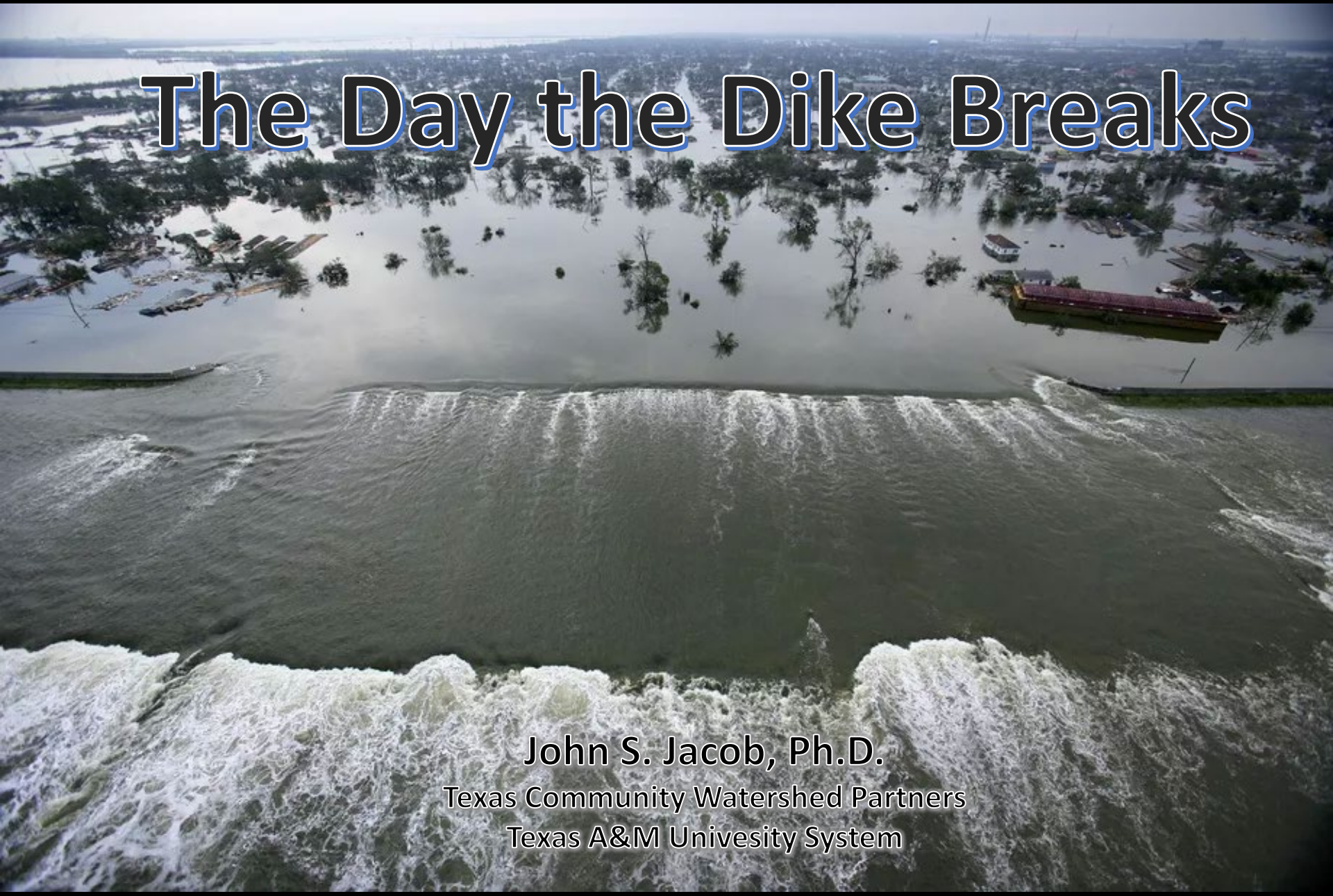
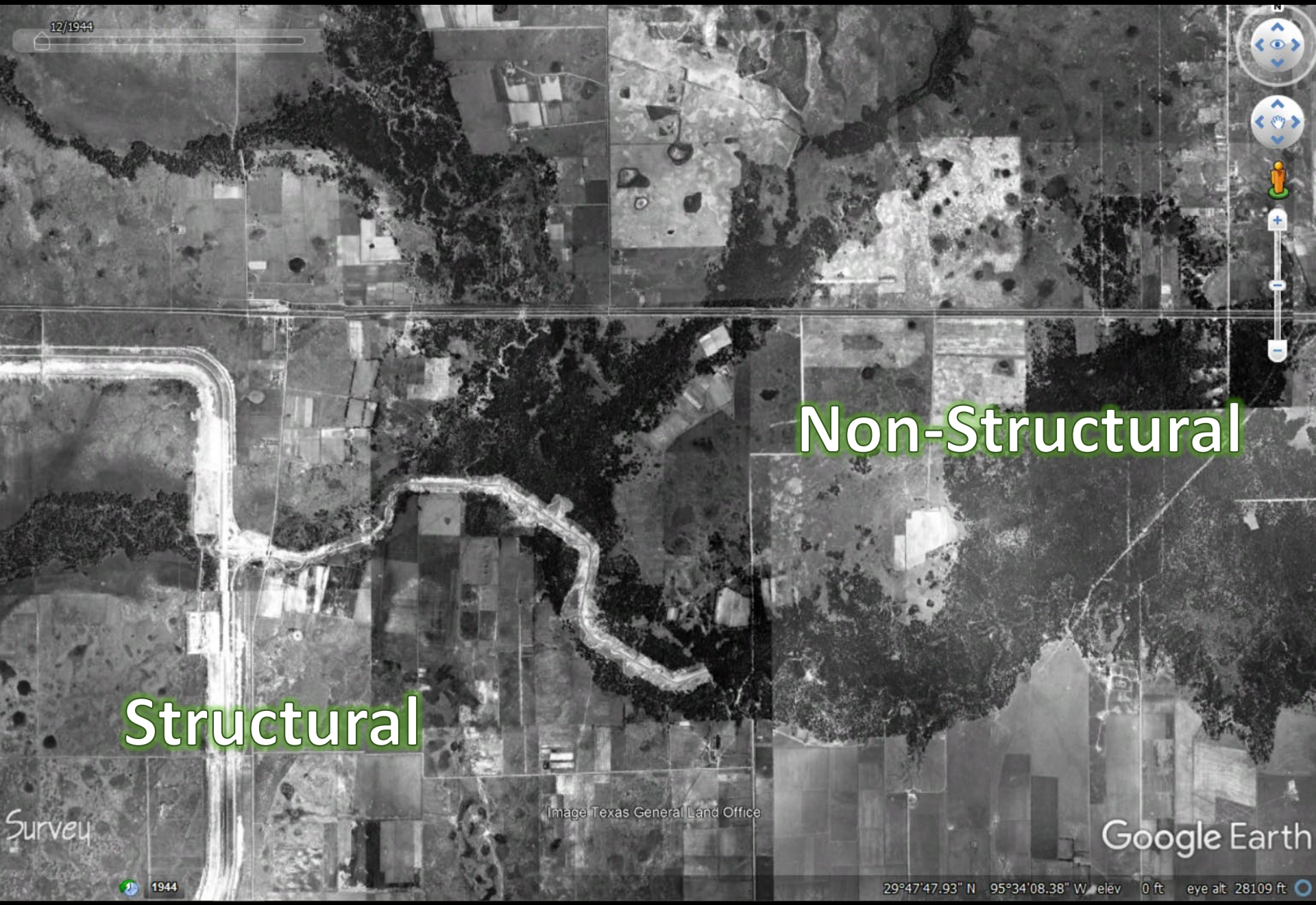
The Day the Dike Breaks

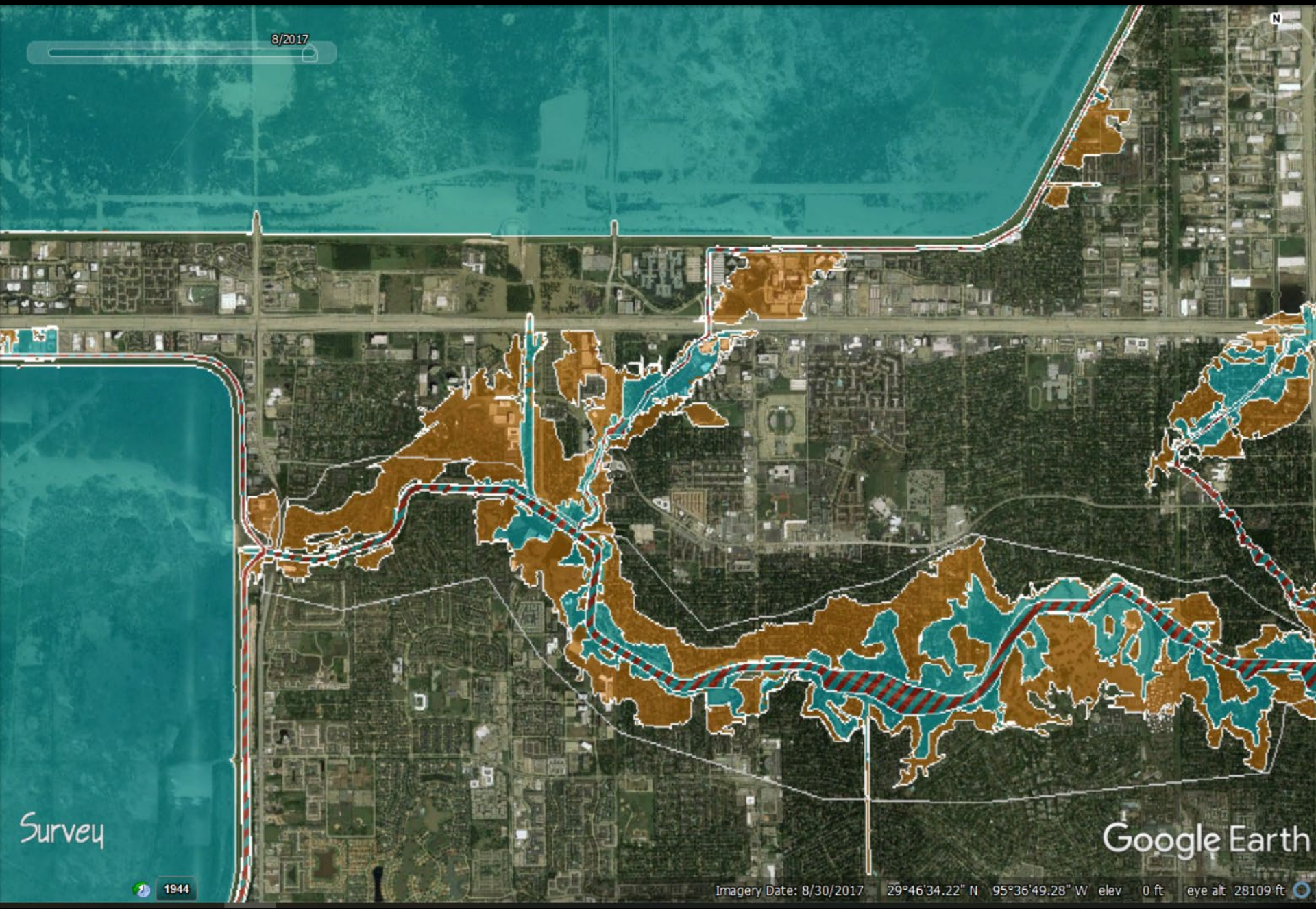


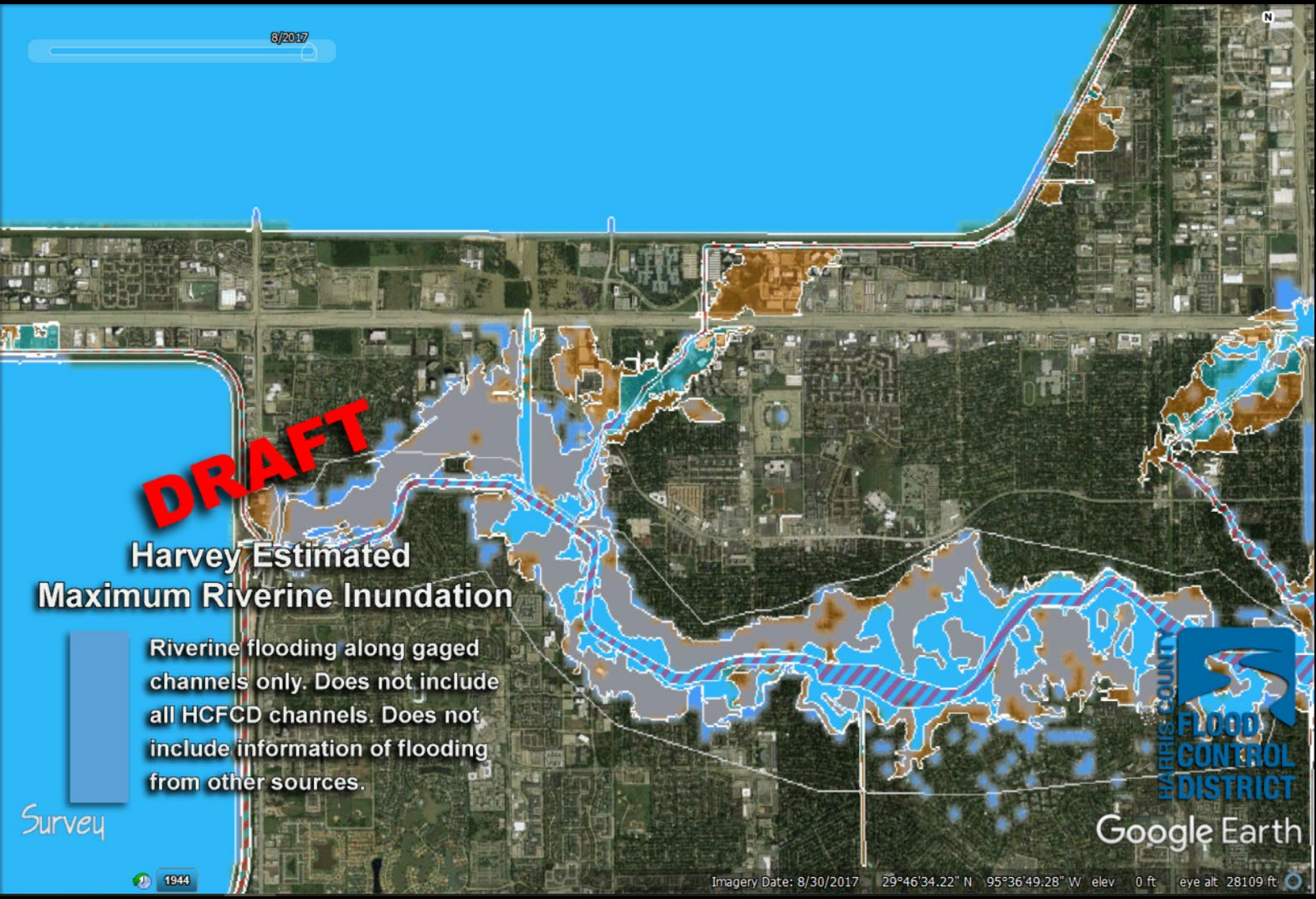
John S. Jacob, Ph.D.
Texas Community Watershed Partners
Texas A&M Univesity System

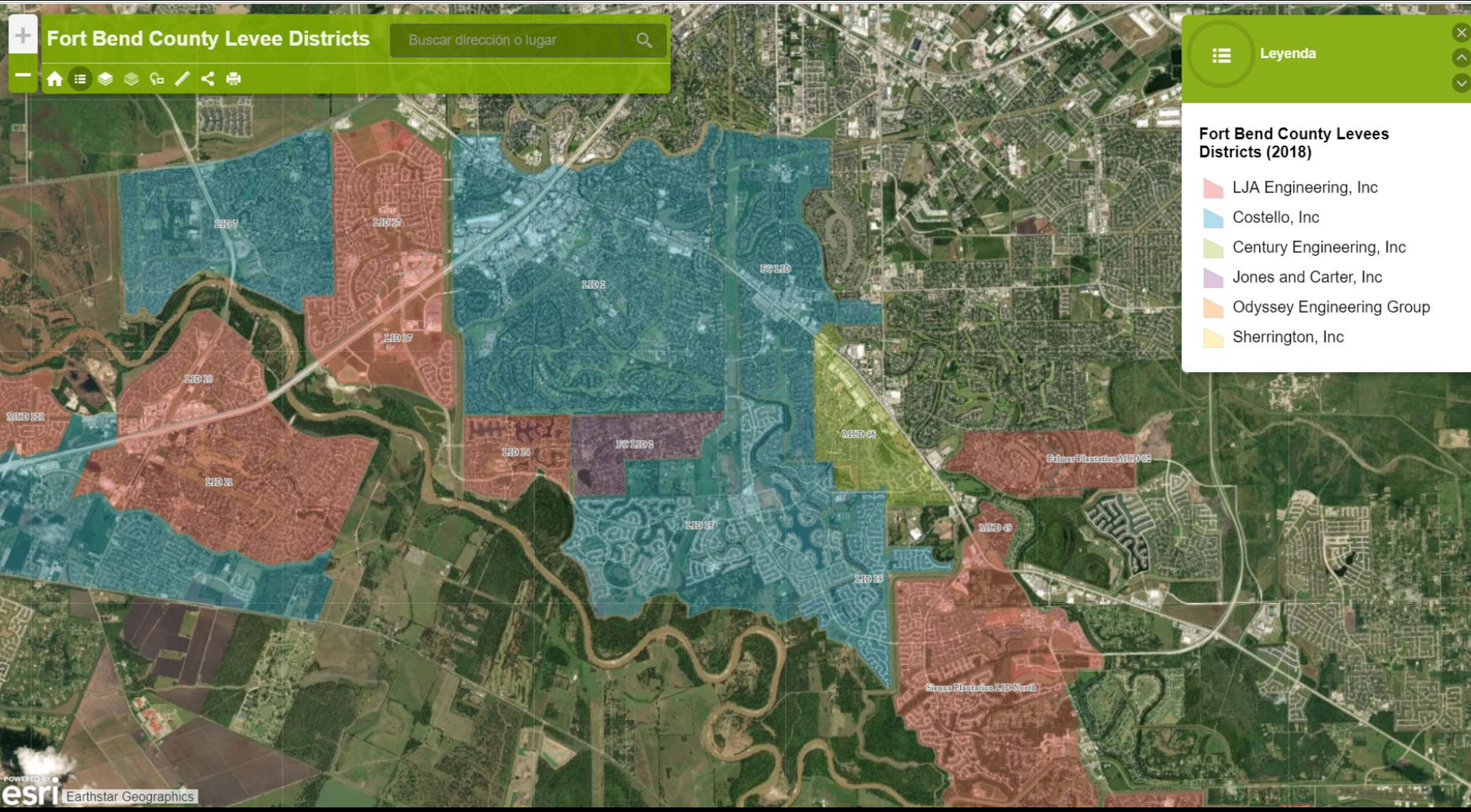
AFP via Getty Images

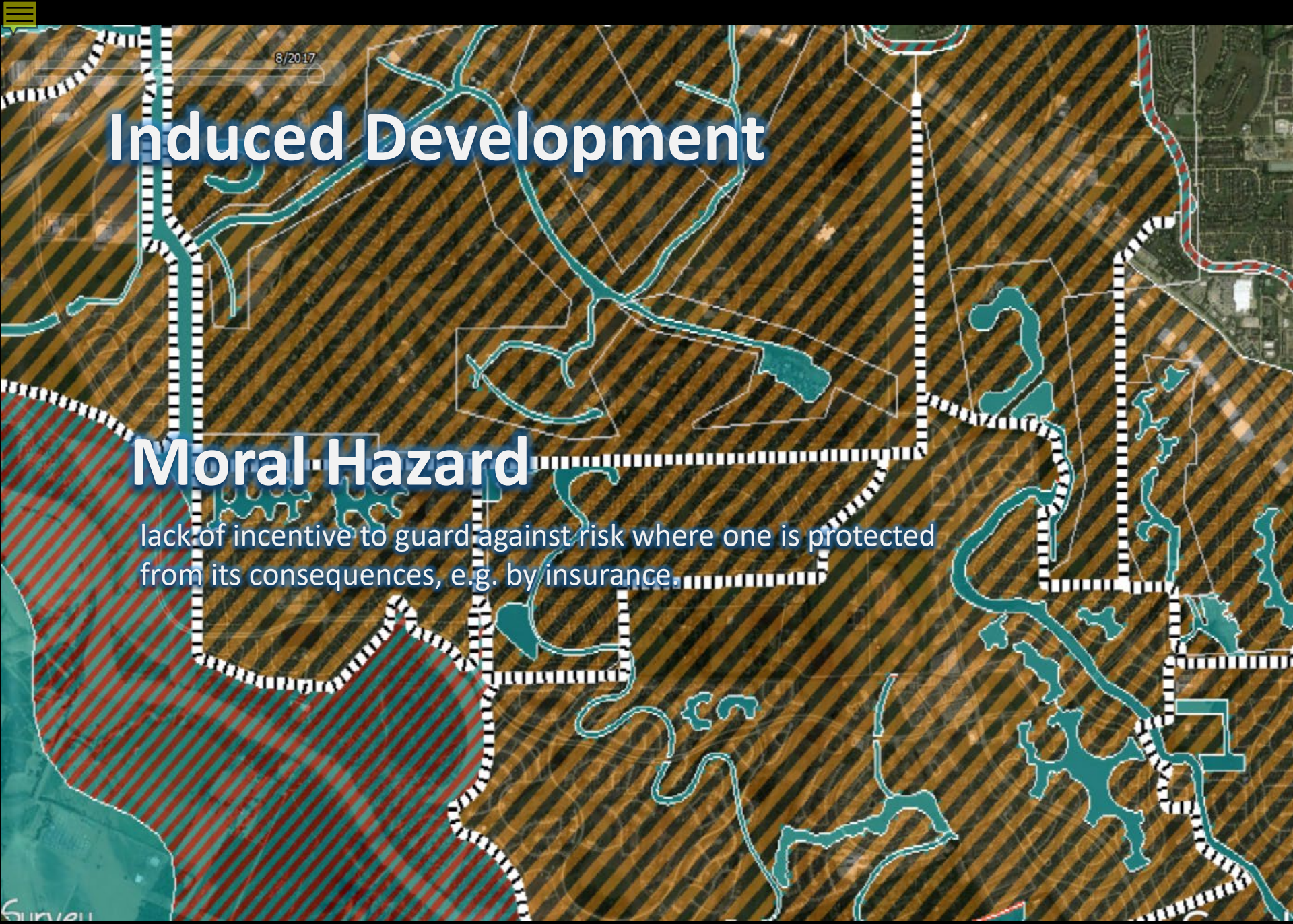

12/1944
Non-Structural
Structural
Survey
Image Texas General Land Office
Google Earth
1944
29°47'47.93" N 95°34'08.38" W elev 0 ft eye alt 28109 ft

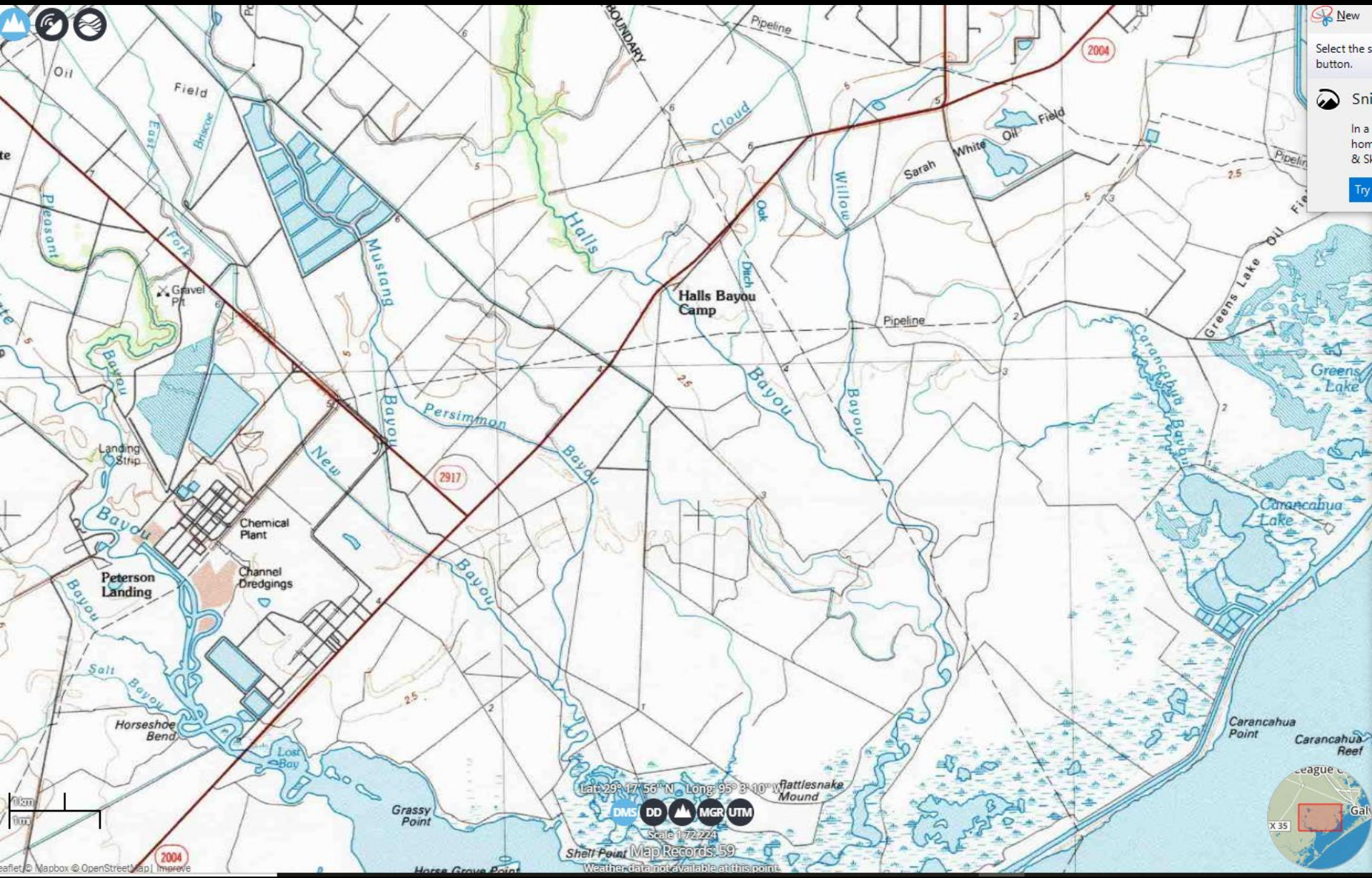

8/2017
N
Survey
1944
Google Earth
Imagery Date: 8/30/2017 29°46'34.22" N 95°36'49.28" W elev 0 ft eye alt 28109 ft


8/2017
Survey
1944
Google Earth
Imagery Date: 8/30/2017 29°46'34.22" N 95°36'49.28" W elev 0 ft eye alt 28109 ft

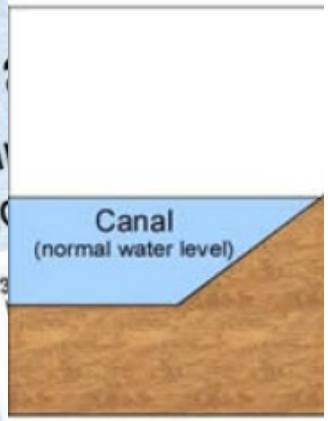

8/2017
DRAFT
Harvey Estimated
Maximum Riverine Inundation
Riverine flooding along gaged channels only. Does not include all HCFCD channels. Does not include information of flooding from other sources.
Survey
1944
HARRIS COUNTY FLOOD CONTROL DISTRICT
Google Earth
Imagery Date: 8/30/2017 29°46'34.22" N 95°36'49.28" W elev 0 ft eye alt 28109 ft

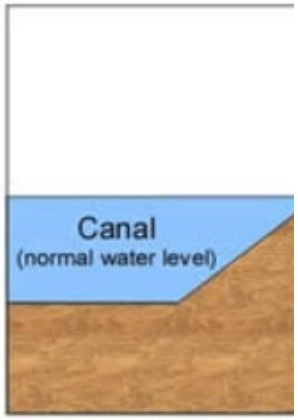

Fort Bend County Levee Districts
Buscar dirección o lugar
Leyenda
Fort Bend County Levees Districts (2018)
LJA Engineering, Inc
Costello, Inc
Century Engineering, Inc
Jones and Carter, Inc
Odyssey Engineering Group
Sherrington, Inc
LID 9
LID 27
LID 8
FG LID
LID 17
LID 10
MUD 131
LID 14
FG LID 8
MUD 44
Palmer Plantation MUD 02
LID 13
LID 25
MUD 43
LID 15
Sienna Plantation LID North
POWERED BY esri
Earthstar Geographics


8/2017
Induced Development
Moral Hazard
lack of incentive to guard against risk where one is protected from its consequences, e.g. by insurance.


Halls Bayou Camp
Peterson Landing
Chemical Plant
Channel Dredgings
Landing Strip
Gravel Pit
Halls Bayou
Mustang Bayou
New Bayou
Persimmon Bayou
Cloud Bayou
Willow Bayou
Oak Ditch
Pleasant Bayou
Salt Bayou
Lost Bay
Horseshoe Bend
Grassy Point
Shell Point
Rattlesnake Mound
Carancahua Bayou
Carancahua Lake
Greens Lake
Carancahua Point
Carancahua Reef
Greens Lake Oil Field
White Oil Field
Sarah
Pipeline
2004
2917
Lat: 29° 17' 56" N Long: 95° 3' 10" W
DMS DD MGR UTM
Scale 1:72,224
Map Records: 59
Weather data not available at this point.

Could it F





Risk Analysis
AN INTERNATIONAL JOURNAL
An Official Publication of the Society for Risk Analysis

Original Research Article

Improved Methods for Estimating Flood Depth Exceedances Within Storm Surge Protection Systems

David R. Johnson

First published: 12 October 2018 | https://doi.org/10.1111/risa.13213

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Abstract

Contemporary studies conducted by the U.S. Army Corps of Engineers estimate probability distributions of flooding on the interior of ring levee systems by estimating surge exceedances at points along levee system boundaries, calculating overtopping volumes generated by this surface, then passing the resulting volumes of water through a drainage model to calculate interior flood depths. This approach may not accurately represent the exceedance probability of flood depths within the system interior; a storm producing 100-year surge at one point is unlikely to simultaneously produce 100-year surge levels everywhere around the system exterior. A conceptually preferred approach estimates surge and waves associated with a large set of storms. Each storm is run through the interior model separately, and the resulting flood depths are weighted by a parameterized likelihood of each synthetic storm. This results in an empirical distribution of flood depths accounting for geospatial variation in any individual storm's characteristics. This method can also better account for the probability of levee breaches or other system failures. The two methods can produce different estimates of flood depth exceedances and damage when applied to storm surge flooding in coastal Louisiana. Even differences in flood depth exceedances of less than 0.2 m can still produce large differences in projected damage. This article identifies and discusses differences in estimated flood depths and damage produced by each method within multiple Louisiana protection systems. The novel coupled dynamics approach represents a step toward enabling risk-based design standards.

Are there alt

Journal of Infrastructure Systems / Volume 24 Issue 2 - June 2018

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Fragility and Resilience Indicators for Portfolio of Oil Storage Tanks Subjected to Hurricanes

Sabarethinam Kameshwar, A.M.ASCE; and Jamie E. Padgett, A.M.ASCE

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Abstract

This paper develops fragility functions and estimates of resilience indicators for aboveground storage tanks (ASTs) subjected to hurricanes, which can be efficiently applied to all the tanks in a regional portfolio of ASTs to assess their hurricane performance. Fragility and resilience assessment of a portfolio of ASTs is essential for planning mitigation strategies at the regional level and at the level of individual structures. Recently, studies have started assessing the fragility of ASTs under hurricane loads; most of the existing studies are focused on a specific AST type and a specific hurricane-related hazard. However, in order to facilitate performance assessment of an entire portfolio of ASTs, fragility functions for different types of tanks and hazards are necessary, which are lacking in the literature. Furthermore, estimates for resilience indicators such as repair costs and downtime are also not available in the literature. Therefore, to address these gaps,

...Barges and oil tankers ...posed pipe rise hundreds of feet above a ...of the coastal plain between Houston and Galveston will ...ain is flatter than a regulation pool table. But if you can get up high enough you'll see trains and ships and trucks moving ceaselessly from dock to dock, terminal to terminal.

The vehicles carry the chemicals and oil for your car, your clothes, your hair gel and your eyeliner, your kid's soccer ball and your mother's hospital IV. And the entire system is sitting in the path of some future hurricane.

Structural versus Non-structural