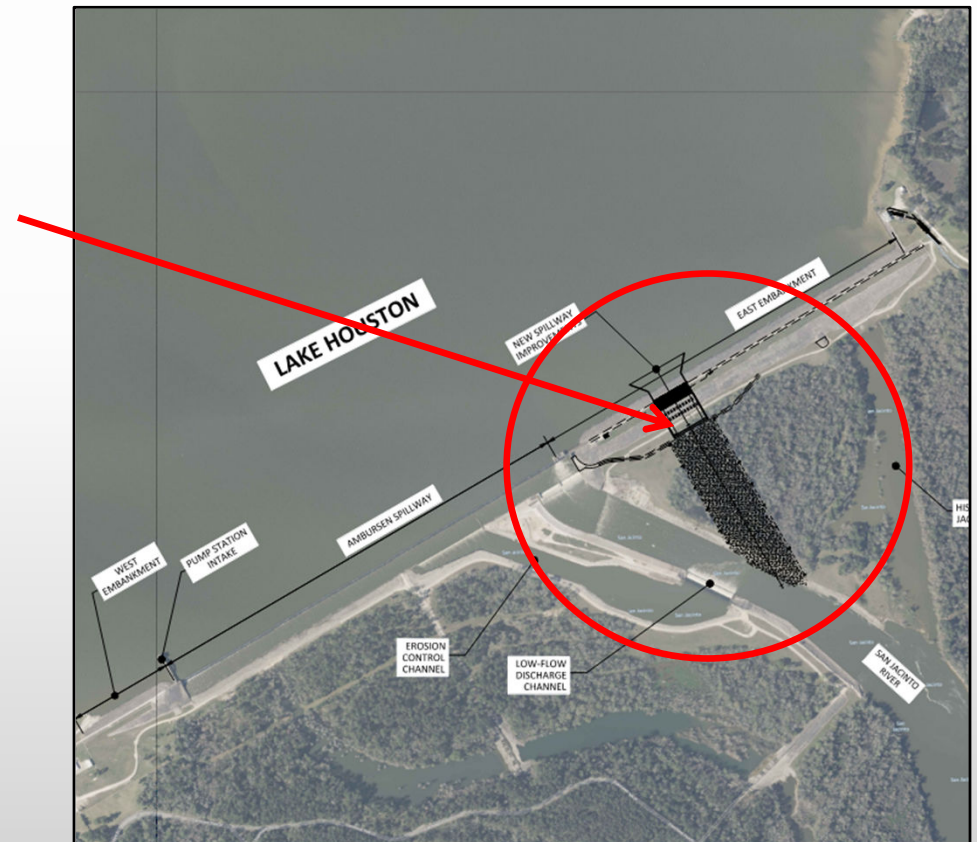
Lake Houston Dam Proposed Improvements



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New controlled structure within existing east embankment:

- 11 new 20'x 20' radial gates
- Additional 78,000 cfs discharge capacity
- Reduced upstream flooding
- Benefits future dam rehabilitation or replacement project
- Project Status: Detailed Design (30%)



Lake Conroe - Watershed

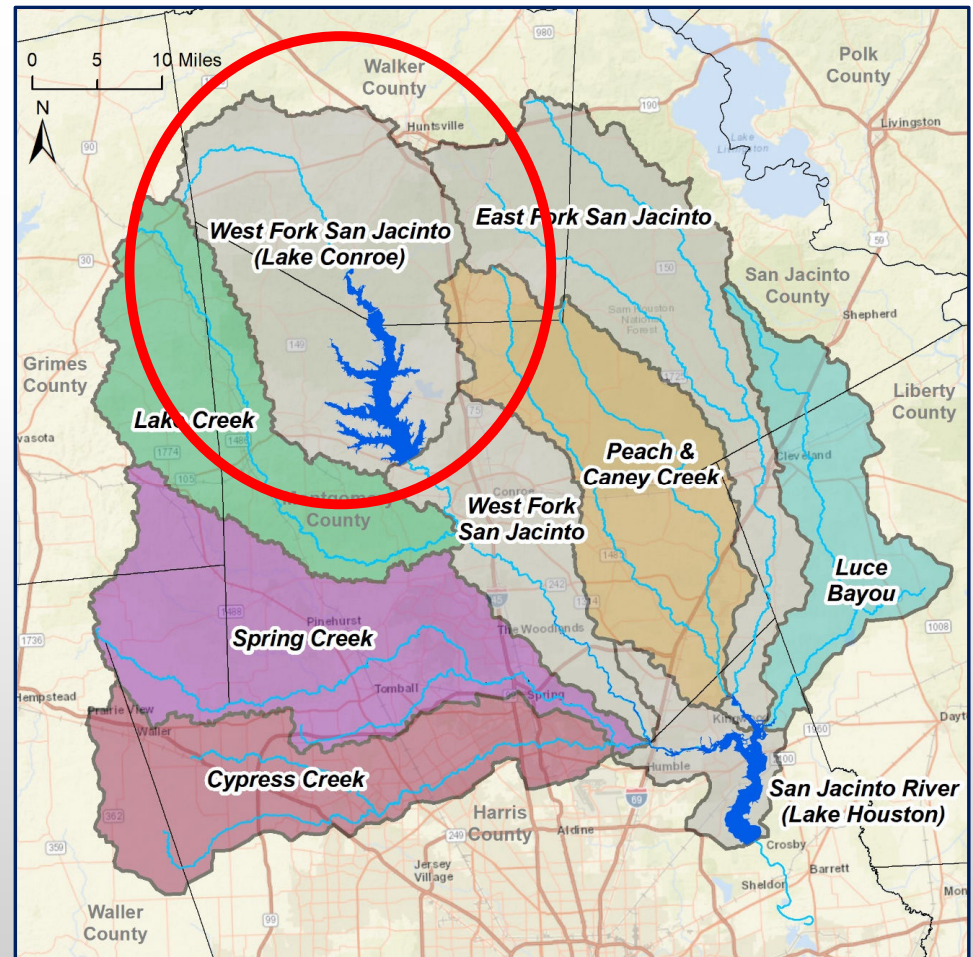
Lake Conroe watershed is ~16% of total Lake Houston watershed

Lake Conroe is only major control structure upstream of Lake Houston

Lake Conroe mitigates runoff from rainfall in its watershed



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Lake Conroe Facts

- Water Supply Reservoir
- Completed in 1973
- Joint venture between SJRA and COH
- ~20,000 acres
- ~450 square mile drainage area
- > 400,000 acre-feet of storage
- Shared Water Rights
 - 100,000 acre-feet Annual Permitted Yield
 - 2/3 COH (66,667 acre-feet)
 - 1/3 SJRA (33,333 acre-feet)
- 5 gates (40'x30')
- Normal pool elevation: 201' msl



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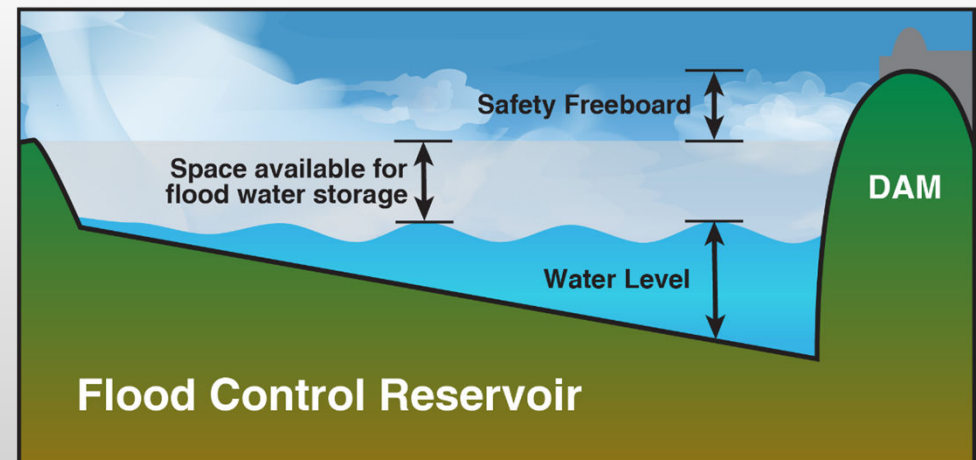
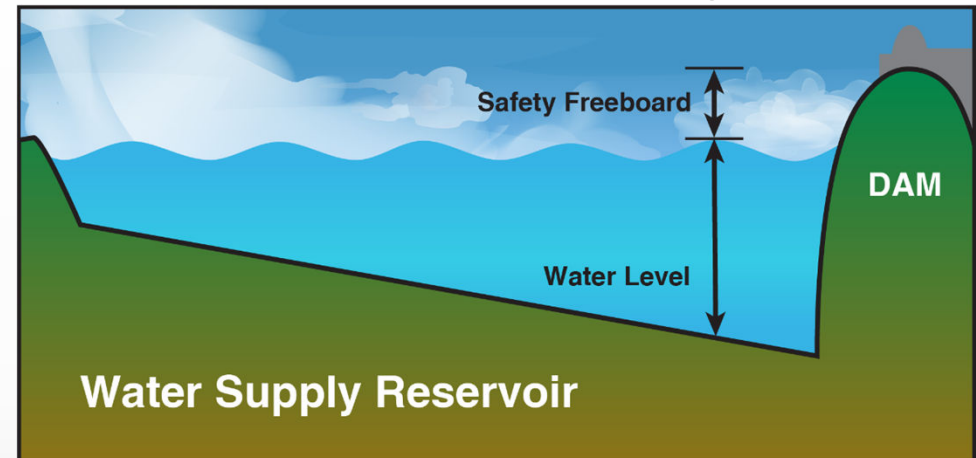
Milstead
HOUSTON

Lake Conroe - Purpose

- Water supply reservoirs (Lake Conroe) are designed to maximize storage
- Flood control reservoirs are designed to maintain space to absorb inflows



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Lake Conroe – Gates Operating Protocol



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- Is engineered to protect the dam
- Safeguards against loss of life and excessive economic loss
- Preserves critical water supplies
- Prevents overtopping of the spillway gates
- Calculates Inflows to the lake
- Recommended openings are no more than 75% of Max Inflow
- Ensures that peak outflow < peak inflow

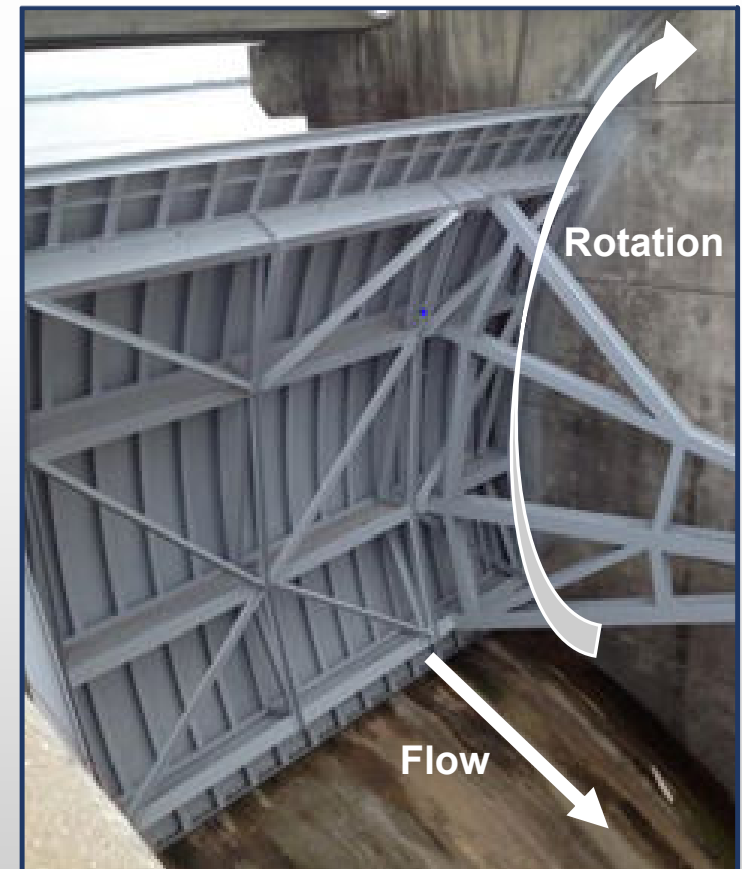


Lake Conroe - Gates Not Designed to be Overtopped Upstream



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Downstream



Current Study



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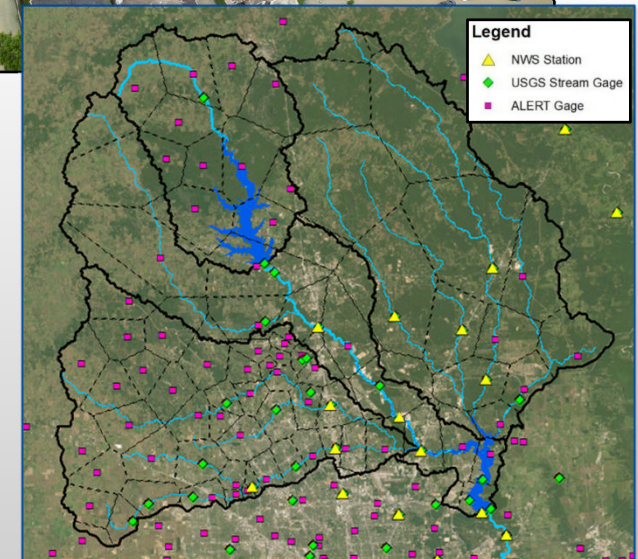
- Texas Water Development Board —————→ \$500k Grant Funds
- City of Houston —————→ \$450k Local Match
- City of Humble —————→ \$50k Local Match
- San Jacinto River Authority —————→ Project Management & In-Kind Services

Study Description

1. Determine the most efficient and safe operation of Lake Conroe and Lake Houston
2. Evaluate the feasibility of prereleases including impacts on water supply
3. Develop a forecasting tool for Lake Houston and support development of the gate operations policy for the proposed Lake Houston dam spillway gates



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Scope of Work Summary

- Project Management
- Data Collection
- Evaluation of Pre-Releases at Lake Conroe and Lake Houston
- Lake Houston Flow Forecasting Tool
- Lake Houston Gate Operations Policy Support
- Community & Stakeholder Engagement



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Data Collection

- Weather/rainfall data
- Stream gage and lake level information
- Hydrologic and hydraulic Models
- Land cover data
- Previous studies/reports
- Lake Conroe and Lake Houston data/resources



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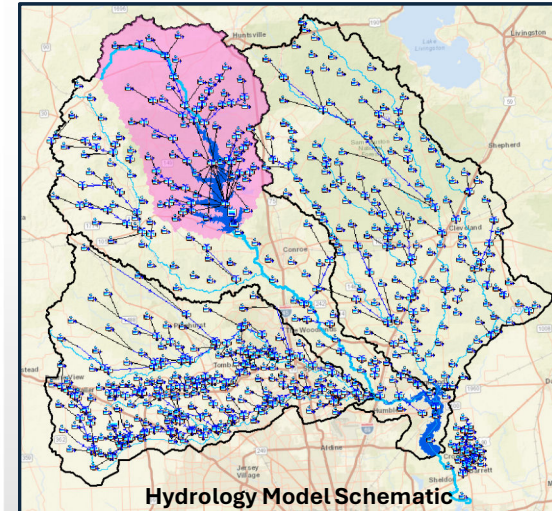
SAN JACINTO

REGIONAL WATERSHED MASTER DRAINAGE PLAN



REPORT

Prepared for:
Harris County Flood Control District
San Jacinto River Authority
Montgomery County
City of Houston



Lake Conroe (43306) - USGS Bubbler (7)

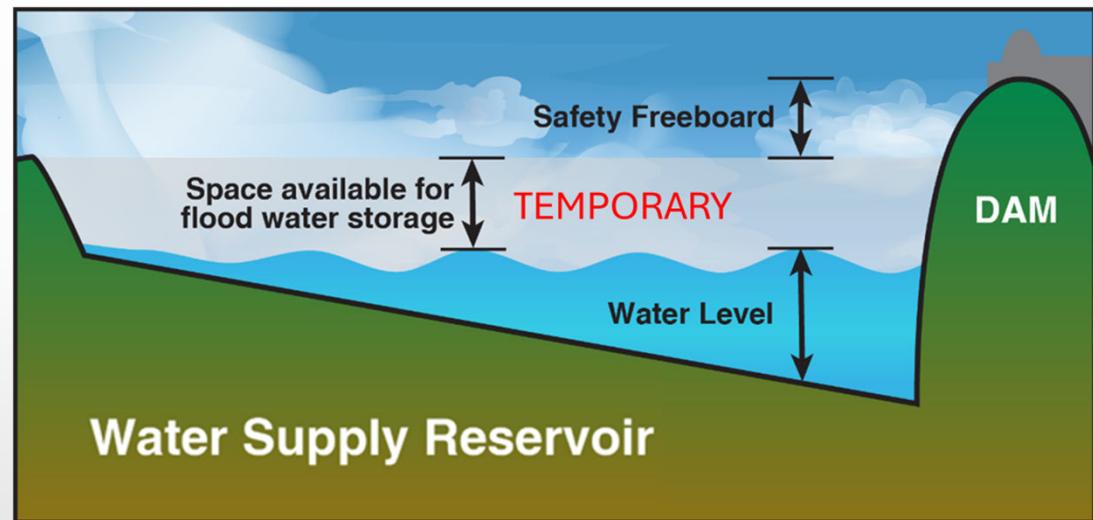


Evaluation of Pre-Releases



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- 1) Develop Baseline Conditions Model
 - Update structures data
 - Incorporate survey data
 - Incorporate planned spillway structure at Lake Houston
- 2) Perform Pre-Release Evaluations
 - 20 different pre-release scenarios
 - Determine effectiveness
- 3) Evaluate consequence to water supply at both reservoirs
- 4) Develop communications plan related to pre-releases



Lake Houston Flow Forecasting Tool

Forecasting Tool that incorporates:

- 1) Incoming rainfall (observed & forecasted)
- 2) Stream gage observed data
- 3) Lake Conroe outflow data
- 4) Watershed model(s)

Predicts:

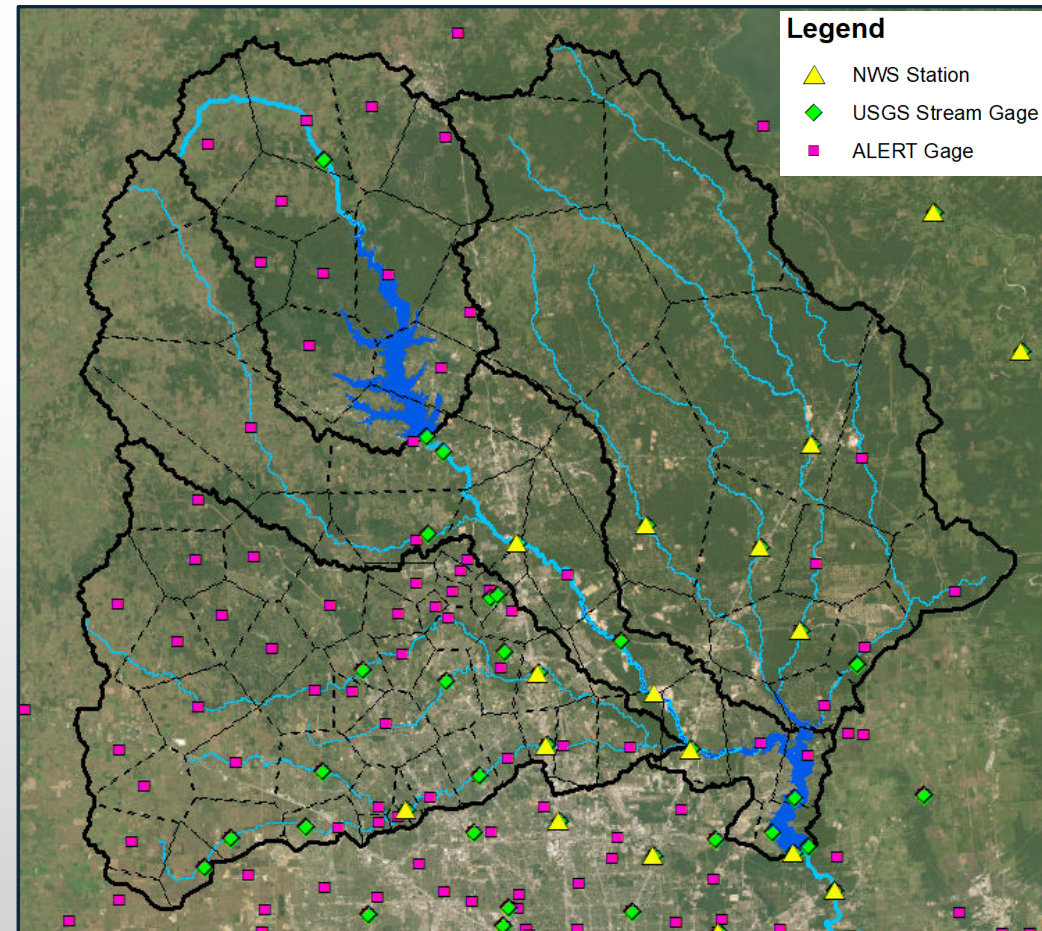
- 1) Lake Houston inflows
- 2) Lake Houston water levels

Verify forecasts reasonably match observations

Can inform proposed gate operations and communications with local officials



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Support Lake Houston Gate Operations Policy



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- Incorporate Lake Conroe operations data
- Incorporate inflow forecasting
- Potentially incorporate pre-release strategies



Community Engagement / Estimated Schedule



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Kickoff – September 2025

Public Meetings

- #1 – March 2026: Study Background, Scope, and Goals (Humble)
- #2 – Mid 2026: Study Progress (Lake Conroe)
- #3 – Late 2026: Study Results (The Woodlands)

Website: LCLHJointOps.com

Public comments welcome on the study, flood risk locations, and flood impacts



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Questions