

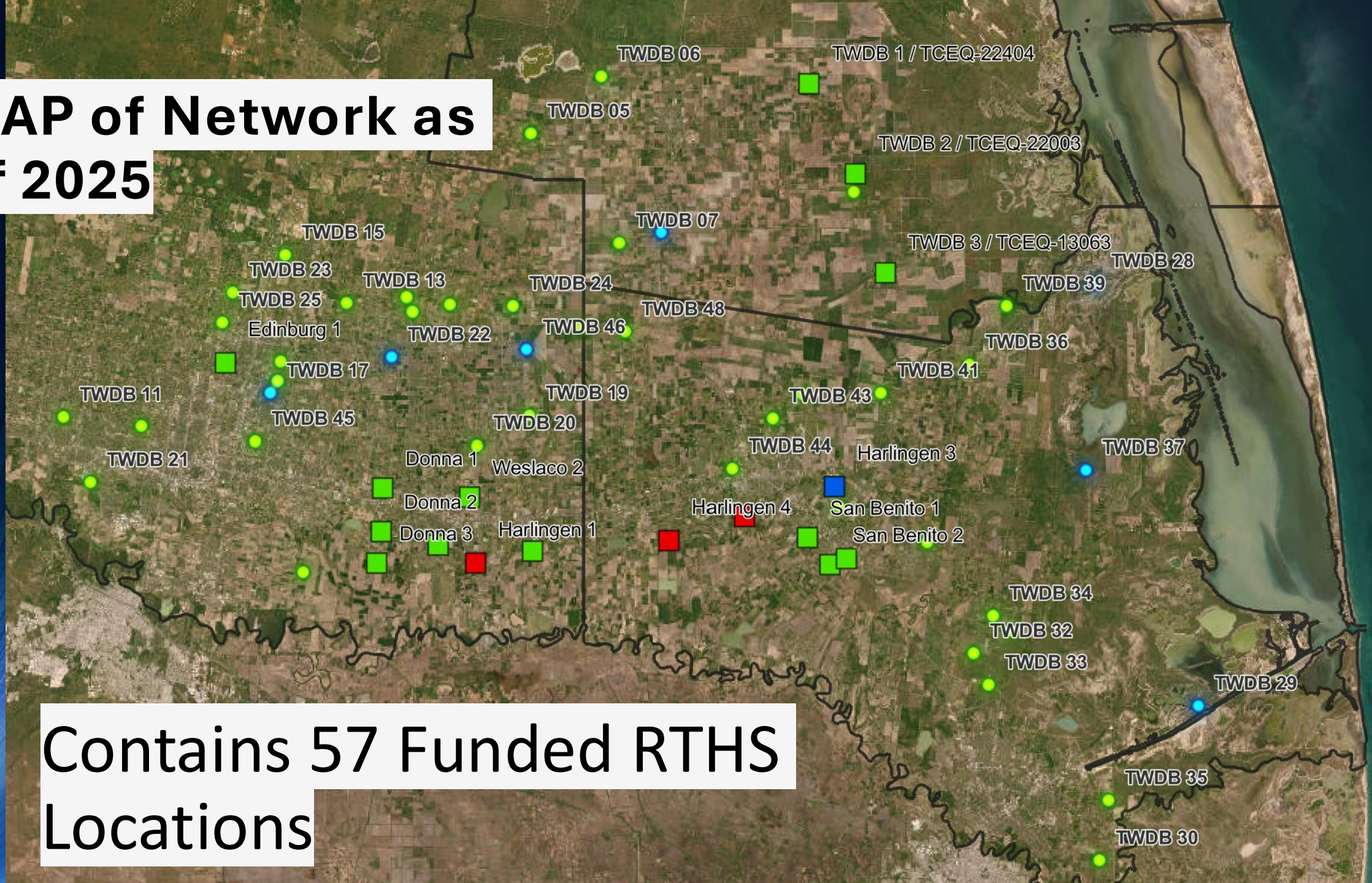
# Sustaining the REON/RGV Intelligent Watershed Through Local Adoption and Training

PRESENTED BY: SEAN LANDERS





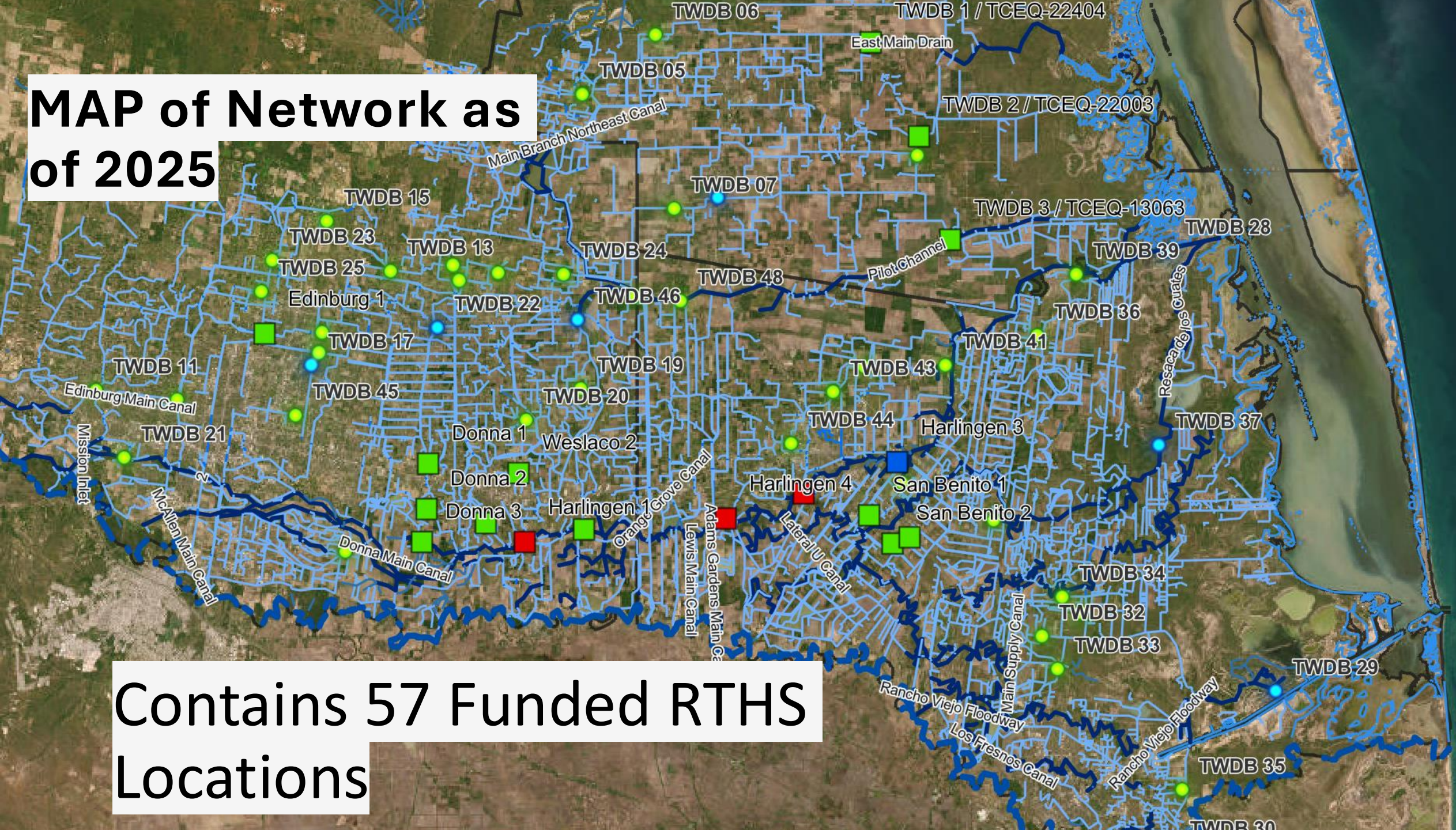
# MAP of Network as of 2025



Contains 57 Funded RTHS  
Locations



# MAP of Network as of 2025





# WHY sustain the sites?





Un-Funded  
Sites  
Break

How and  
Why?





# 3 Factors that affect Network operations.



1. ENVIRONMENT



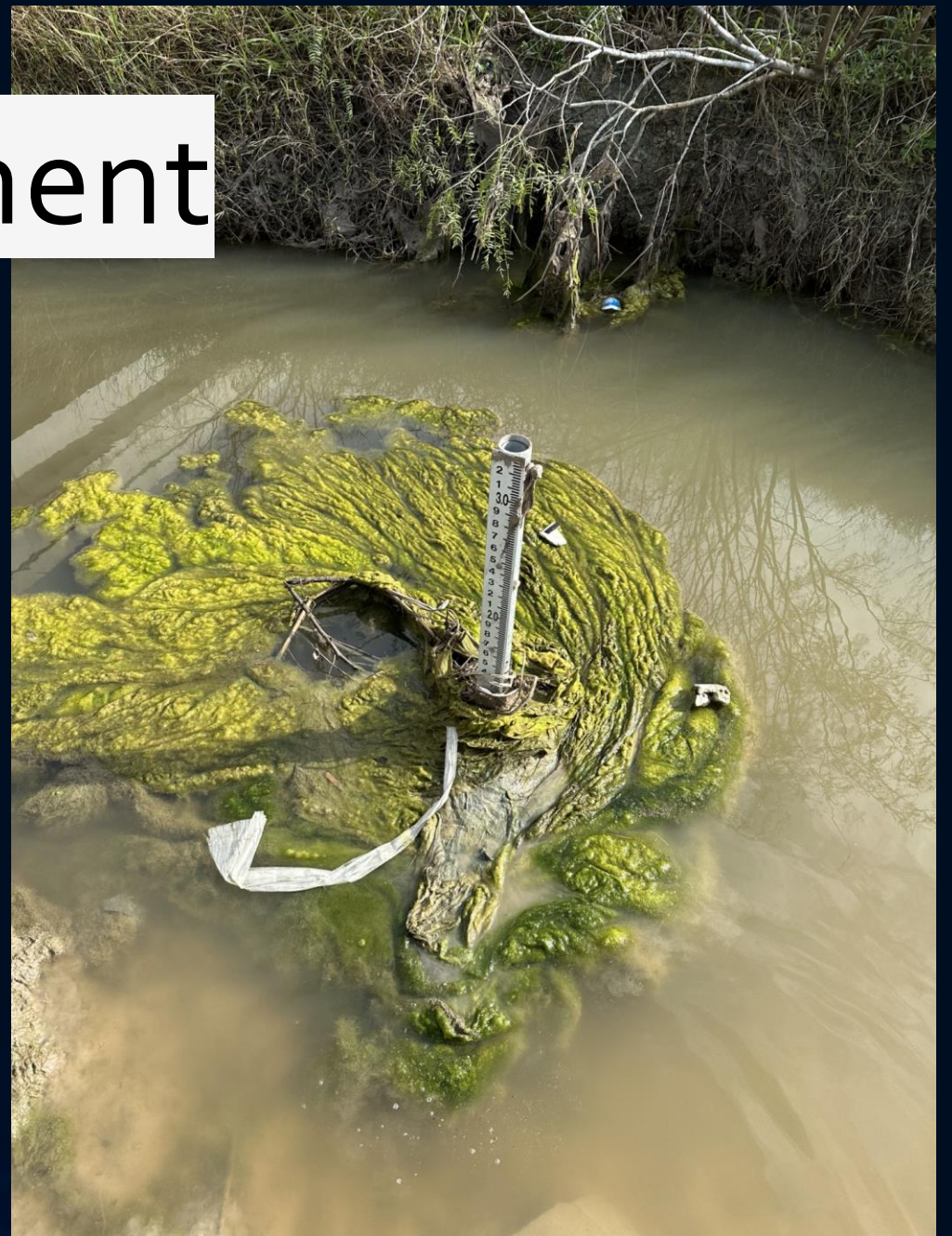
2. HUMANS AND  
ANIMALS



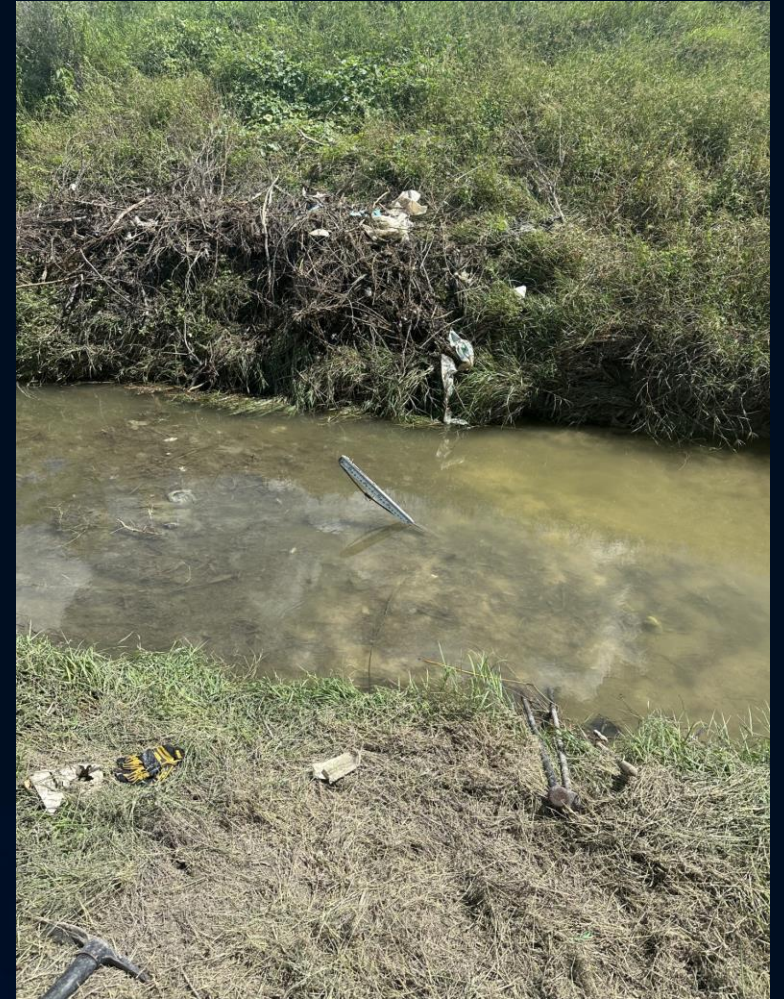
3. TECHNICAL  
PROBLEMS



# Environment









# TWDB 3





# Humans / Animals









# Technical





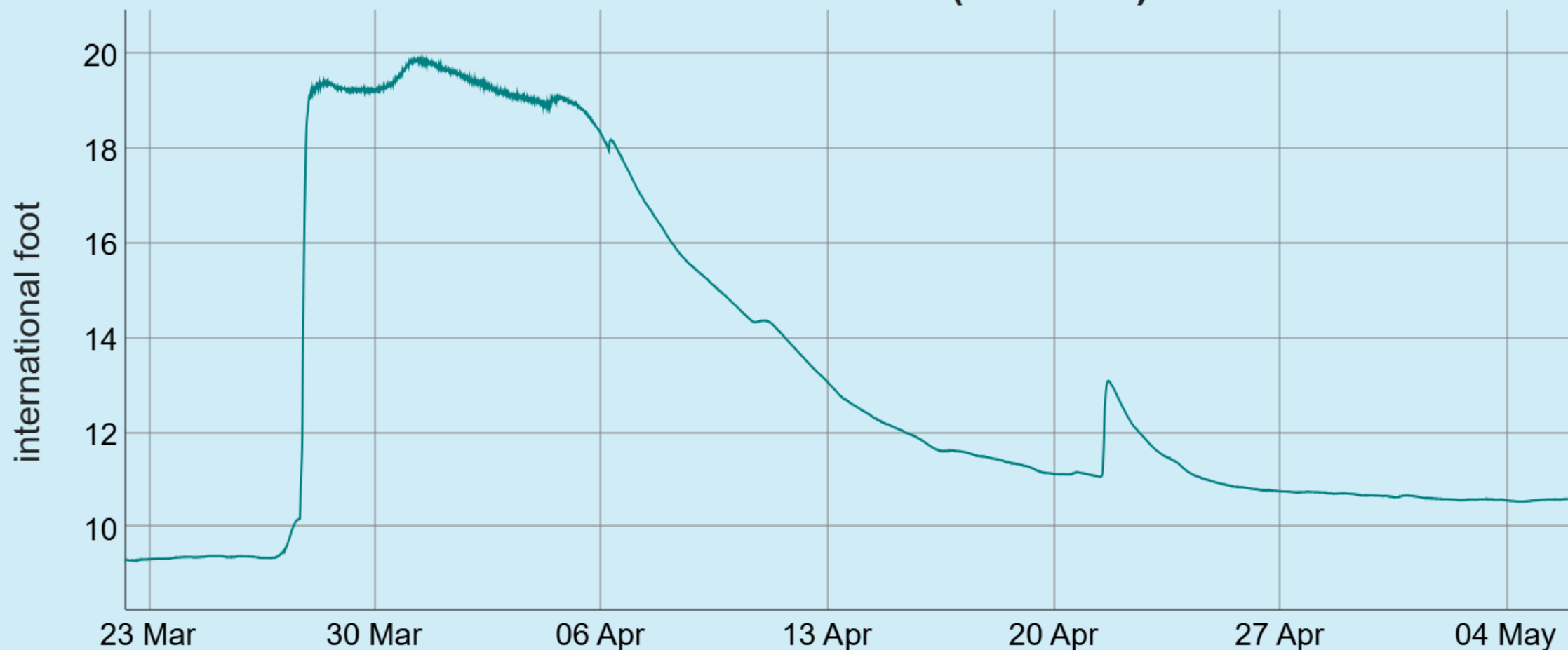




# TWDB 3 / TCEQ-13063



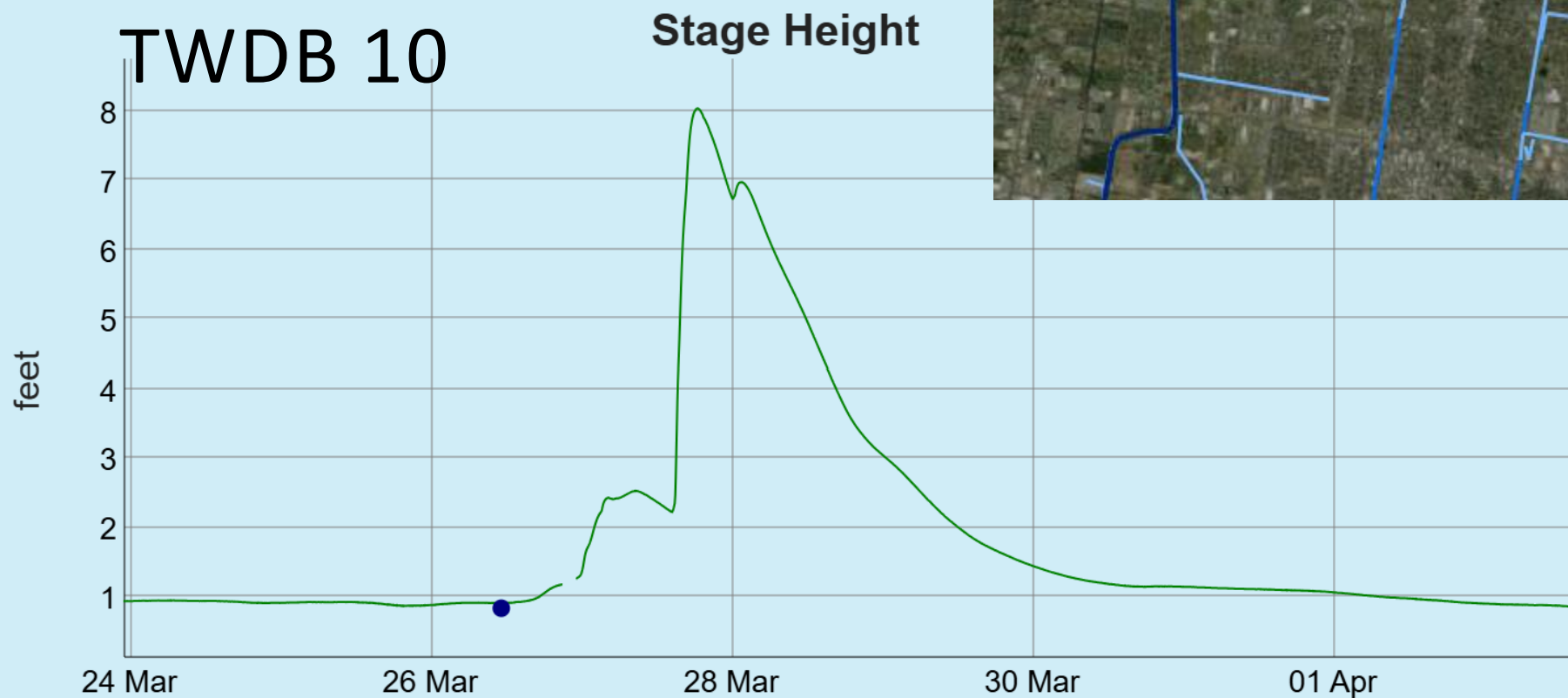
## Water Surface Elevation (NAVD88)



You can also download this data in [standard CSV](#) format or [Excel CSV](#) with UTC times. All plots are in your browser's timezone.



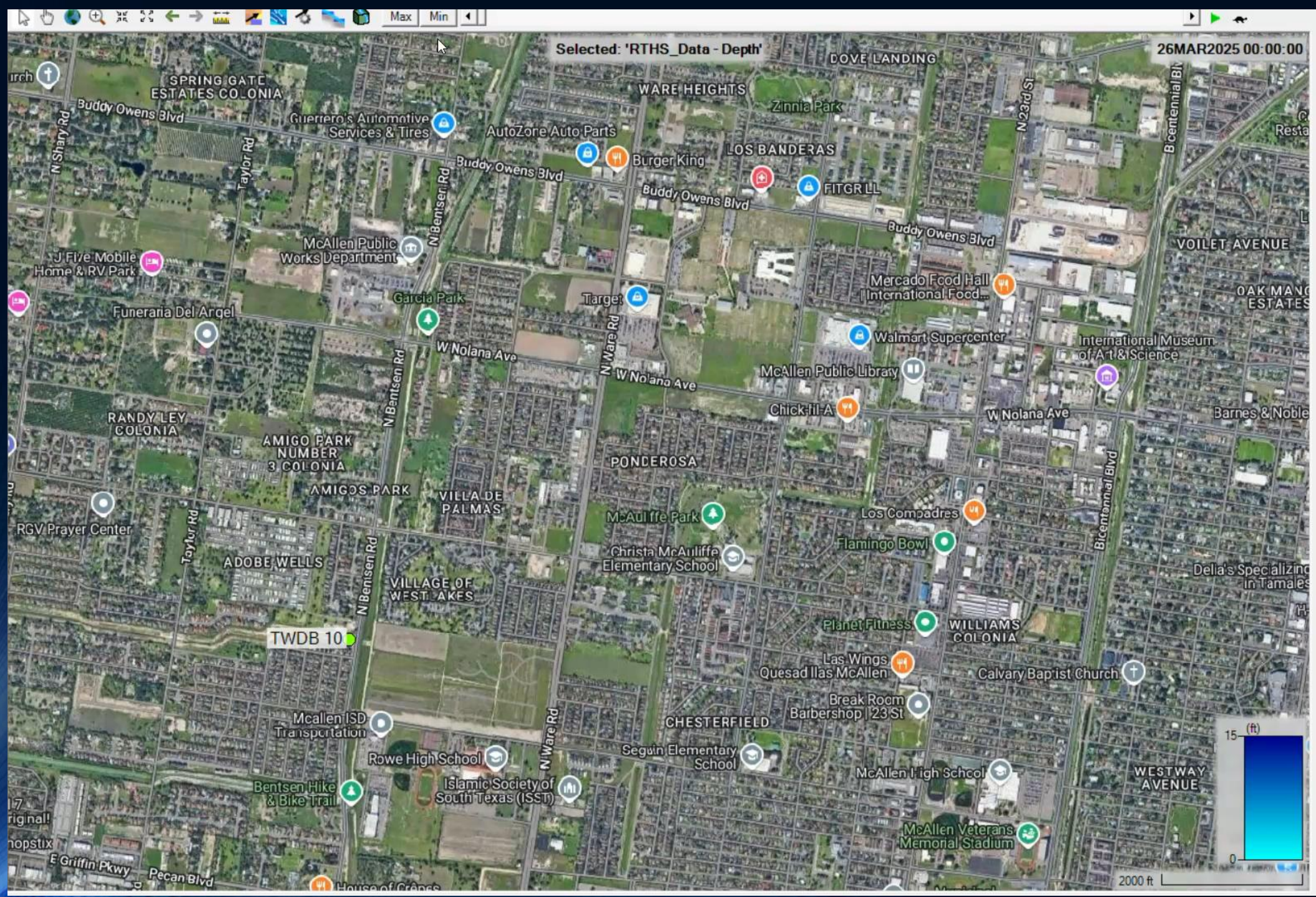
# Research First



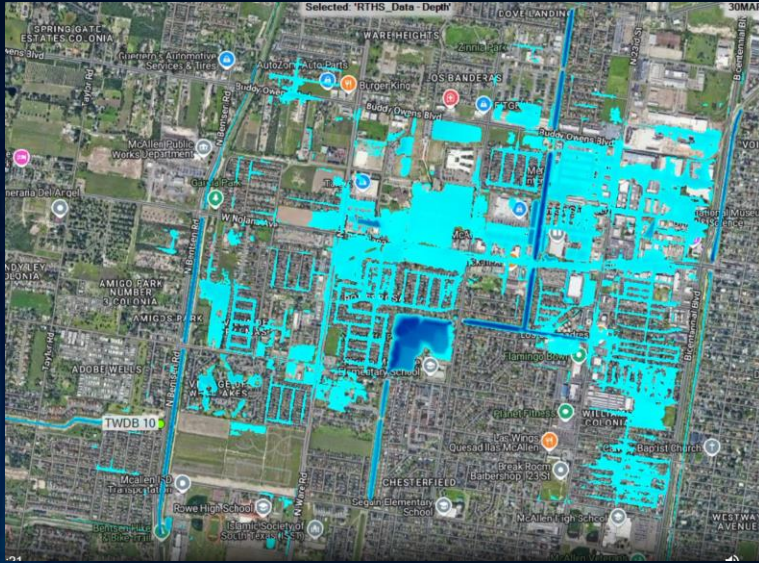
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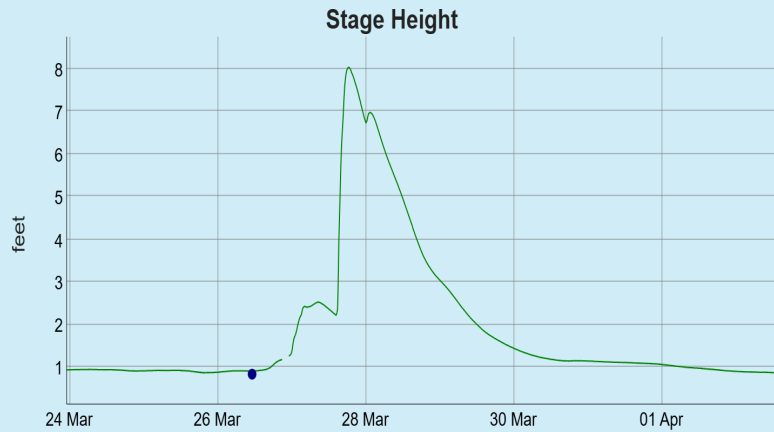






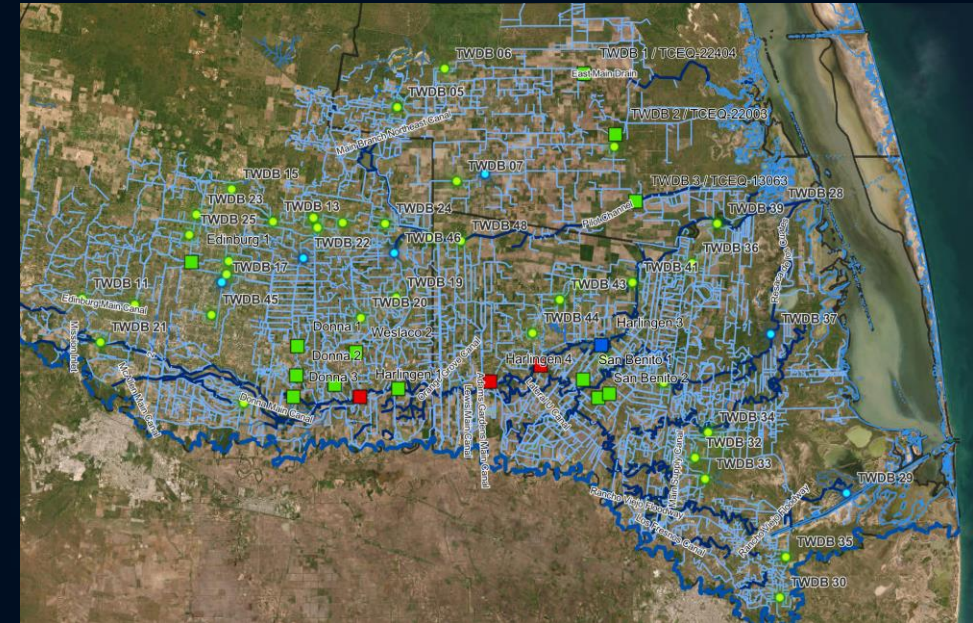


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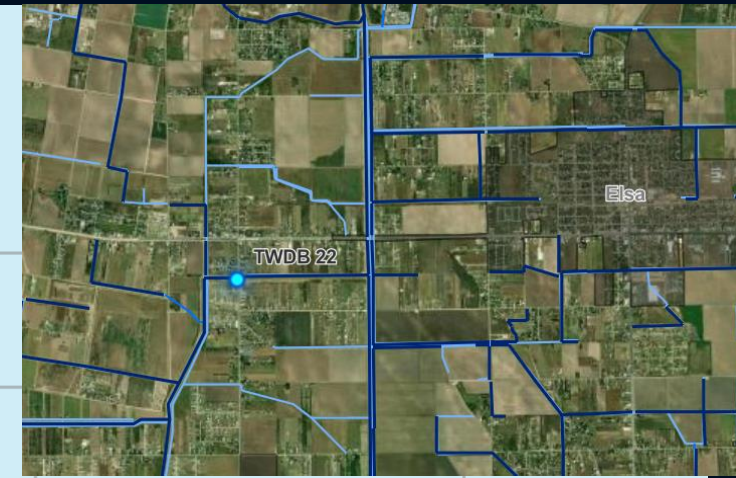
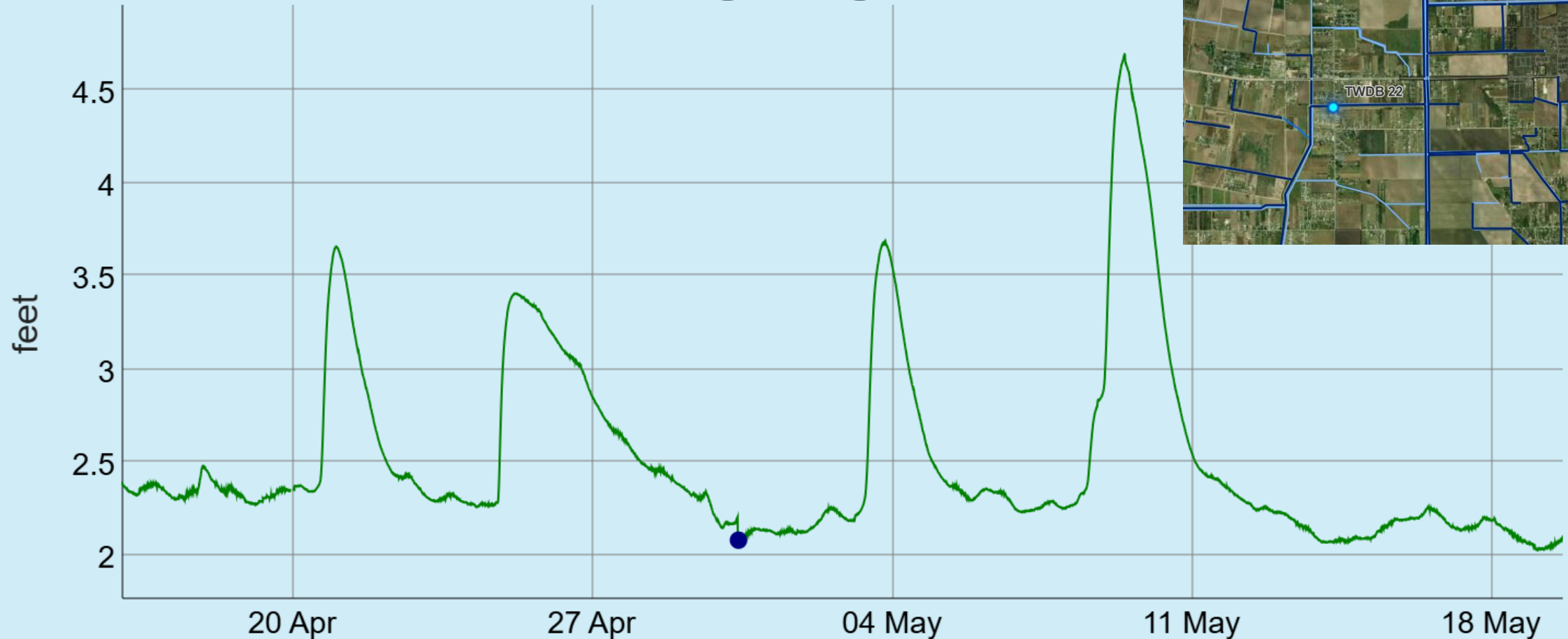


Instead of applying a model centered around 1 single station  
We apply our data into a model for the entire network



TWDB 22

## Stage Height

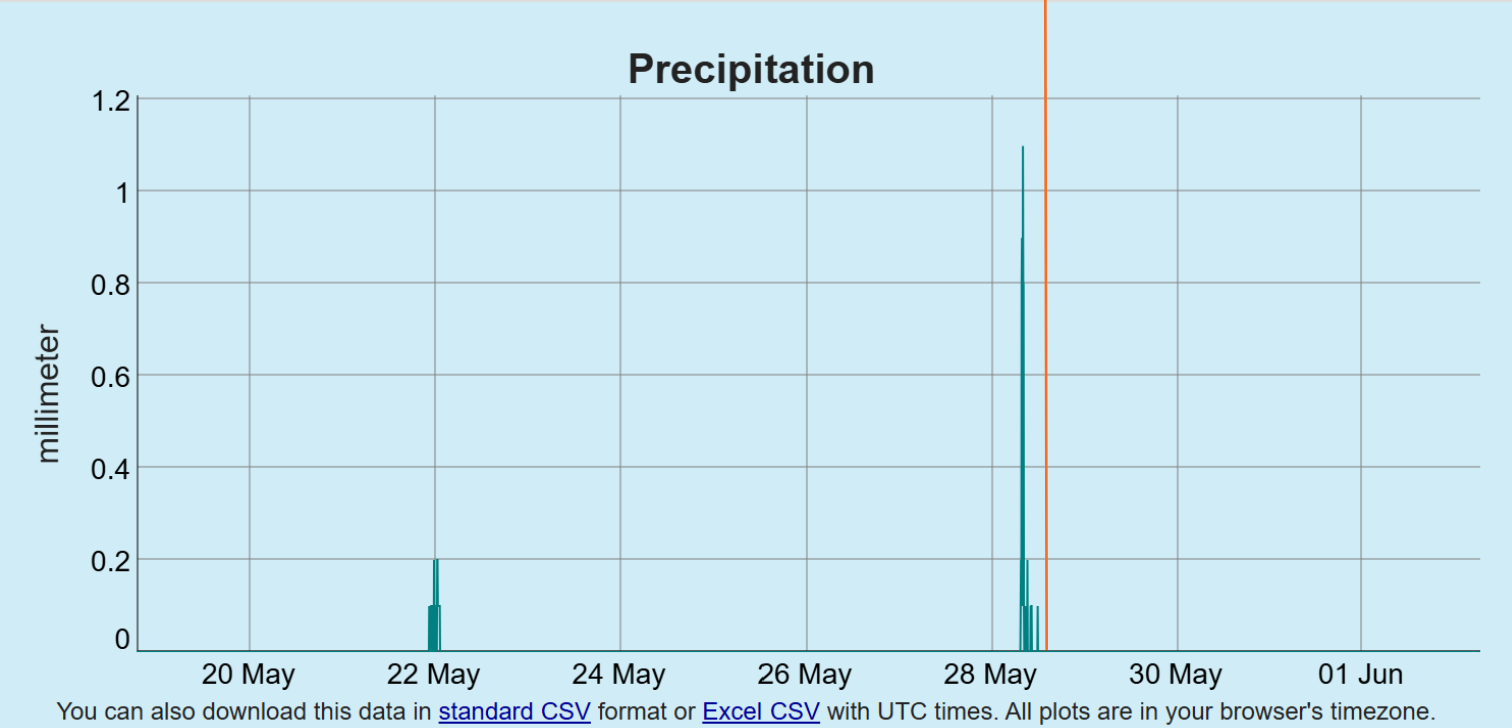
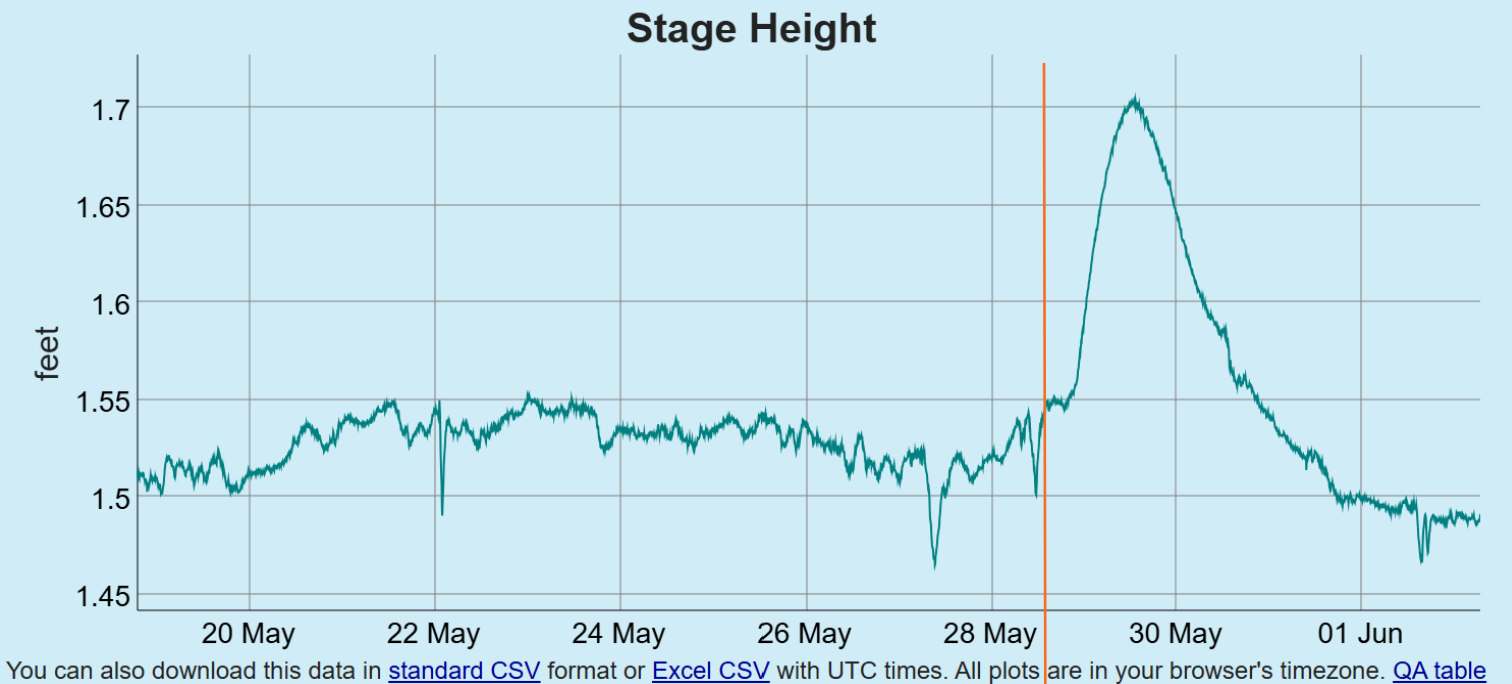


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# What Day did it not rain?

Precipitation Data Needed



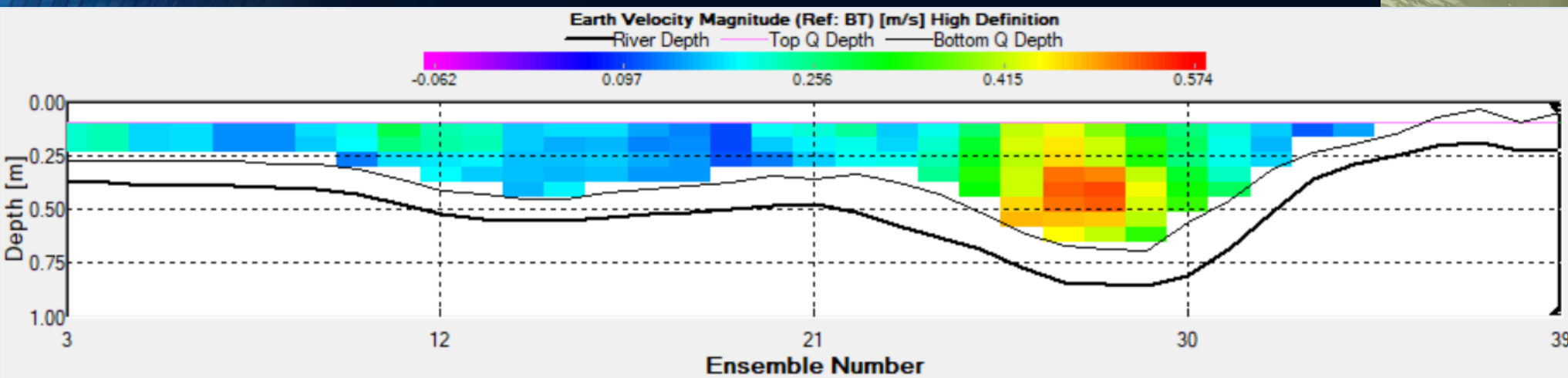




# FIF-LRGVDC Cat 1 Flood Infrastructure Fund

## Task 1- RTHS with ADCP Add On

- Task 1.3.1.2 ADCP Add-on Installation
  - Needed to provide point velocity measurements in waterways subject to experience reverse flows
    - Coastal storm surge and/or back water effects
    - Applicable to development of index velocity discharge rating curves
      - Conventional rating curves are not applicable to in water ways subject to reverse flows
  - RATES is currently in the process of deploying Acoustic Doppler Velocimeters at 12 RTHS locations.





# ADCP vs ADV

- ADCP Provides profiles on water velocities
  - Deep water application
  - Large blanking distances preclude deployment in most LRGV drains
  - High profiles subject to fouling
- ADV provide velocities at discrete points
  - Shallow water applications
  - Configurations not hindered by large blanking distances
  - Low profiles more resistant to fouling



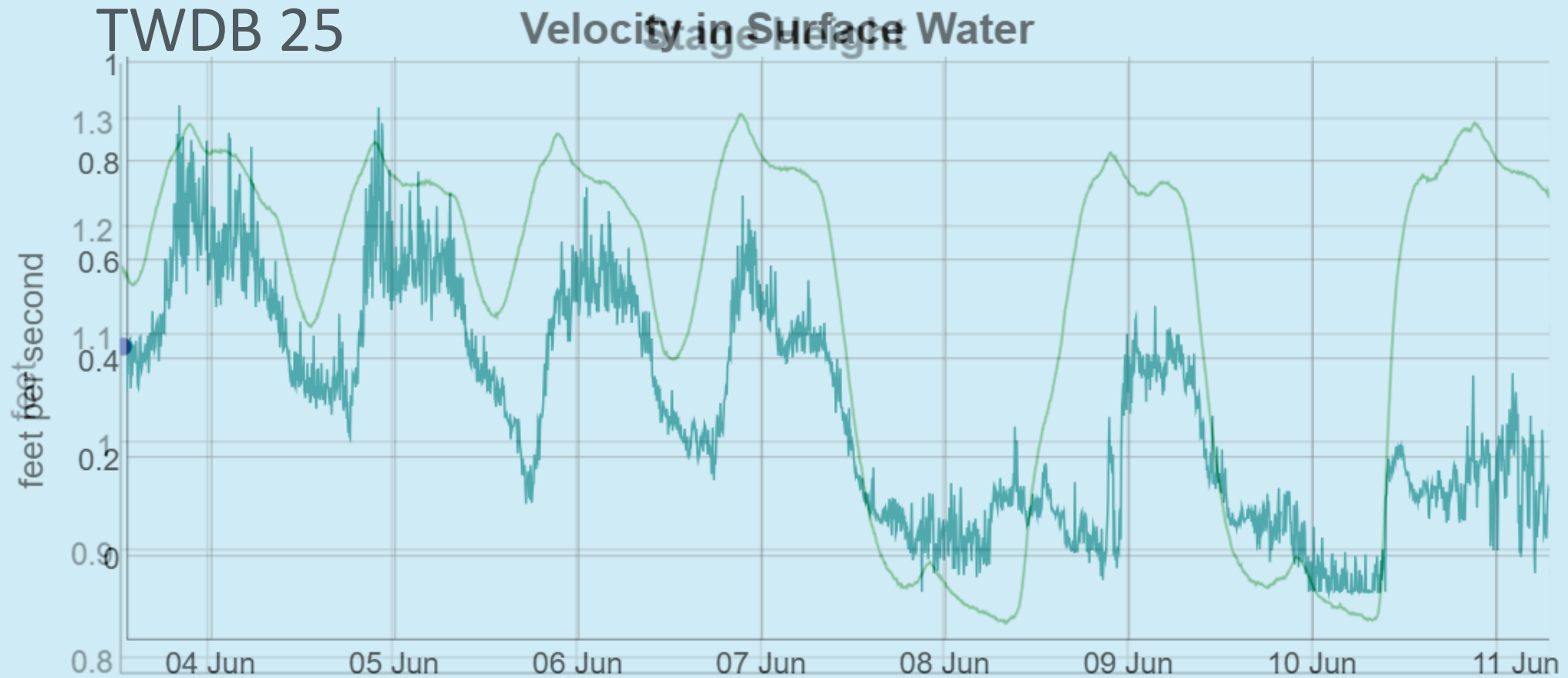


# Stream Pro's Total Flow Variation Due to Tidal Influence

Transect	Start Bank	# Ens.	Start Time	Total Q m <sup>3</sup> /s
TWDB39_5.20.25000	Right	97	12:22:04	0.677
TWDB39_5.20.25001	Left	88	12:24:18	0.389
TWDB39_5.20.25002	Right	78	12:26:08	0.314
TWDB39_5.20.25003	Left	68	12:27:48	0.799
TWDB39_5.20.25004	Right	68	12:29:41	0.355
TWDB39_5.20.25005	Left	64	12:31:08	0.130
TWDB39_5.20.25006	Right	60	12:32:50	0.925
TWDB39_5.20.25007	Left	79	12:34:05	0.609
Average		75		0.525
Std Dev.		13		0.271
Std./  Avg.  (%)		17.33		51.60



# Time Series of Velocity Measurement

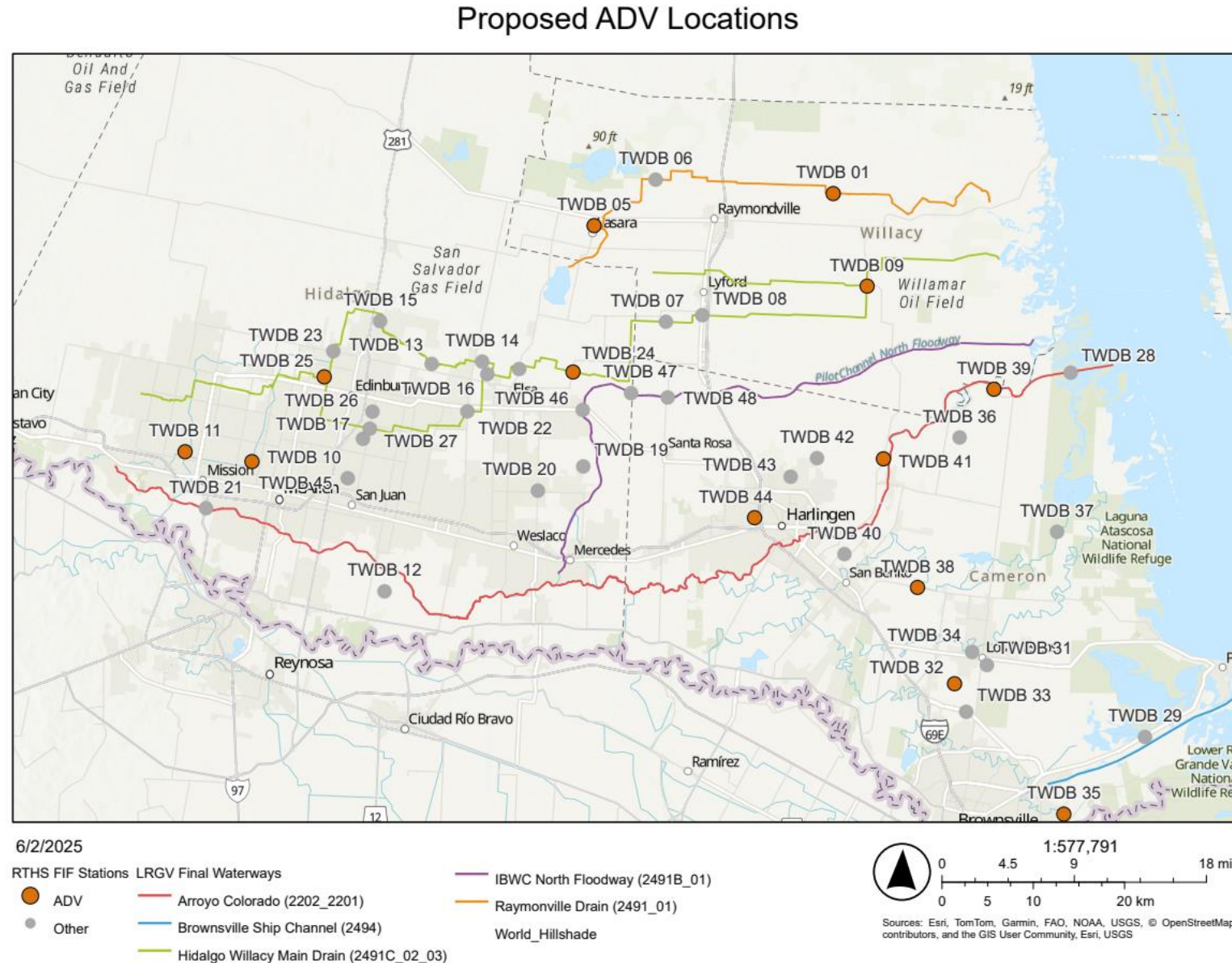


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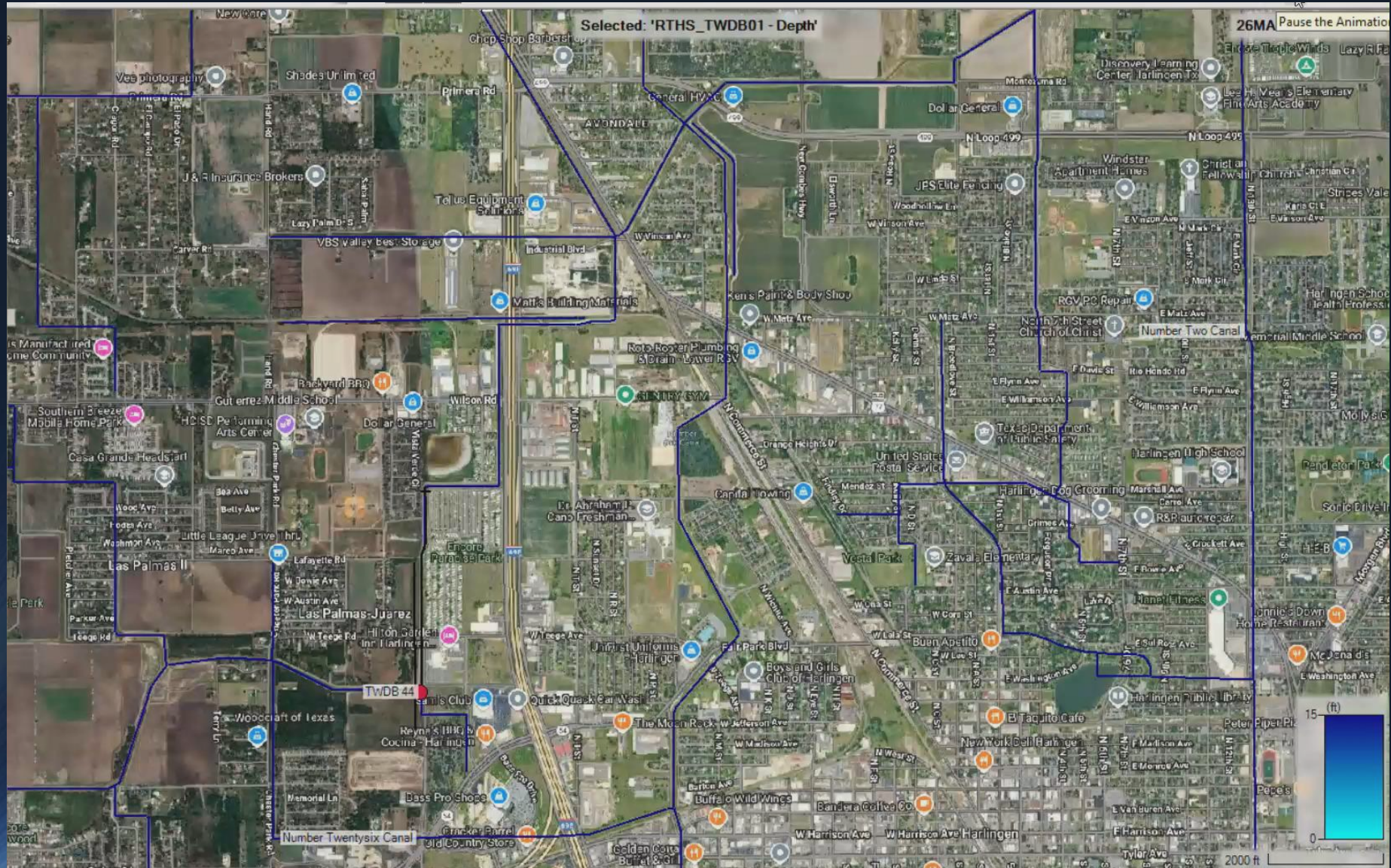


# 12 ADV (Flow Meters) to be added to the RTHS Stations





# Linda's HEC RAS movie of reverse flow





- First to have help Brush clearing the sites
  - Mowing of grass and Brush around command pole and a path down to staff gauge
  - Clearing debris from around the staff gauge



## What is The Vision



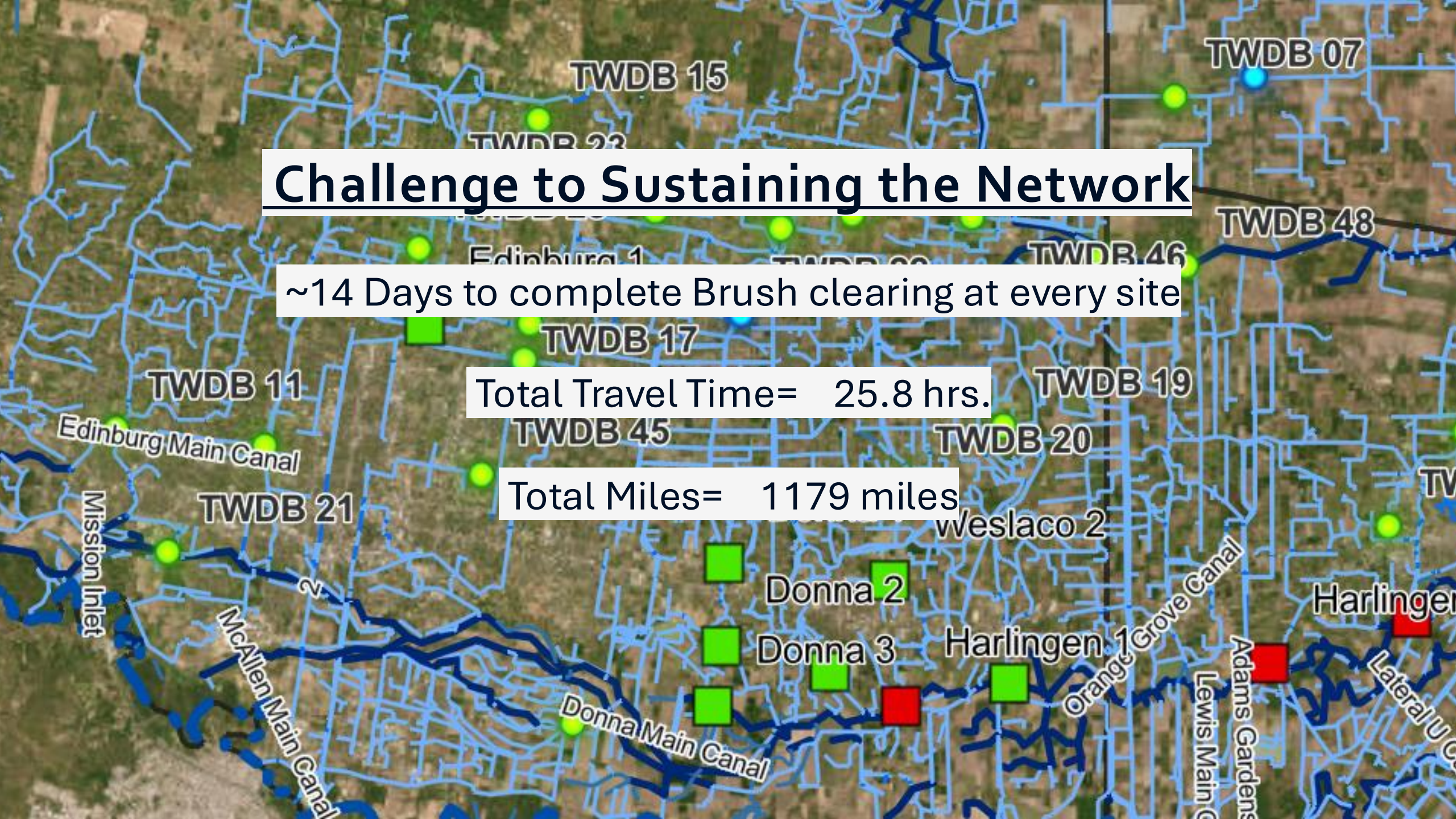


# Challenge to Sustaining the Network

~14 Days to complete Brush clearing at every site

Total Travel Time= 25.8 hrs.

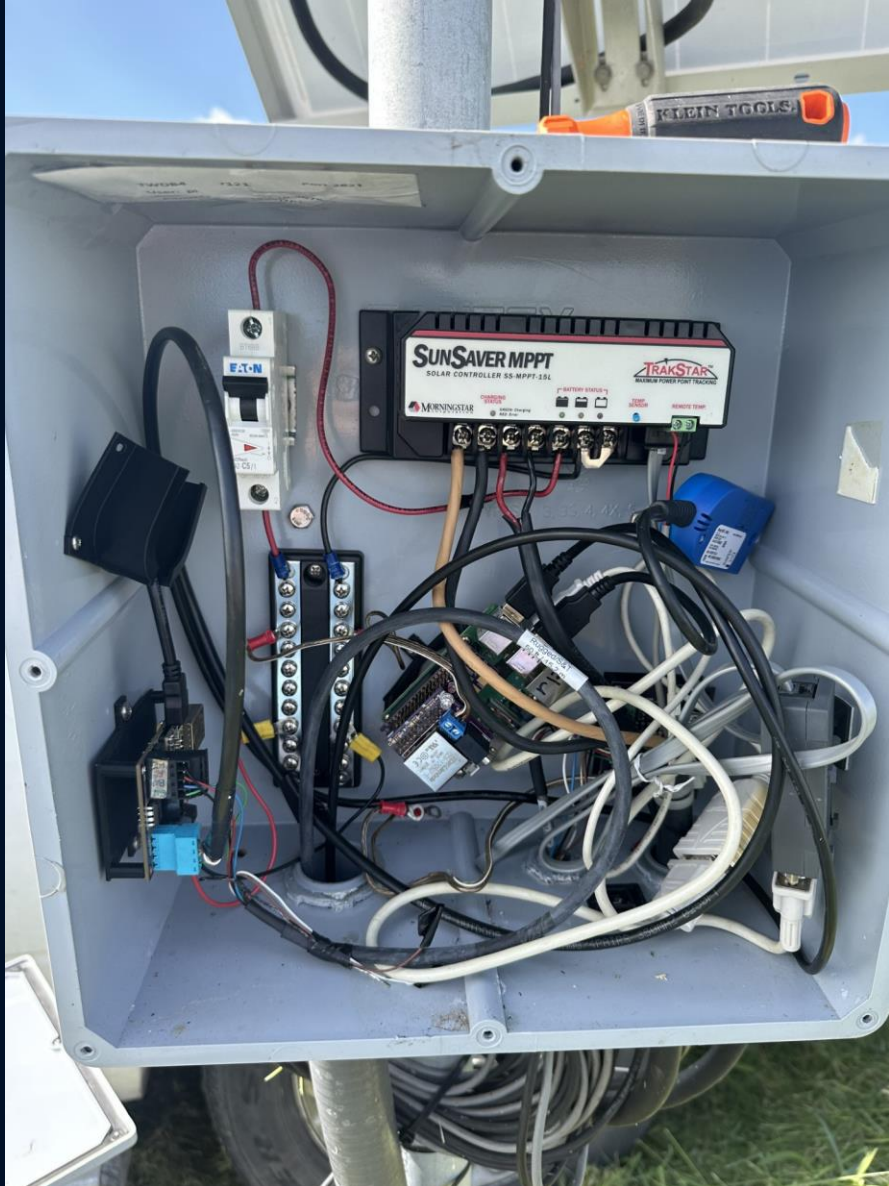
Total Miles= 1179 miles











- Third
- Larger role in Physical Station component maintenance
- Replace solar panels
- Replace sensors
- Replace RTHS boxes





- 4th assistance in other data commissioning efforts
  - Discharge measurements, Aqua troll Maintenance, survey data

