Dickinson Bayou
WATERSHED PARTNERSHIP

February 17, 2011

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Texas Coastal Watershed Program
Texas AgriLife Extension Service/Texas Sea Grant
Texas A&M University System

Dickinson Bayou Watershed Partnership Background

Dickinson Bayou
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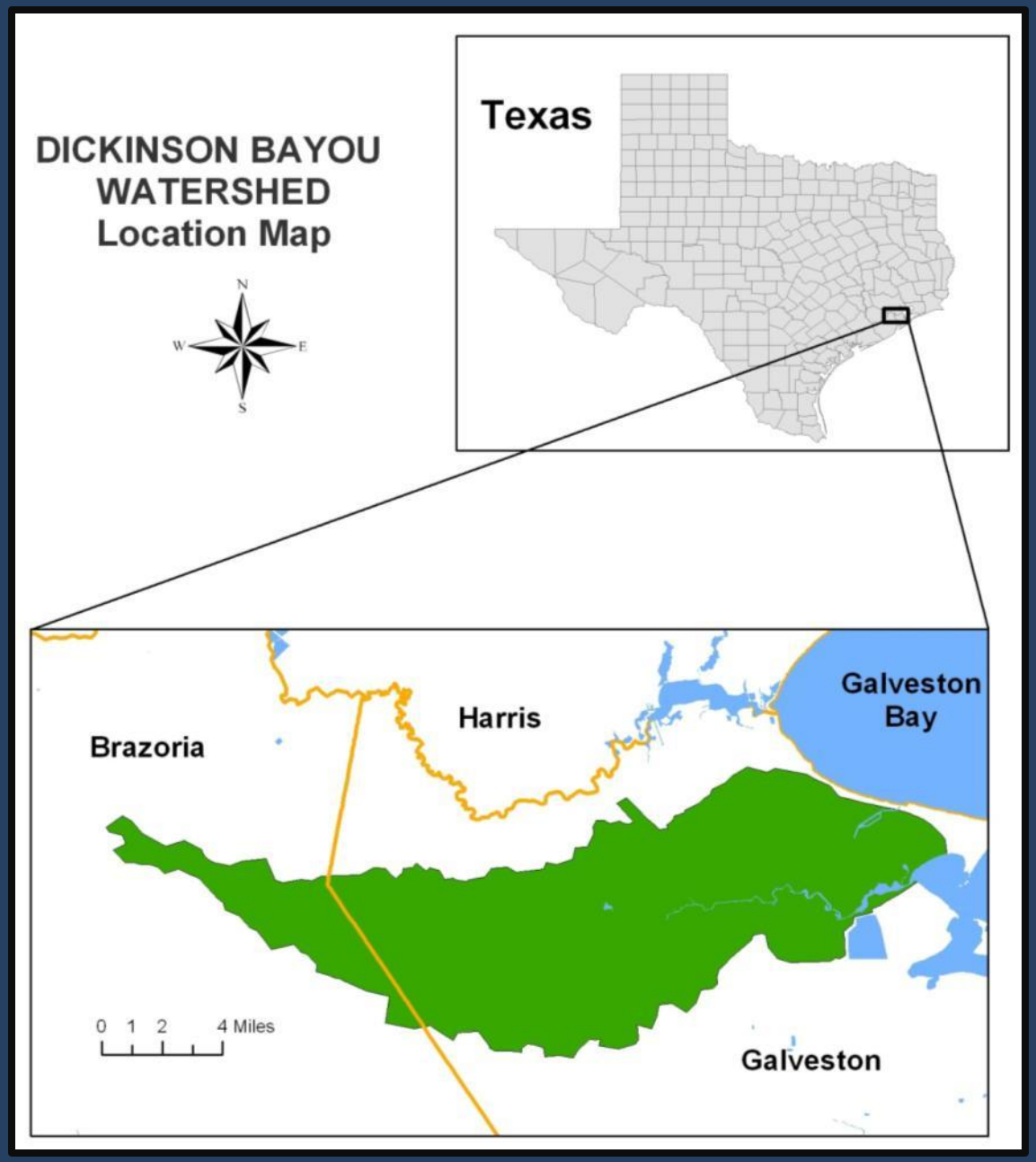

- ~100 square miles
- Portions of 9 cities
  - Dickinson
  - League City
  - Texas City
  - Santa Fe
  - Alvin
  - Manvel
  - Friendswood
  - Kemah
  - San Leon
- 2 counties
  - Galveston
  - Brazoria
- 75,000+ people.

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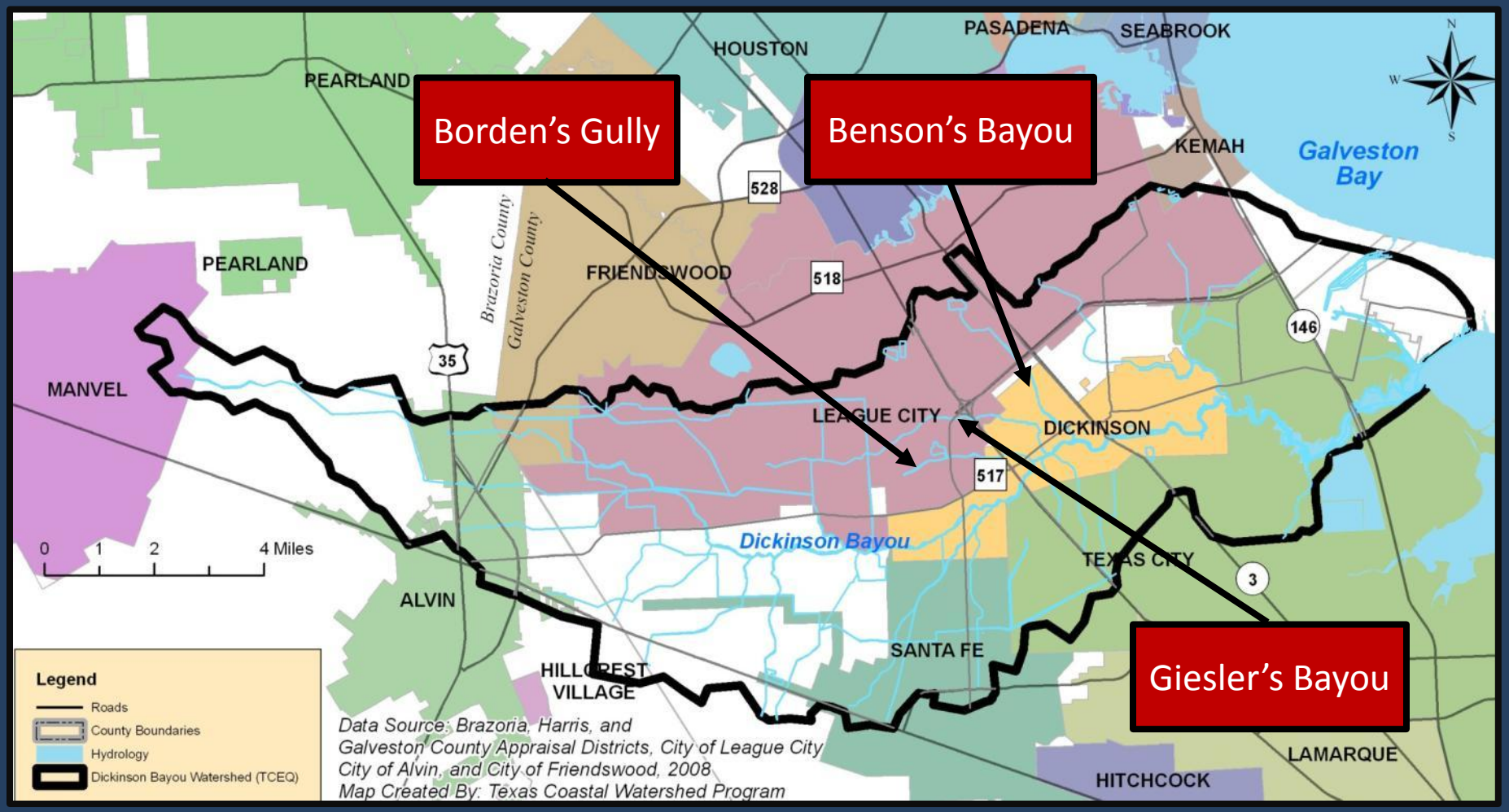

Dickinson Bayou & Three Tidal Tributaries:
Benson's Bayou, Borden's Gully and Giesler Bayou.

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What is a Bacteria Total Maximum Daily Load (TMDL)

- **Budget**
  - Bacteria
  - Water quality standards
- **Indicator bacteria**
  - What are they?
  - What are they used for?

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Indicator Bacteria

- **What are they?**
  - Fecal bacteria - intestines of warm-blooded species
  - Heightened risk of other harmful microbes in the water body
- **What are they used for?**
  - Determine the safety of contact recreation

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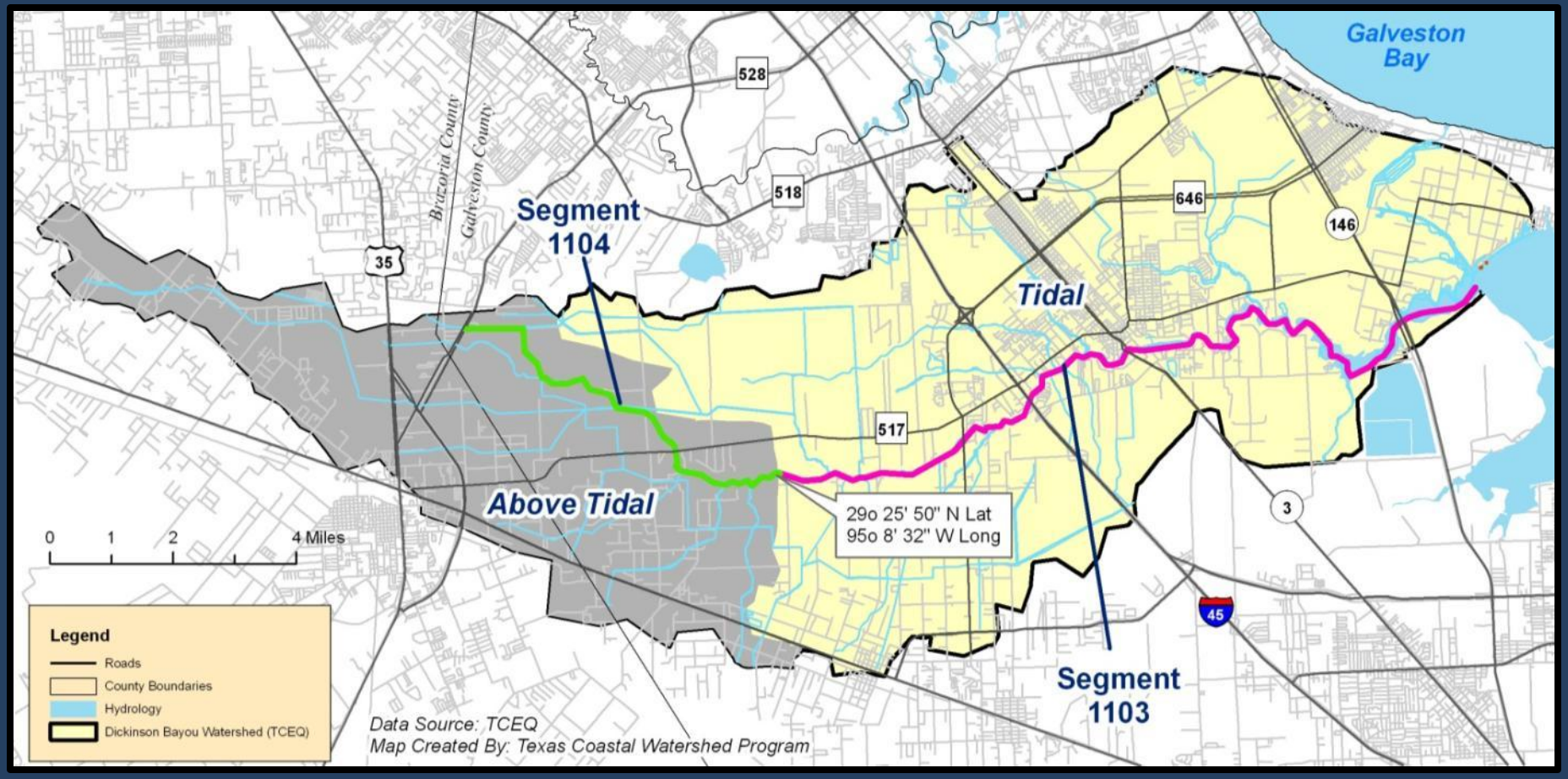

Indicator Bacteria

Above-Tidal
E.coli

Tidal
Enterococci

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Identified Sources of Impairment

- ❑ Waste Water Treatment Facilities
- ❑ Stormwater
- ❑ On-Site Sewage Facilities (Septic Systems)
- ❑ Animal Sources

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Implementation Plan (I-Plan)

- ❑ What is an I-Plan?
- ❑ What is the difference in an I-Plan and a WPP?
- ❑ Why does Dickinson Bayou need an I-Plan?

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What is an I-Plan?

Local Solution to a Local Problem

- Written plan outlining actions necessary to improve water quality based on an approved TMDL document.
- Assigns responsibility for each portion of the plan.
- I-Plans have a regulatory component enforceable by state, federal and local agencies responsible for managing natural resources.
- Stakeholder driven.

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I-Plan vs. WPP

- Implementation Plans (I-Plan)
  - Remedial actions for impaired waters
  - Based on TMDL
- Watershed Protection Plan (WPP)
  - Remedial or preventative
  - May use TMDL or other measurable goals for water quality

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Why does Dickinson Bayou Need an I-Plan?

- Water quality is not meeting standards for contact recreation.
- Remedial actions are needed to improve the water quality.
- I-Plans set measurable goals and designate responsibility.

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Where are we and where are we going?

- Dickinson Bayou Watershed Partnership Advisory Committee Meeting – November 2010
- Bacteria Workgroup Meeting – Entities who manage the resources – December 2010
- Dickinson Bayou Watershed Partnership Meeting – February 2010
- Begin Workgroup Meetings **(next week)**
- Start drafting portions of the plan – Public/Workgroup

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Projected Time Line

- Workgroup Meetings – February 2011 - ??
- Draft Components – June 2011
- Final Plan – August 2011

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Workgroup Meetings

On-Site Sewage Facilities

Texas Coastal Watershed Program
1250 Bay Area Blvd, Suite C.
Houston, Texas 77058
February 15, 2011
10:00 AM – 12 PM

Stormwater

Amegy Bank Building
305 East Main – Land Management
2nd Floor Conference Room
League City, Texas 77573
February 15, 2011
2:30 – 4:30 PM

Animal Sources

Galveston County Extension Office
5115 Highway 3.
Dickinson, Texas 77539
February 17, 2011
9:00 – 11:00 AM

Waste Water Treatment Facilities

League City - Civic Center
400 West Walker
League City, Texas 77573
February 17, 2011
2:30 – 5:00 PM

These dates are listed on your agenda.

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Public Participation

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Break Out Groups

Purpose – To gather input to take to the workgroups.

- ❑ Discuss the dot exercise topics provided and add anything that you think might have been left off.
- ❑ Groups will report back to the partnership additional topics they have identified.

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Information Gathering Dot Exercise

After the breakout groups:

- For each topic, a list of probable sources (including the new suggestions) will be placed on the wall using large sheets of paper.
- Each stakeholder will mark the **THREE (3)** sources, using colored dot stickers, they think most affect the bacteria levels in the bayou.
- **Only one sticker can be placed on one source.**
- In the center column, the sources will be listed.
- Each stakeholder will then indicate the sources that they feel are the easiest to correct using **three additional stickers**.
- Each stakeholder will have one black dot sticker to place on the one broad category they feel is most problematic. (WWTF, OSSF, Stormwater, Animal Sources).
- After this exercise, the moderators will count each station and the information will be presented to the partnership.

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Divide into groups

- Four (4) Groups with a facilitator at each. **(Identify)**
- Groups are identified by the letter in the bottom right hand corner of your agenda.

Let's Get Started!

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Which sources do you think most affect bacteria levels in Dickinson Bayou?	Waste Water Treatment Facilities	Which source do you think is easiest to correct?
15	Broken pipes leading to the facilities	12
2	Malfunctioning lift stations	5
14	Rain causing facility overflow	0
5	Effluent discharge from facility not meeting standards	10
3	Power failures that interrupt normal operations	4
0	Location of effluent discharge points	1
5	Unstaffed package facilities	9
0	Staffed regional facilities	1
0	No opinion	1

Which sources do you think most affect bacteria levels in Dickinson Bayou?	**On-Site Sewage Facilities (Septic Systems)**	Which source do you think is easiest to correct?
16	Old systems installed with outdated practices	10
1	Improperly designed systems	1
1	Malfunctioning aerobic systems	8
2	Malfunctioning conventional systems	15
13	Improper systems installed on problem soils	1
16	Poorly maintained systems	14
	No opinion	

Which sources do you think most affect bacteria levels in Dickinson Bayou?	STORMWATER	Which source do you think is easiest to correct?
2	Permitted stormwater (MS4 permits)	5
10	Non-permitted stormwater	5
6	Road and parking lot runoff	11
1	Cropland runoff	3
2	Rangeland runoff	0
10	Home and lawn runoff	3
11	Illicit discharges into storm drains (Restaurants, WWTFs, on-site sewage facilities)	12
	No opinion	
3	Lack of veg. buffer	1
3	Leaf / grass	3

Which sources do you think most affect bacteria levels in Dickinson Bayou?	ANIMAL SOURCES	Which source do you think is easiest to correct?
11	**Dog and cat waste**	7
16	**Livestock waste** (Horses, cattle, donkeys, goats, sheep, etc.)	11
8	**Poultry waste** (Chicken, ducks, geese, turkeys, etc)	8
0	**Wildlife waste** (Deer, rabbits, raccoons, opossums, etc)	0
5	**Migratory bird waste** (Wild geese, wild ducks, grackles, song birds, etc.)	0
2	**Exotic animal waste** (Feral hogs, Muscovy ducks, zebras, giraffes etc.)	11
2	**No opinion**	2

Across Category Results

Wastewater Treatment Facilities	1	Stormwater	2
Animal Sources	0	On-Site Sewage Facilities	15

Workgroup Meetings

On-Site Sewage Facilities

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TEXAS COASTAL WATERSHED PROGRAM

Sea Grant Texas

AgriLIFE EXTENSION Texas A&M System

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TCEQ