

TWDB Data Visualization: Clear Information, Clear Benefits

Sam Marie Hermitte

Texas Water Development Board*

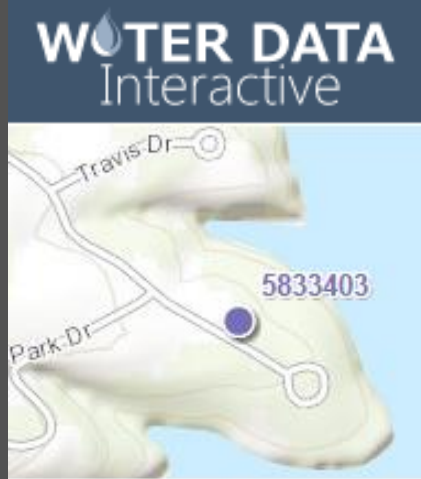
2018 WSWC Water Information Management Systems Workshop

Pasadena, CA

January 18, 2018

***Unless specifically noted, this presentation does not necessarily reflect
official board positions or decisions.**

Visualization: We dig it!



Water Data
for Texas



Groundwater Data Interactive

WATER DATA
Interactive

Groundwater ▾ Layers ▾ Base Maps ▾

Map Controls:

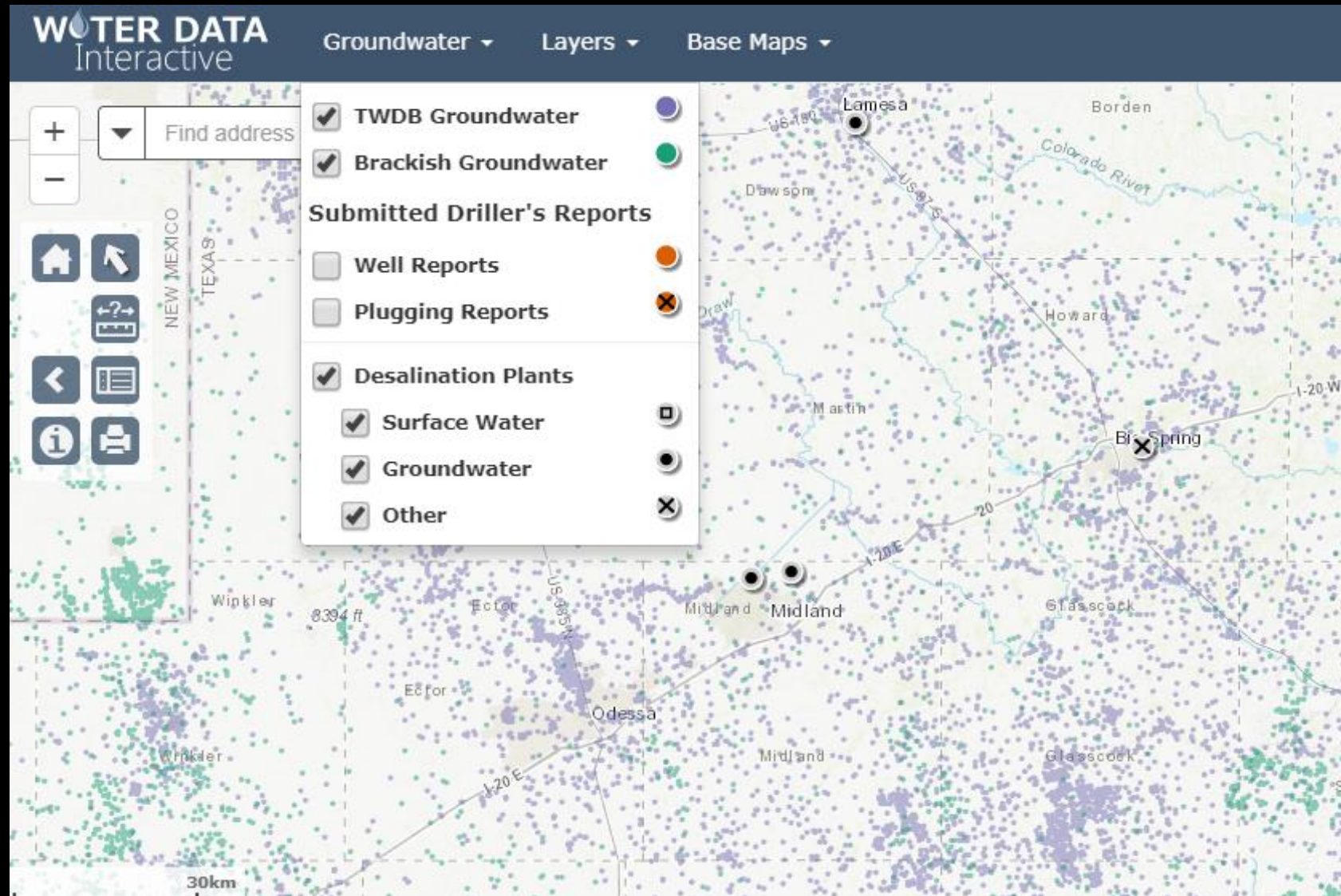
- Zoom: +, -
- Find address or place:
- Home:
- Full Screen:
- Previous View:
- Next View:
- Layers:
- Print:

Map Labels: ARIZONA, Tonto National Forest, Phoenix, Gila, Tucson, Gila National Forest, Apache National Forest, FRANCISCO PLATEAU, RIO GRANDE, Rio Ya.

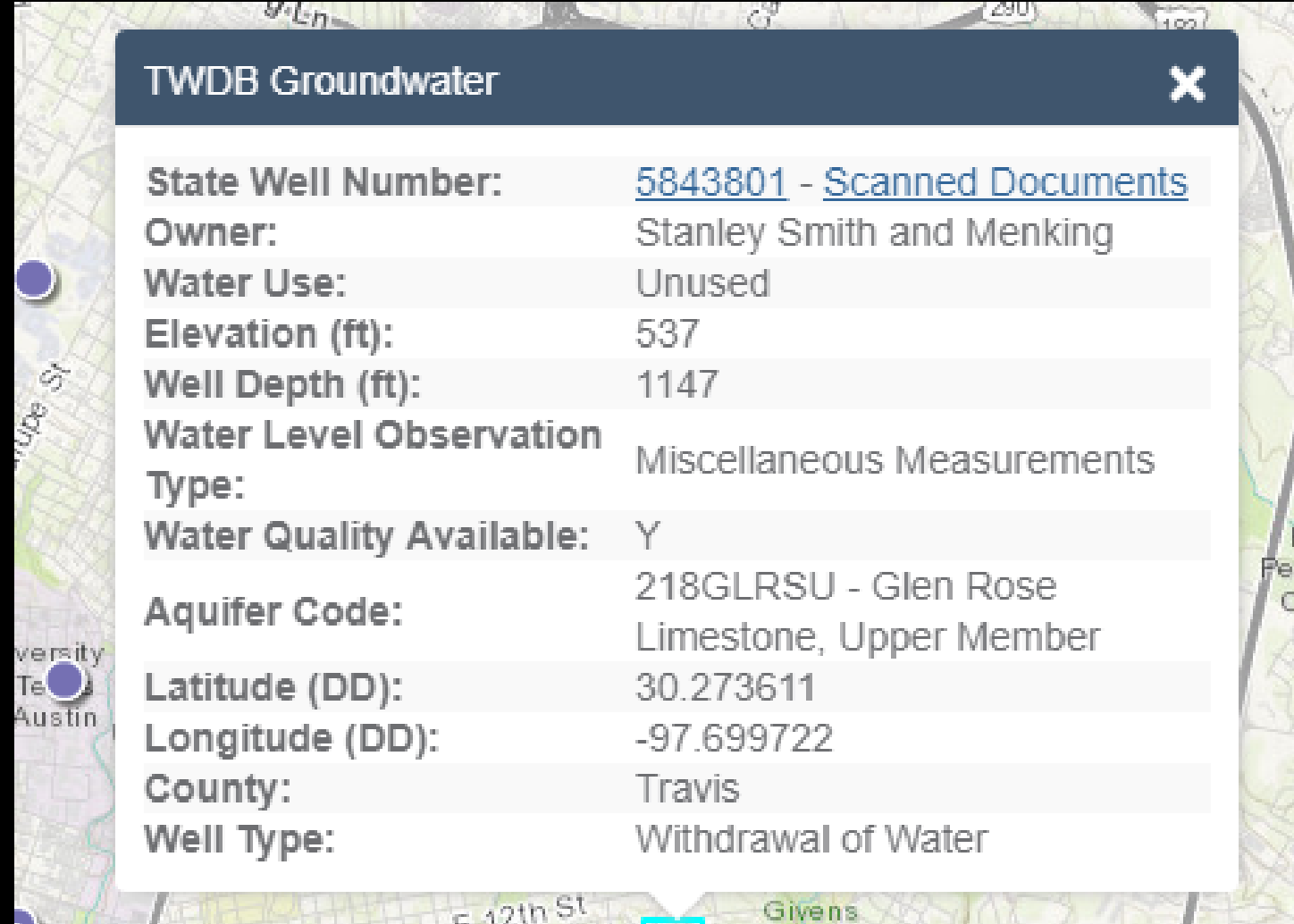
Legend:

- ☐ Geologic Units
- ☐ Major Aquifers
- ☐ Minor Aquifers
- ☐ BRACS Study Areas
- ☐ Regional Water Planning Areas
- ☐ Groundwater Management Areas
- ☐ Groundwater Conservation Districts
- ☐ River Basins
- ☐ Texas Counties
- ☐ 7.5' USGS Grid
- ☐ 2.5' State Grid

Groundwater Data Interactive



Groundwater Data Interactive



The screenshot shows a map of Austin, Texas, with a pop-up window titled "TWDB Groundwater". The window contains the following data:

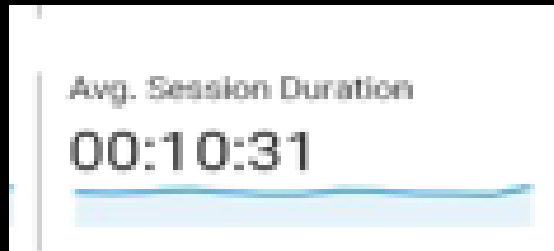
State Well Number:	5843801 - Scanned Documents
Owner:	Stanley Smith and Menking
Water Use:	Unused
Elevation (ft):	537
Well Depth (ft):	1147
Water Level Observation Type:	Miscellaneous Measurements
Water Quality Available:	Y
Aquifer Code:	218GLRSU - Glen Rose Limestone, Upper Member
Latitude (DD):	30.273611
Longitude (DD):	-97.699722
County:	Travis
Well Type:	Withdrawal of Water

The background map shows a street grid with labels for "University", "Te", "Austin", "E 12th St", and "Givens".

Groundwater Data Interactive

INCREASE IN USE, 2016-2017

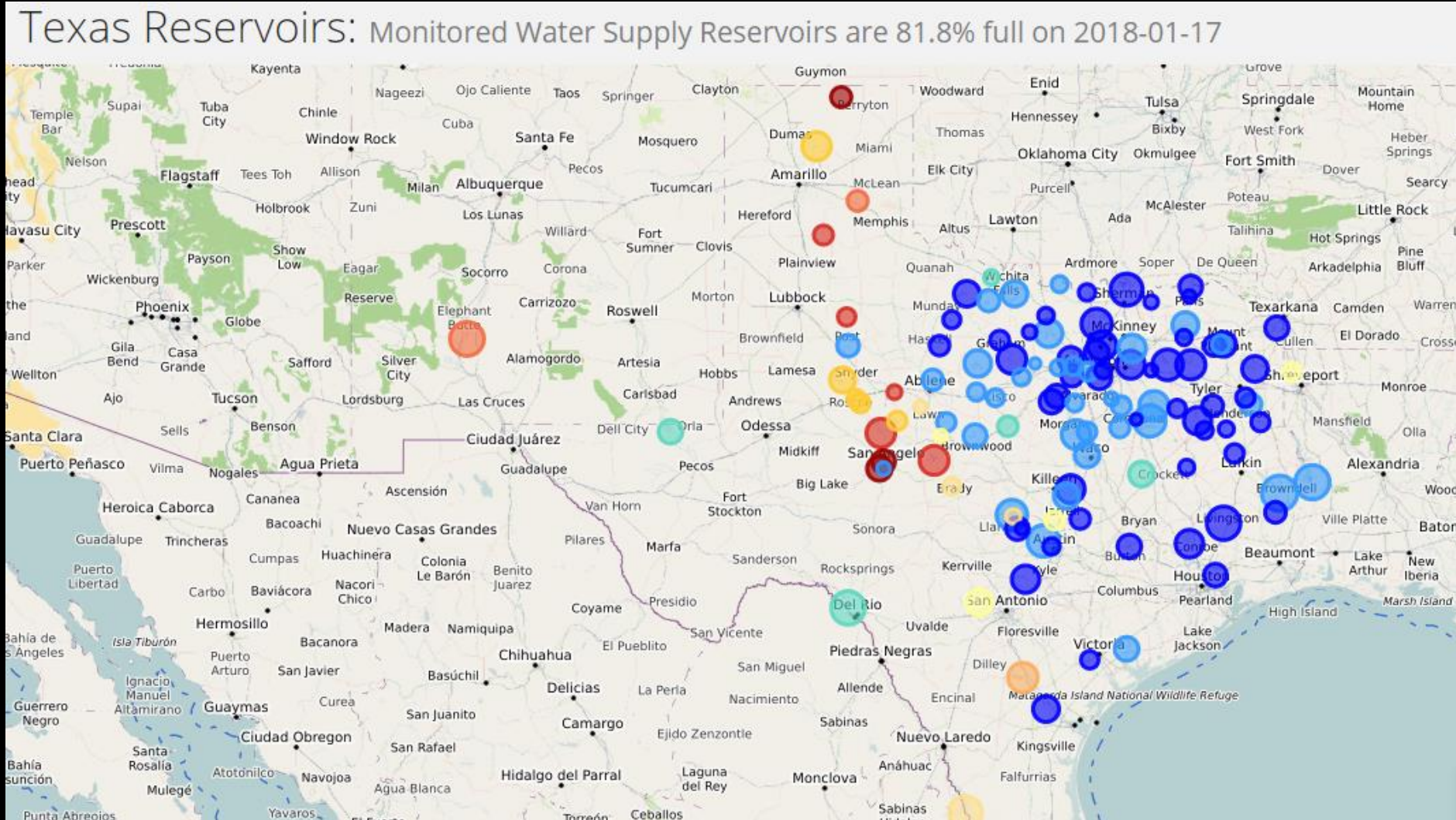
- 28.32% system use
 - 23% iOS
 - 61% Android



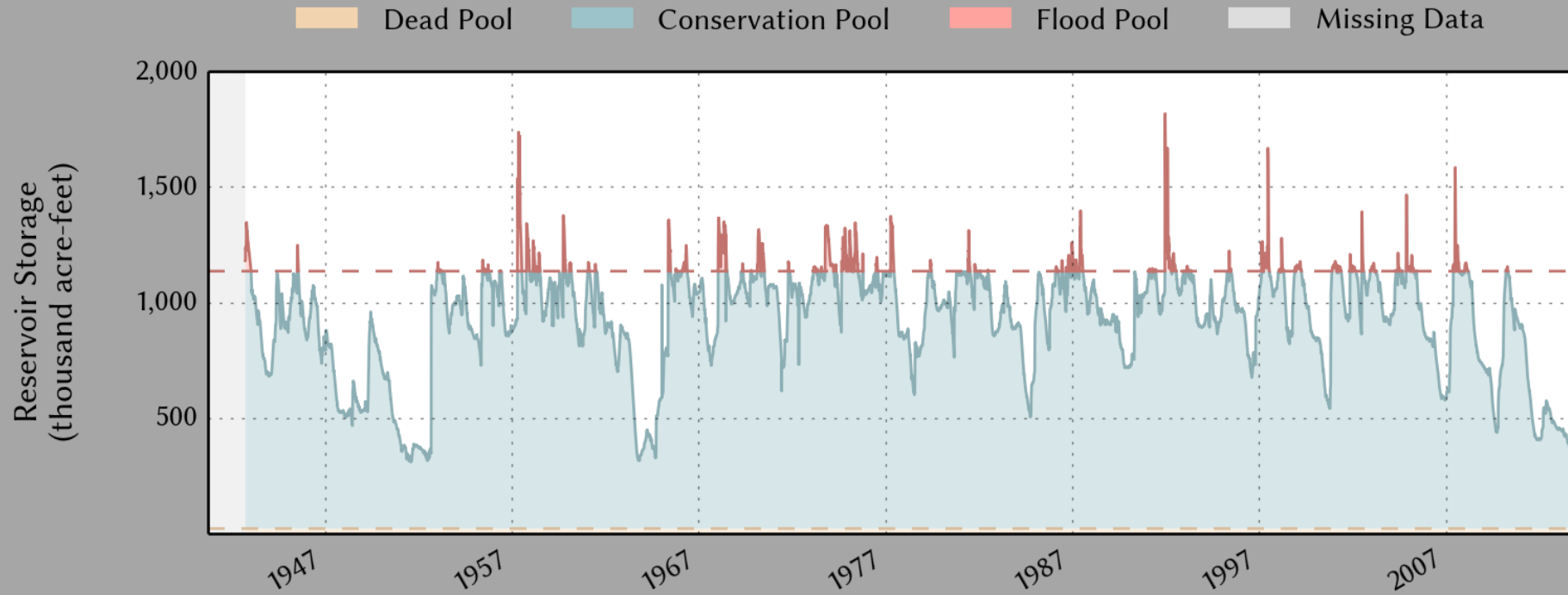
KNOWN USERS

- Realtors
- City/County staff
- Other state agencies
- Federal agencies
- Private well owners
- Water supply companies
- Consultants
- Drillers
- Oil/Gas companies
- Students

Water Data for Texas



Lake Travis



31% full
October 3, 2013

Water Data for Texas

Water Weekly

For the week of 01/08/18

Water conditions

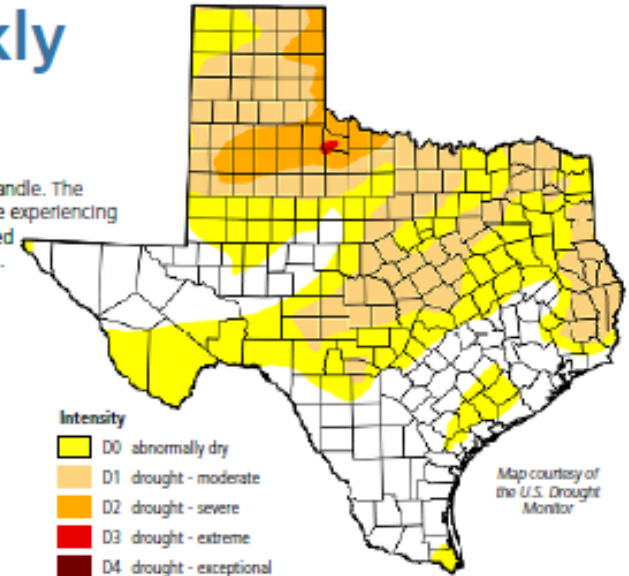
Drought continues to intensify in the Panhandle. The number of counties in that part of the state experiencing at least some area of severe drought jumped from 15 the previous week to 28 last week. About one third of the state remains impacted by moderate or worse drought.

Drought conditions

- 34% now
- 33% a week ago
- 2% three months ago
- 6% a year ago

Intensity

- D0 abnormally dry
- D1 drought - moderate
- D2 drought - severe
- D3 drought - extreme
- D4 drought - exceptional

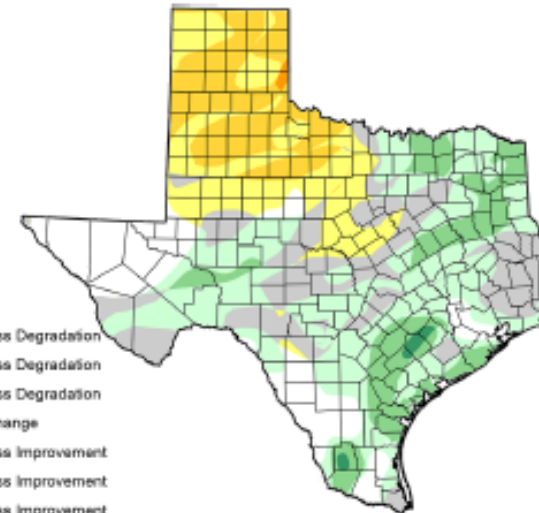


Map courtesy of
the U.S. Drought
Monitor

Drought change in last month

In the last month, the epicenter of drought moved from East Texas to the Panhandle. Many areas in East Texas improved two drought categories in that time while many areas in the Panhandle degraded by two drought categories.

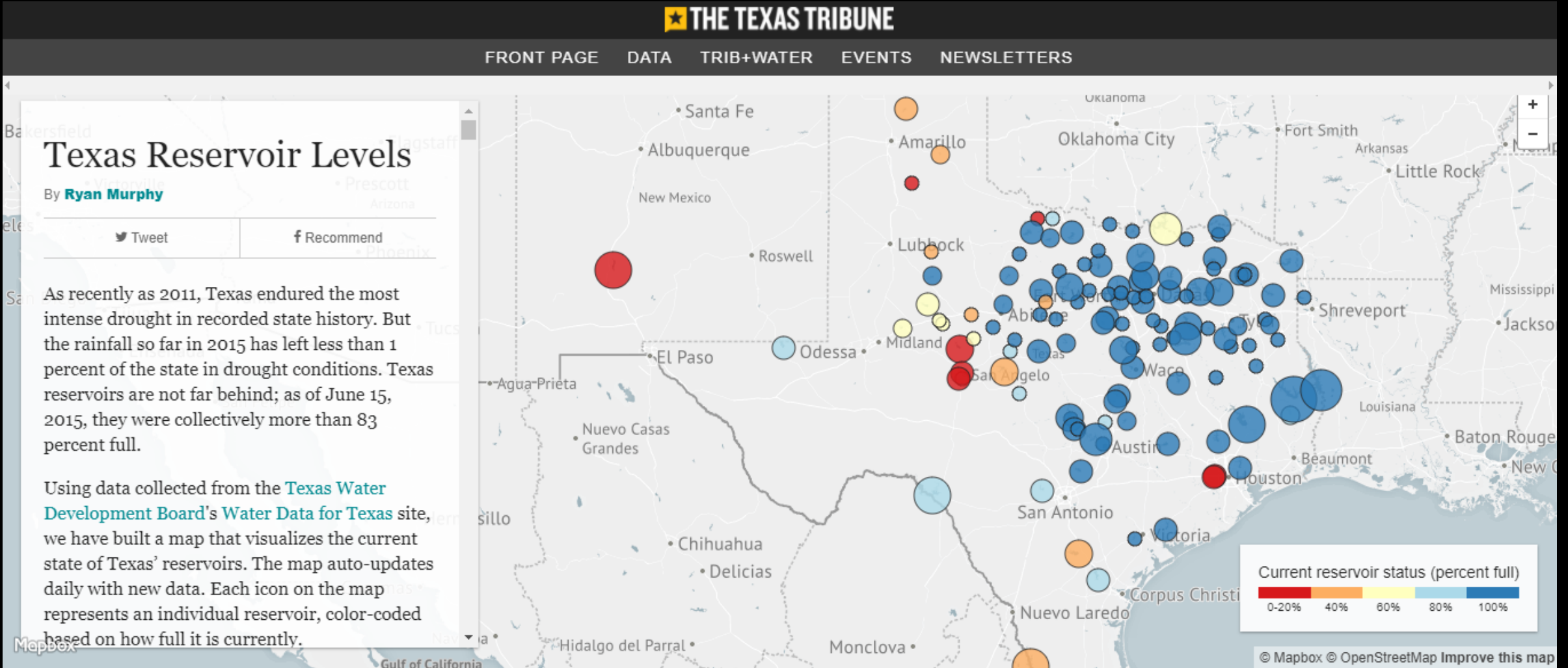
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement



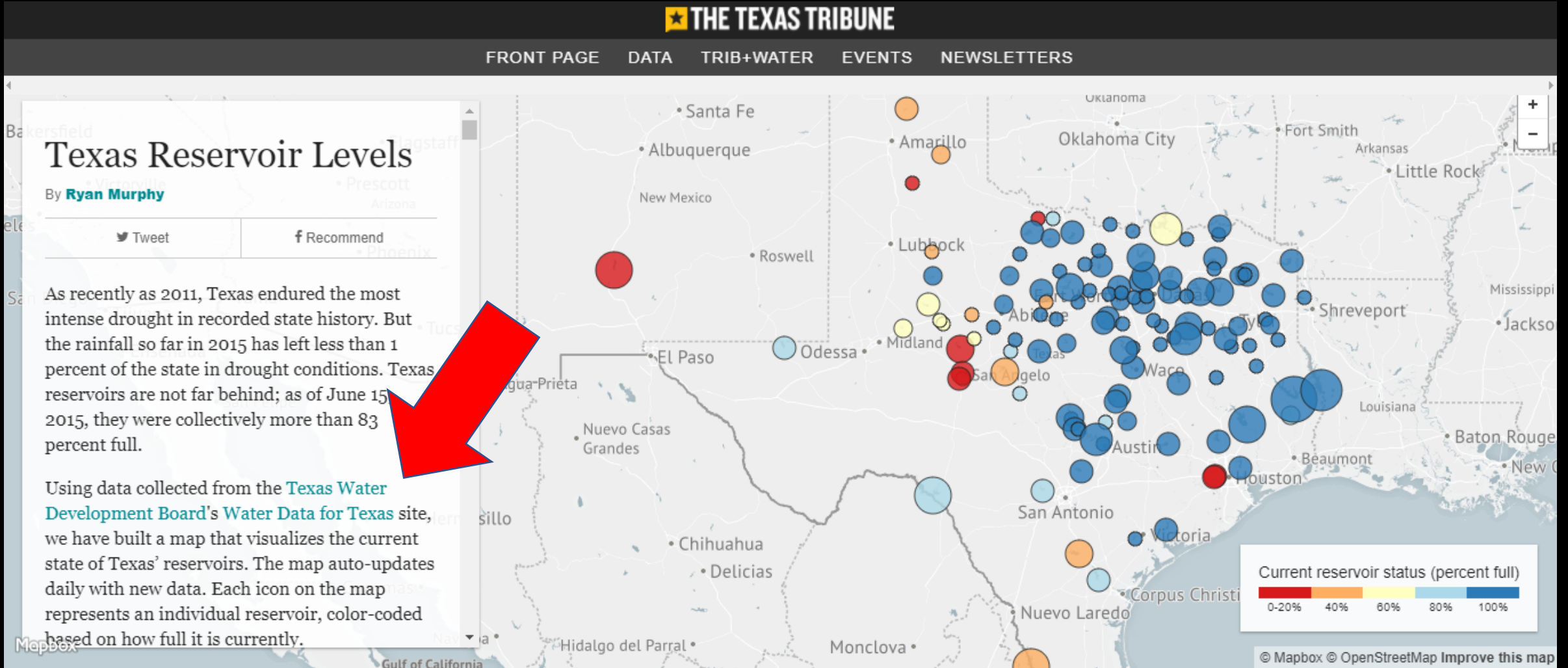
Map courtesy of National
Drought Mitigation Center

Written by Dr. Mark Wentzel — Dr. Mark Wentzel is a hydrologist in the TWDB's Office of Water Science and Conservation.

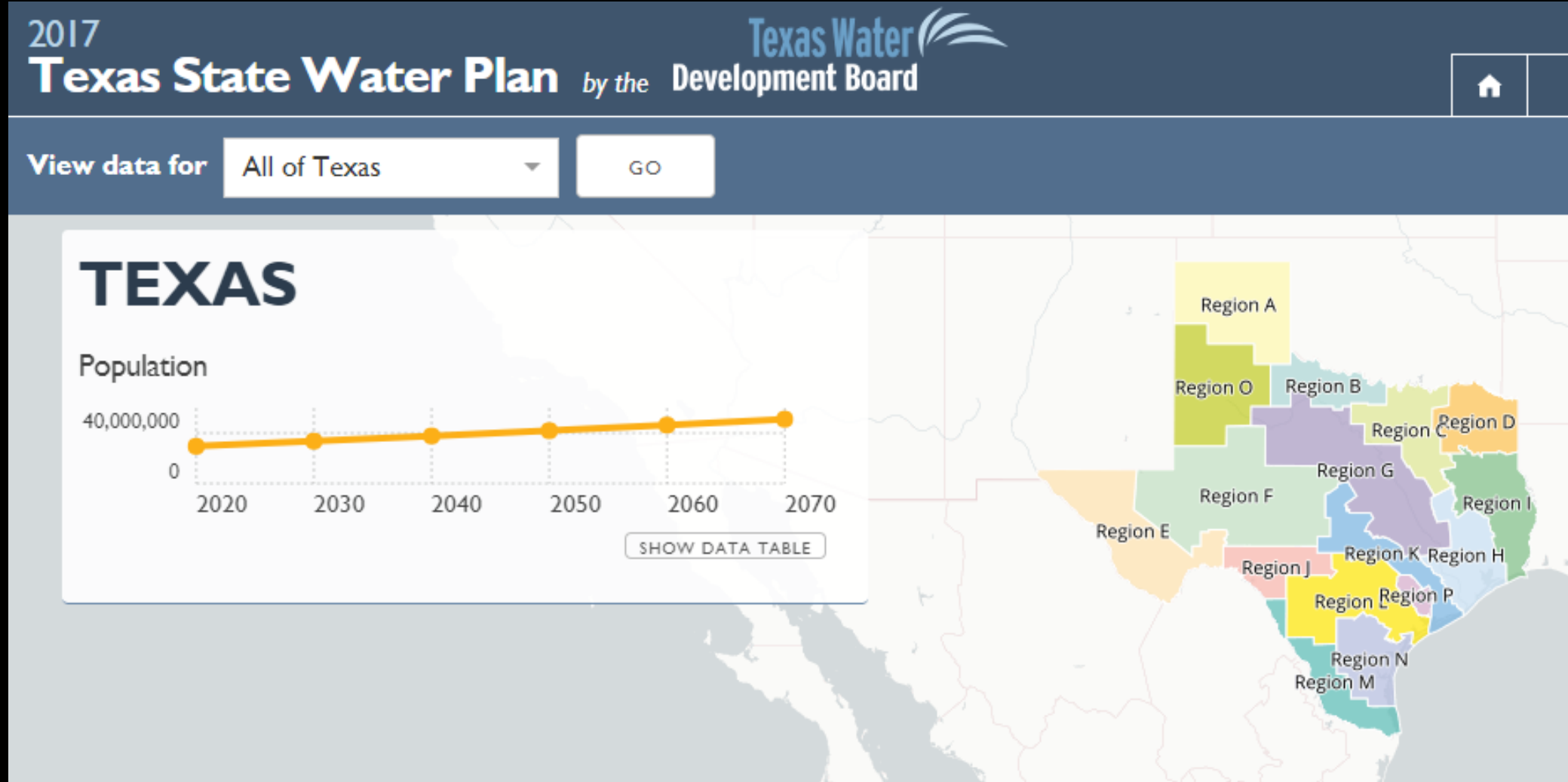
Water Data for Texas



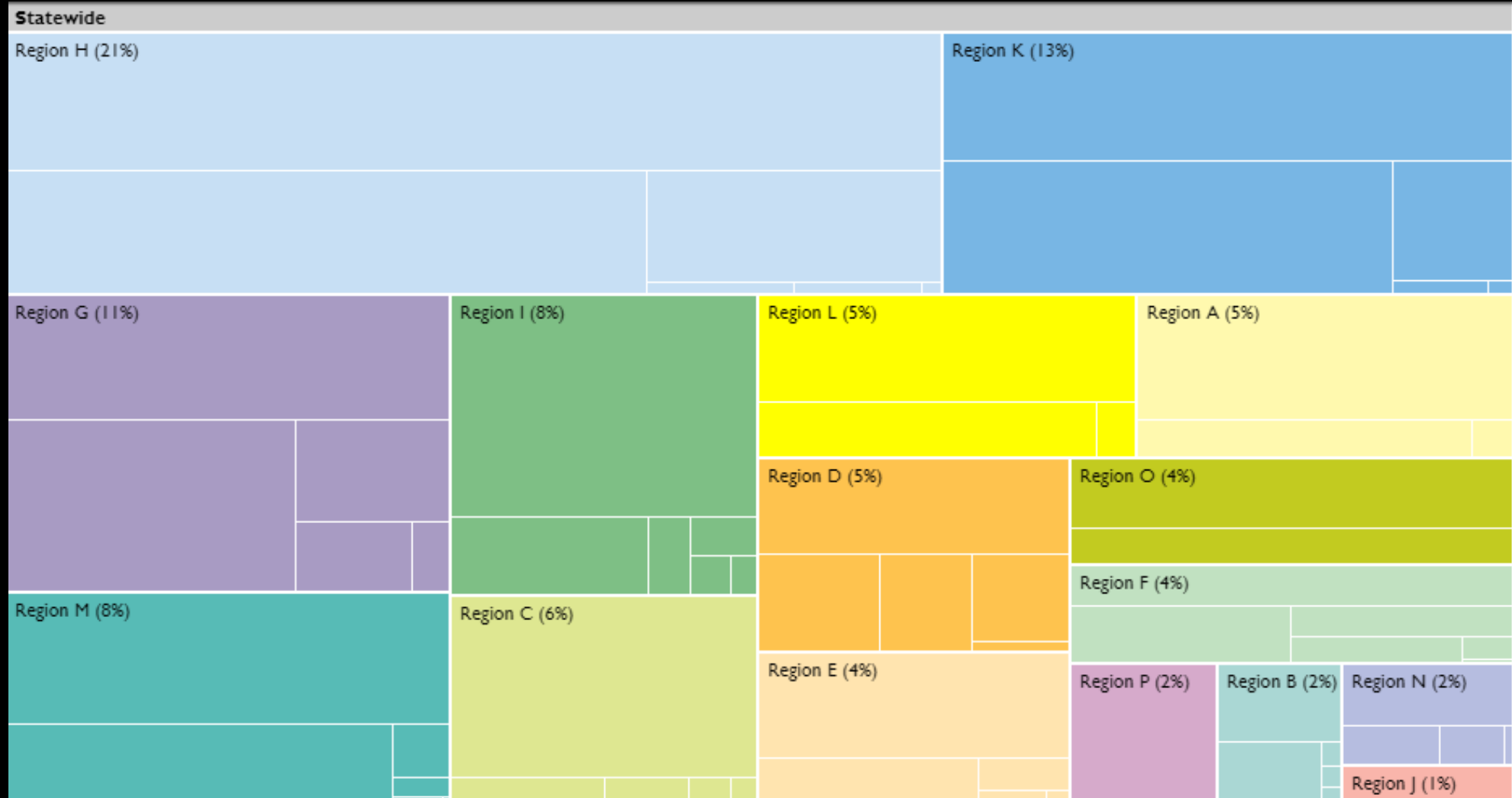
Water Data for Texas



Interactive State Water Plan



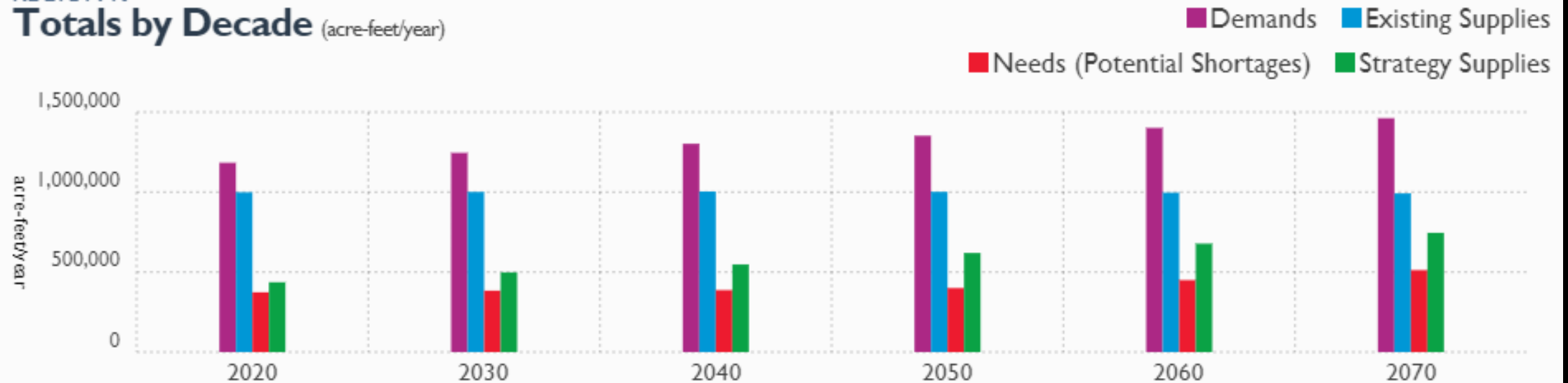
Interactive State Water Plan



Interactive State Water Plan

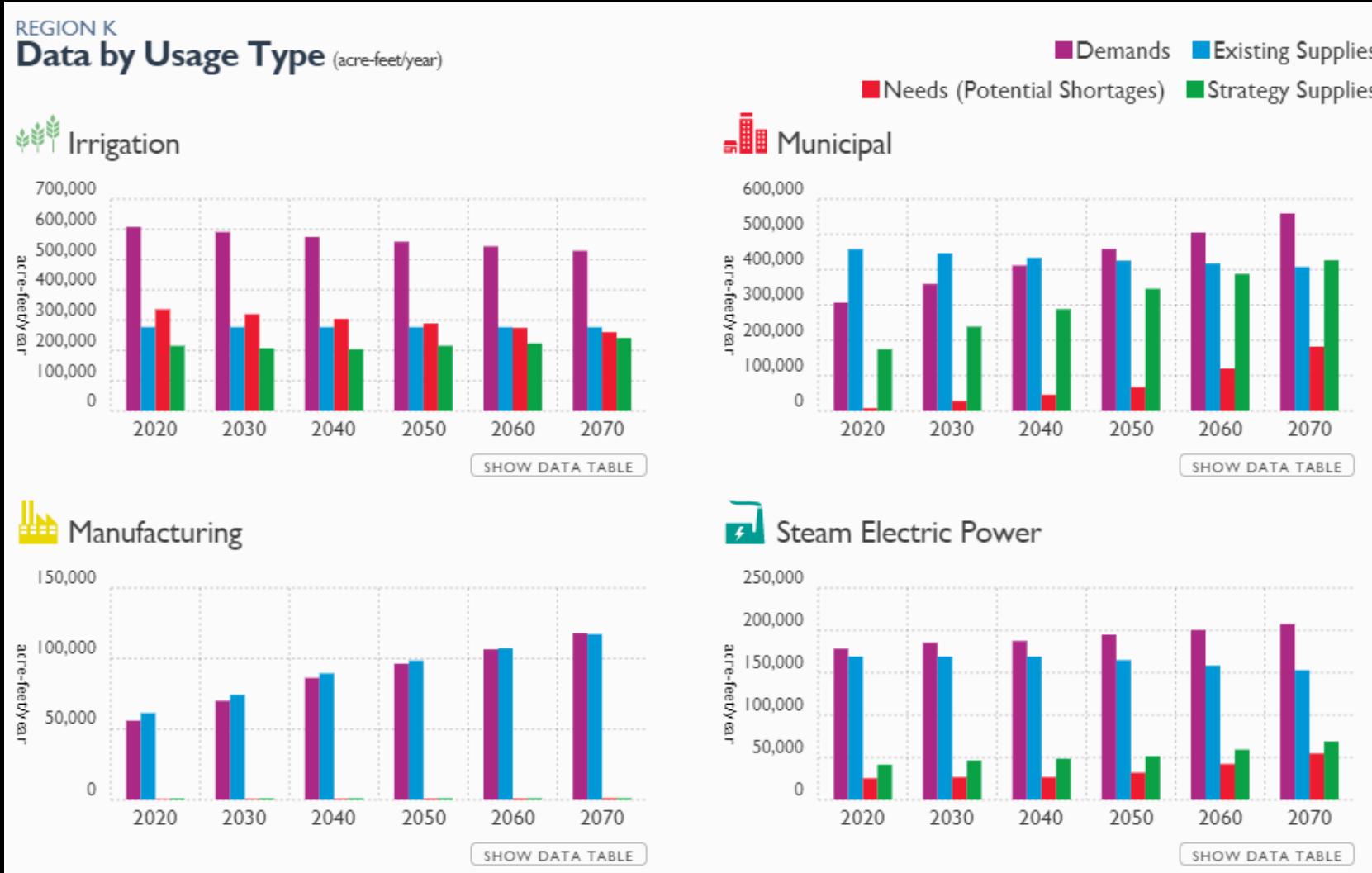
REGION K

Totals by Decade (acre-feet/year)



	2020	2030	2040	2050	2060	2070
Demands	1,183,325	1,245,335	1,301,963	1,352,231	1,401,321	1,461,807
Existing Supplies	998,867	1,000,960	1,003,758	1,001,689	996,571	991,929
Needs (Potential Shortages)	373,563	383,821	387,321	400,009	449,699	512,304
Strategy Supplies	436,423	498,166	547,422	619,498	678,062	745,317

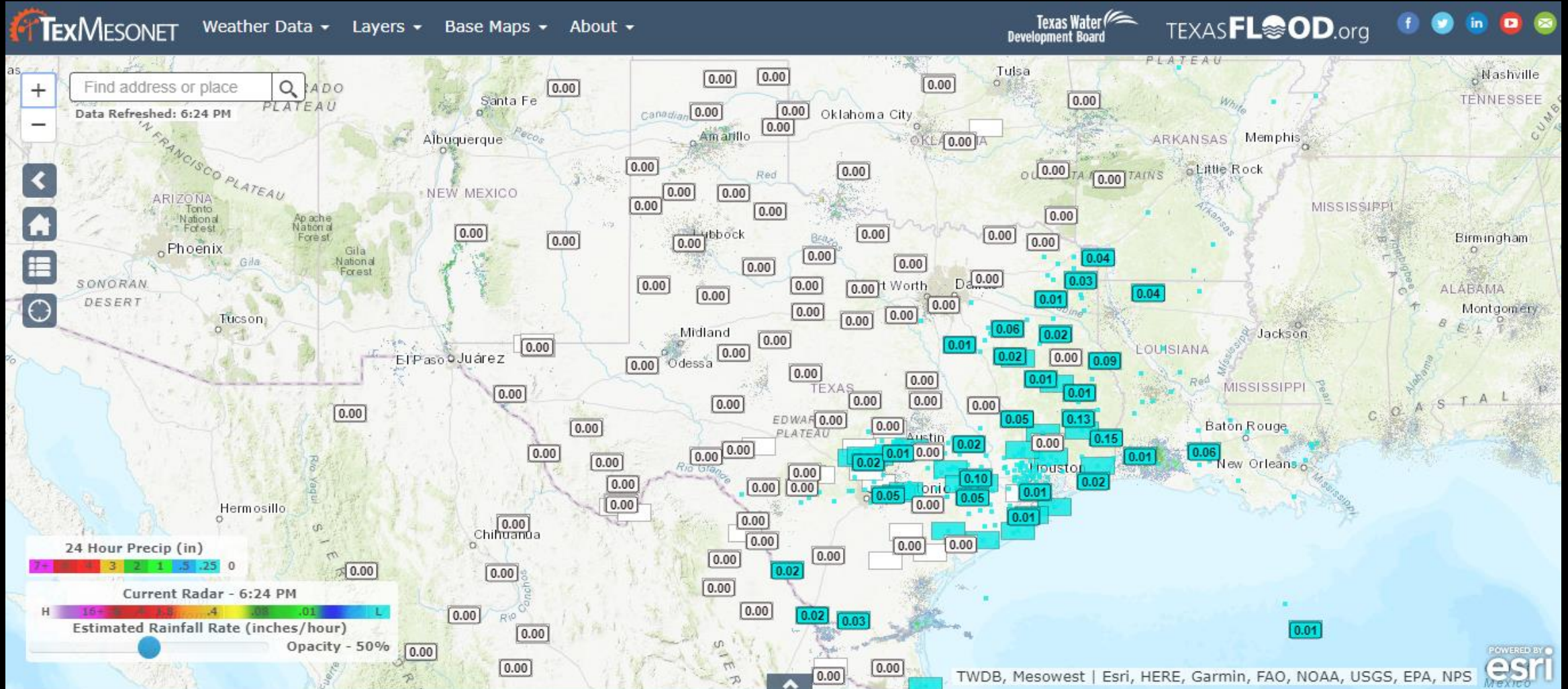
Interactive State Water Plan



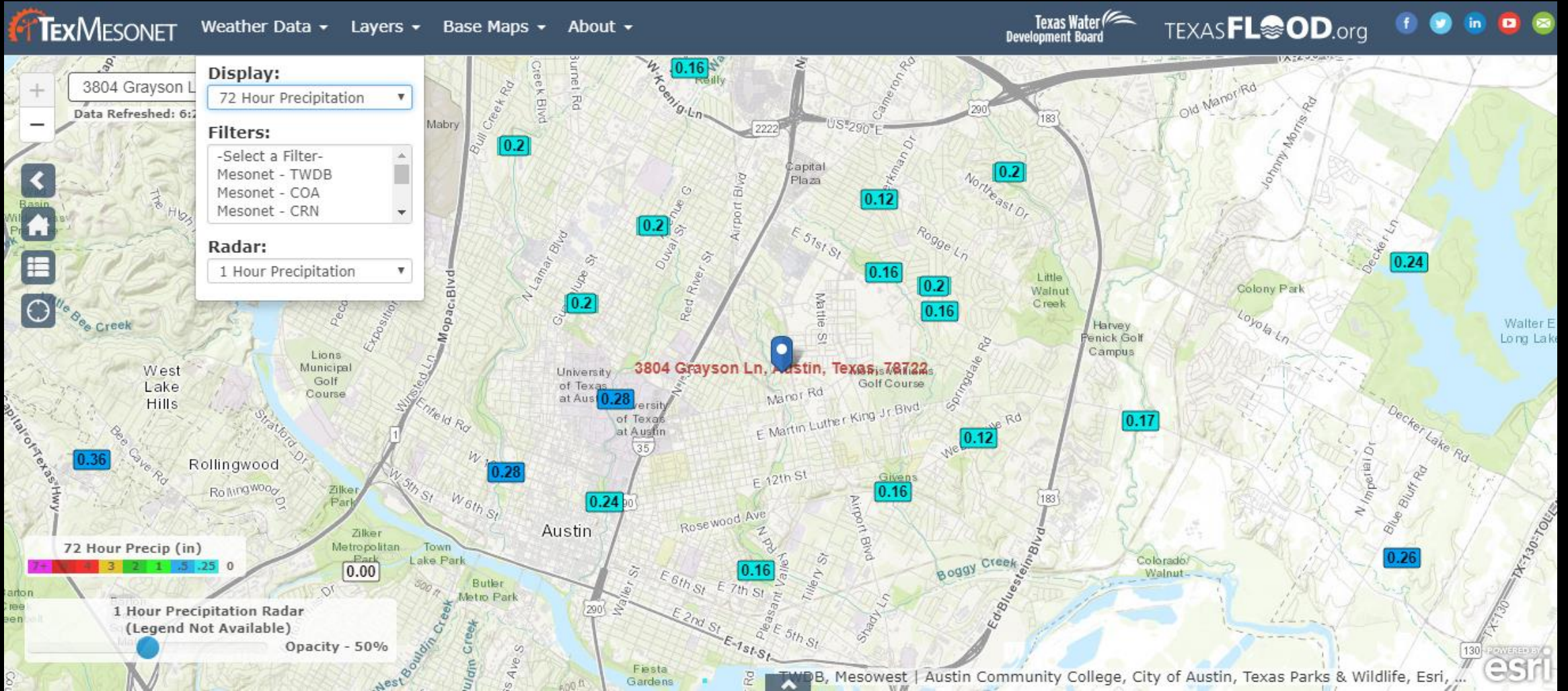
Interactive State Water Plan

- ✓ Improved responsiveness to inquiries
- ✓ Reduction in staff time spent on inquiry response
- ✓ Improved ability to inform legislative staff and other key decision makers

TexMesonet



TexMesonet



TexMesonet: *Who cares?*



Daily and monthly rainfall data for crop production

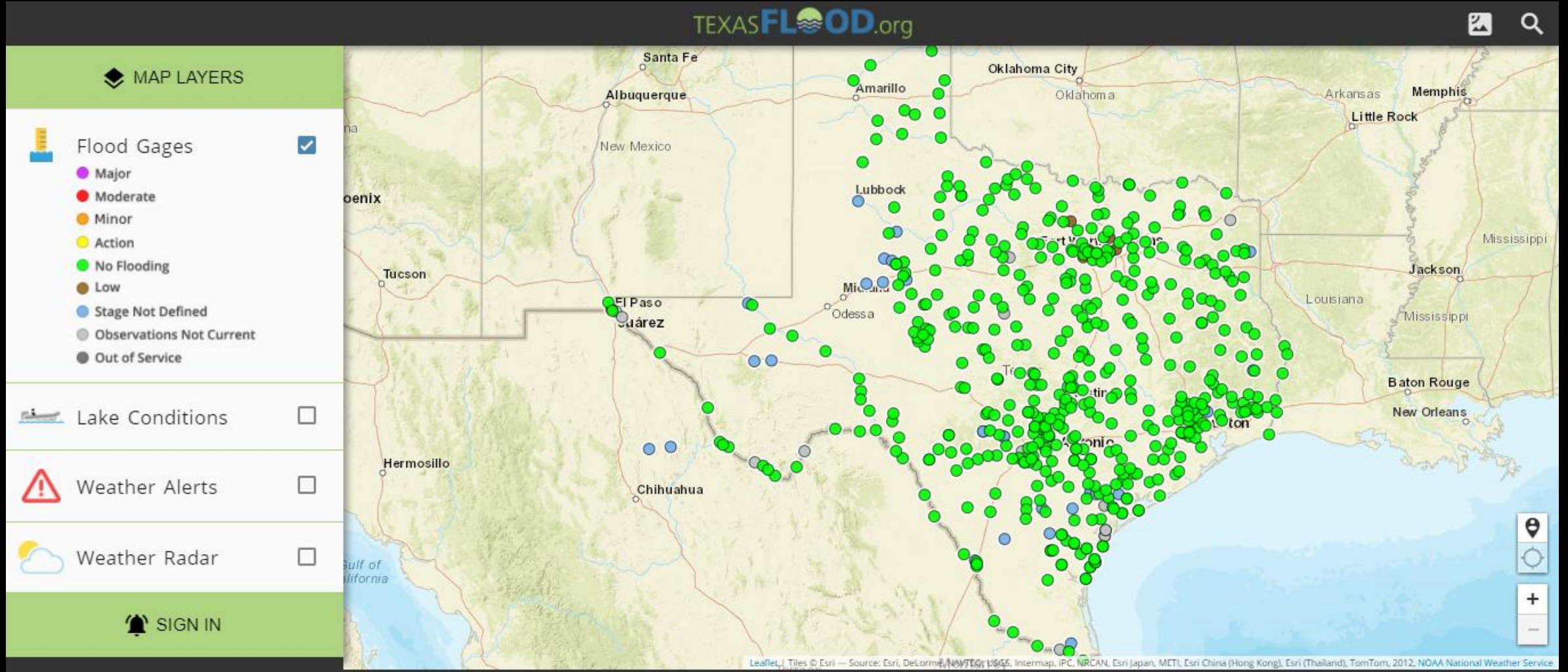


Historical wind and temperature data for legal case

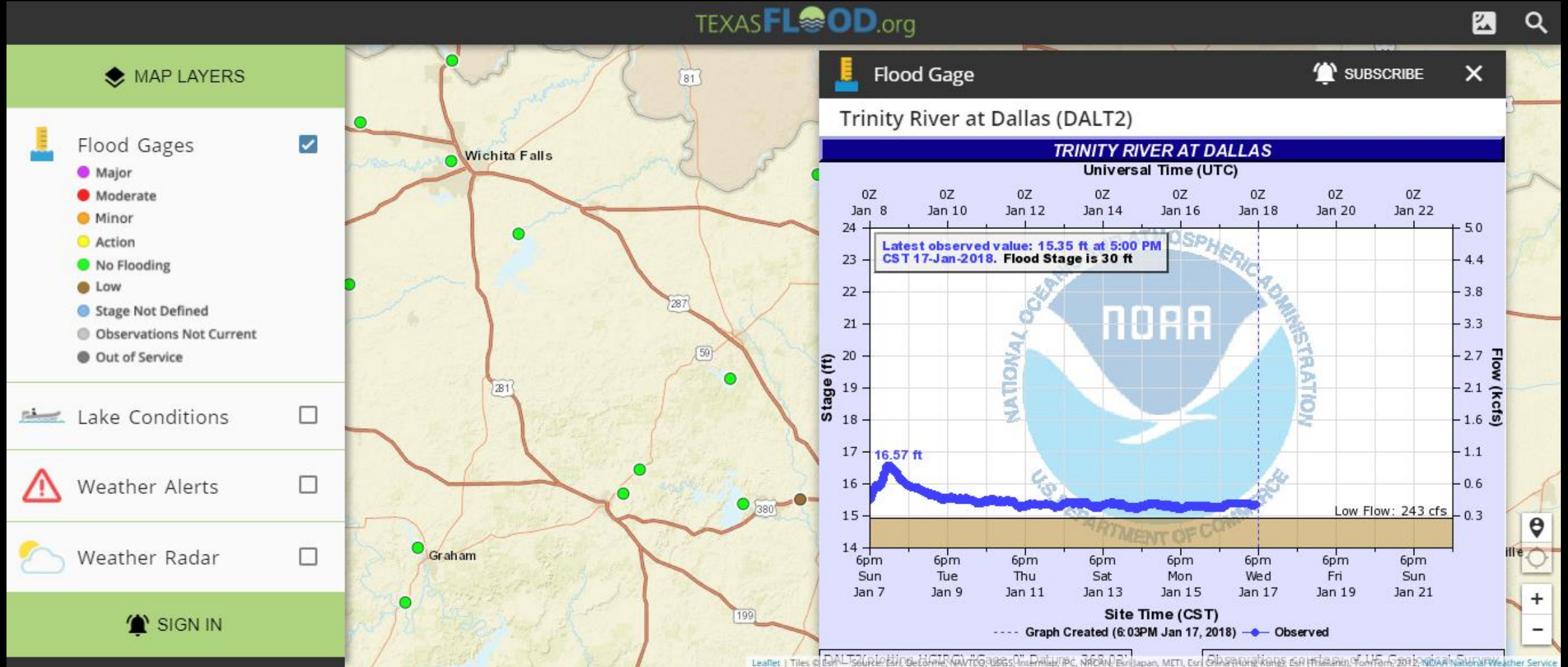


Solar radiation data for development of DFW irrigation management plan

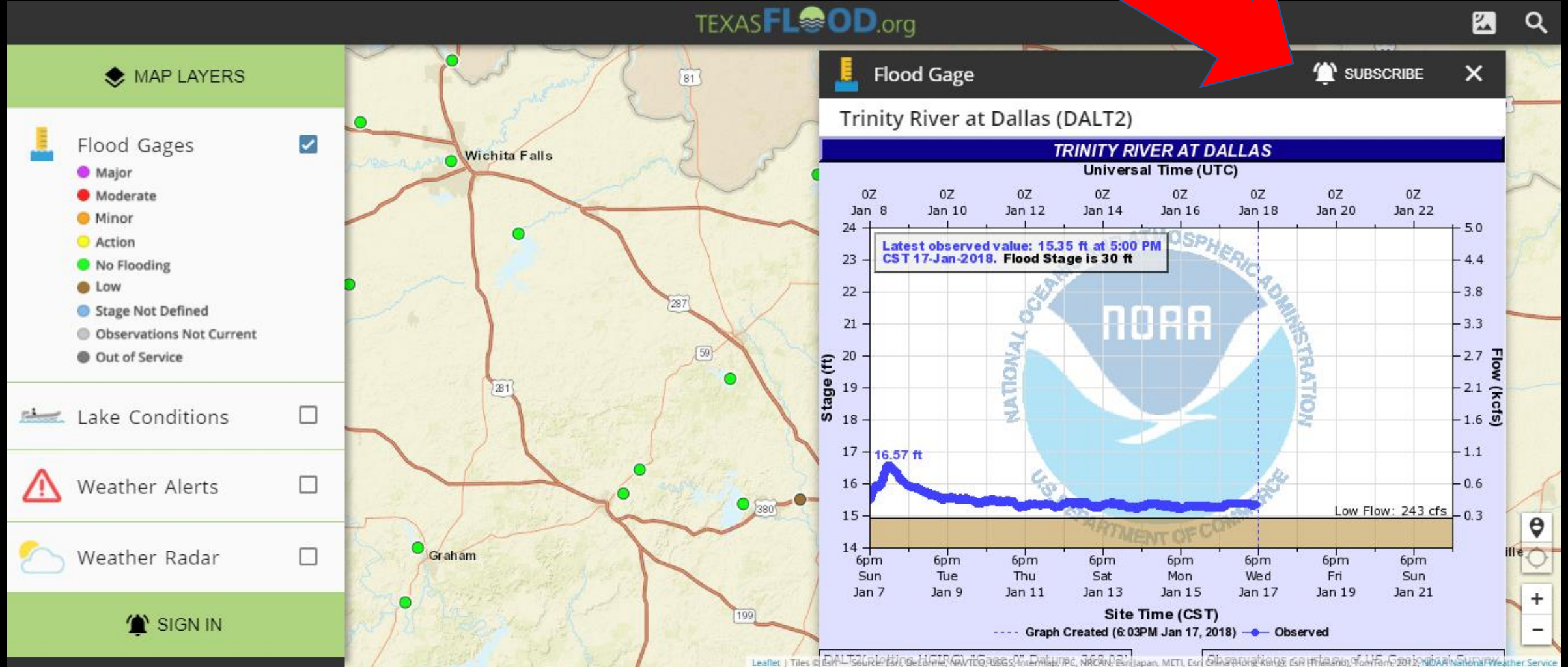
Flood Viewer



Flood Viewer



Flood Viewer



Visualization ++



Questions?



Sam Marie Hermitte

Sam.Hermitte@twdb.texas.gov

Texas Water Development Board