Operational, Impact-based Flood ForeCasting and Real-time intelligence

FloodMapp

building a safer future

FloodMapp

Mission

Localized flood forecasts to:
Improve Public Safety.
Mitigate damage.

We work actively with agencies in AU and US to successfully enhance preparedness, response and recovery.

- **Government** - Local, state, federal
- **Critical infrastructure** to help restore our power and community access.

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Energy Queensland
HINCHINBROOK SHIRE COUNCIL
Australian Government
THE CITY OF NORFOLK
CITY of BOSTON
NSW GOVERNMENT Transport for NSW
origin
genasys
waze
Telstra
esri

DASH Hydraulics

Live, **operational** impact intelligence

Purpose built **for emergency management**

Operational - real-time situational awareness with **24/7 hourly updates** to reflect changing conditions using live rainfall & flood sensor data

Flood **extent, depth, and impacts** delivered via API into any GIS system.

Scalable from **property level** to **national** scale. 10m - 1m resolution.

Validated & Operational

Successfully saving lives and **prevented millions in losses**.

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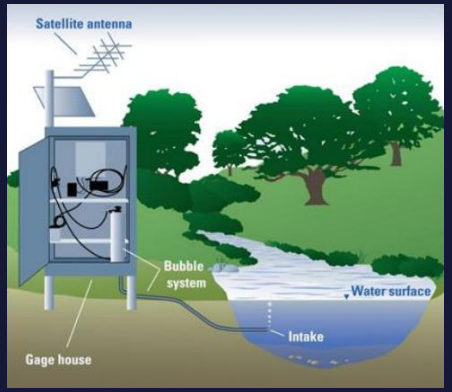
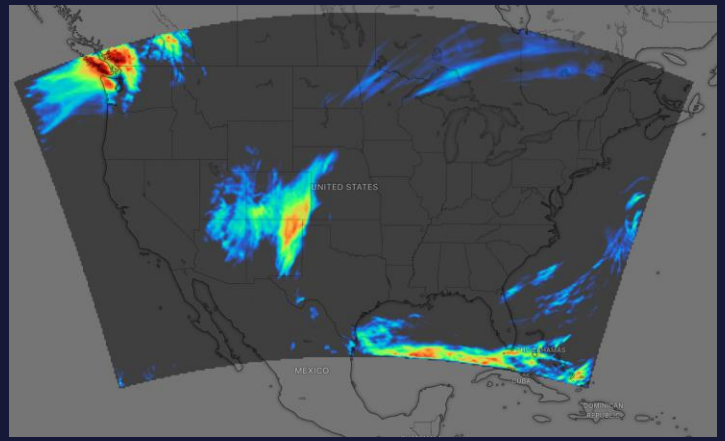
Input Data

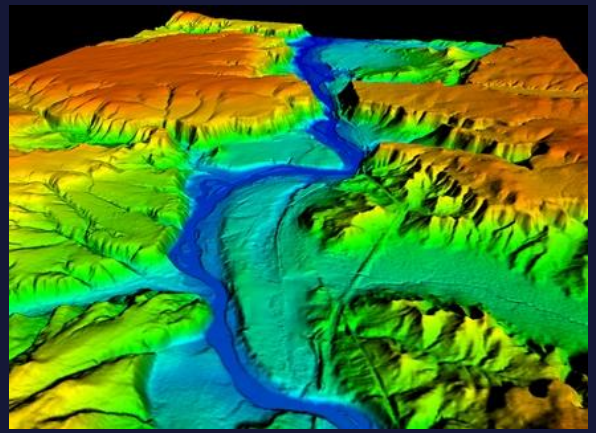
FloodMapp collects 4 main categories of data as inputs to FloodMapp DASH – our ground-breaking proprietary hydrology and hydraulics modelling technology.



2. Surface Water Observations – 60,000 stations and counting



1. Meteorology Data



3. Digital Elevation Models

4. Ground Truth Validations

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Intelligence – Before, During, After

ForeCast

NowCast

PostCast

Preparedness

Response

Recovery

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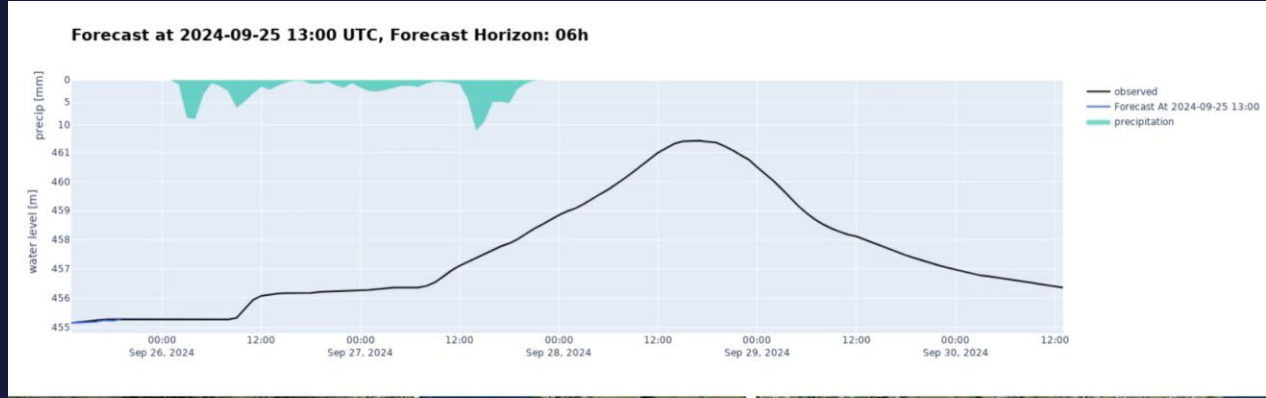
ForeCast

Hydrology &
Hydraulic
Forecast

Live impact analytics



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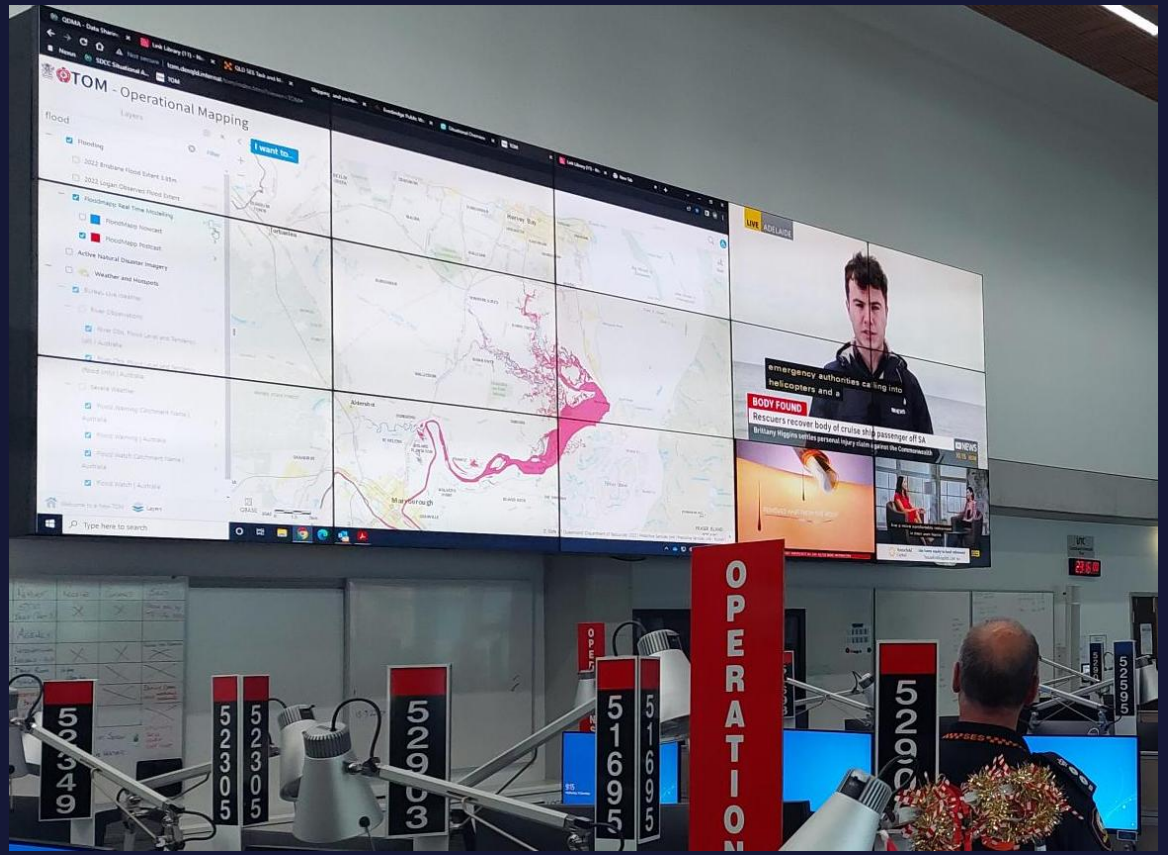
Predictive Intelligence - SDCC

Operational ForeCast and real-time monitoring:

Connects to Esri ArcGIS platform as a live data feed

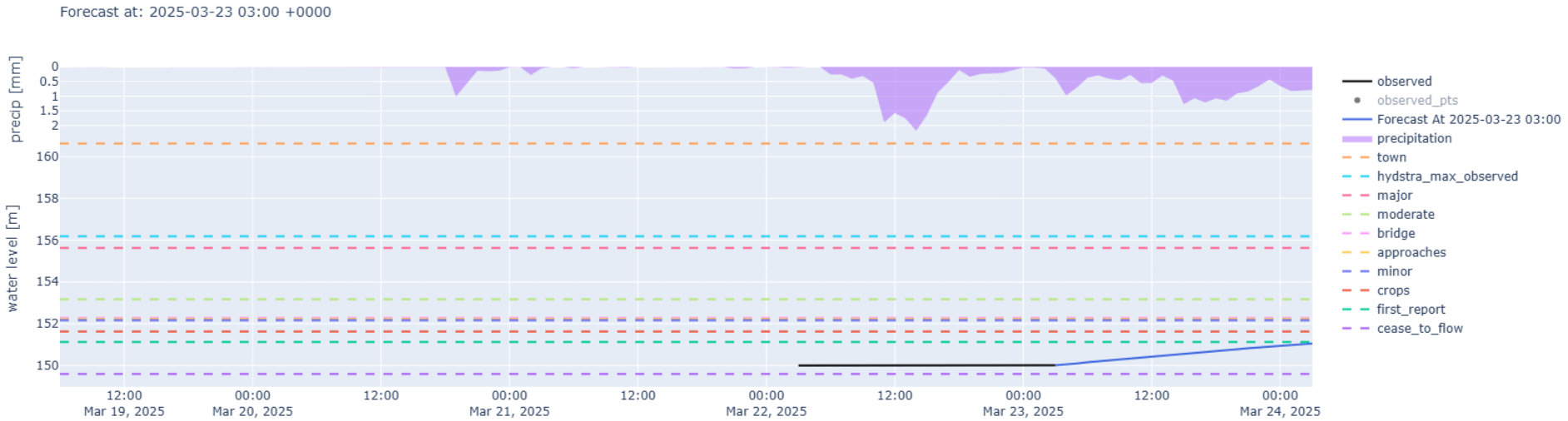
24/7 accessibility with 99.5% uptime

Hourly updates as rain falls and river levels rise.



ForeCast - Thomson River

Stonehenge, QLD March 2025



ForeCast peak: **158.5m** Gauge datum: **150.6** ForeCast height: **7.9m** Observed Peak: **7.4m**

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Jundah - Thompson River

March 27, 2025

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Live, Operational Real-time monitoring

Active and Post-Event Intelligence

- ✅ **NowCast** – Hourly situational awareness during event *(blue layer)*
- ✅ **PostCast** – Analysis and assessments after event *(red layer)*

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Hurricane Helene in Harbordale, St. Petersburg

Live Road Impacts

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Norfolk Road Impact Analytics

River Condition: Median | Action | Flood | Moderate | Peak

Impact Analytics
- Severe (> 3 ft
- Moderate
- Low

Flood Extent

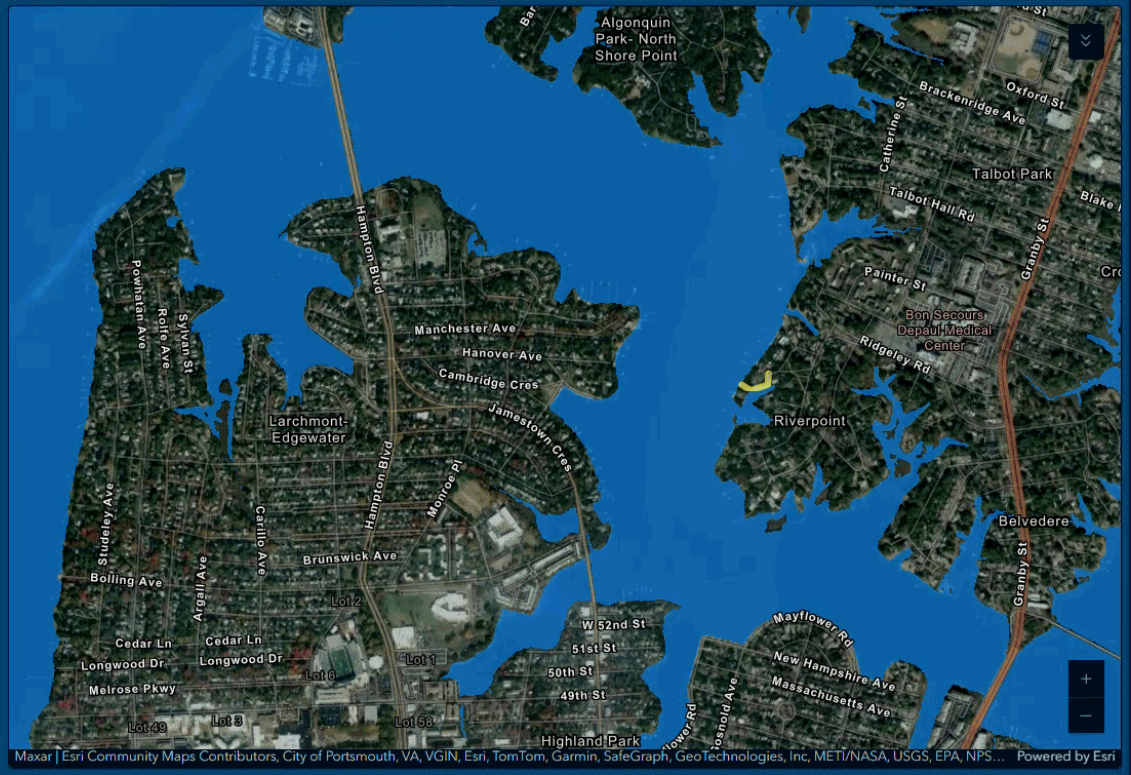
Severe Impacts
0
Max Depth (> 3 ft)

Moderate Impacts
0
Max Depth (1- 3 ft)

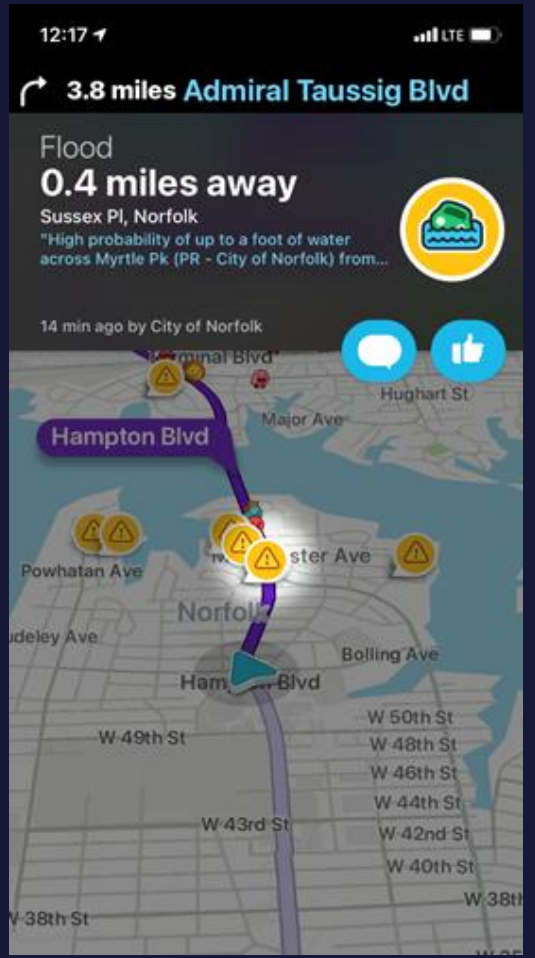
Minor Impacts
1
Max Depth (< 1 ft)

List of Impacts
Ordered by depth

Name: **River Crescent**
Hierarchy: **residential**
Severity: **Low**
Max depth: **0.100000ft**



Grace St
Memorial St
Yarmouth St
Mowbray Arch
Wisteria Cafe
Chrysler Museum


12:17
LTE
3.8 miles Admiral Taussig Blvd
Flood
0.4 miles away
Sussex Pl, Norfolk
"High probability of up to a foot of water across Myrtle Pk (PR - City of Norfolk) from...
14 min ago by City of Norfolk
Hughart St
Major Ave
Hampton Blvd
Powhatan Ave
Bolling Ave
W 50th St
W 48th St
W 46th St
W 44th St
W 42nd St
W 40th St
W 49th St
W 43rd St
W 38th St

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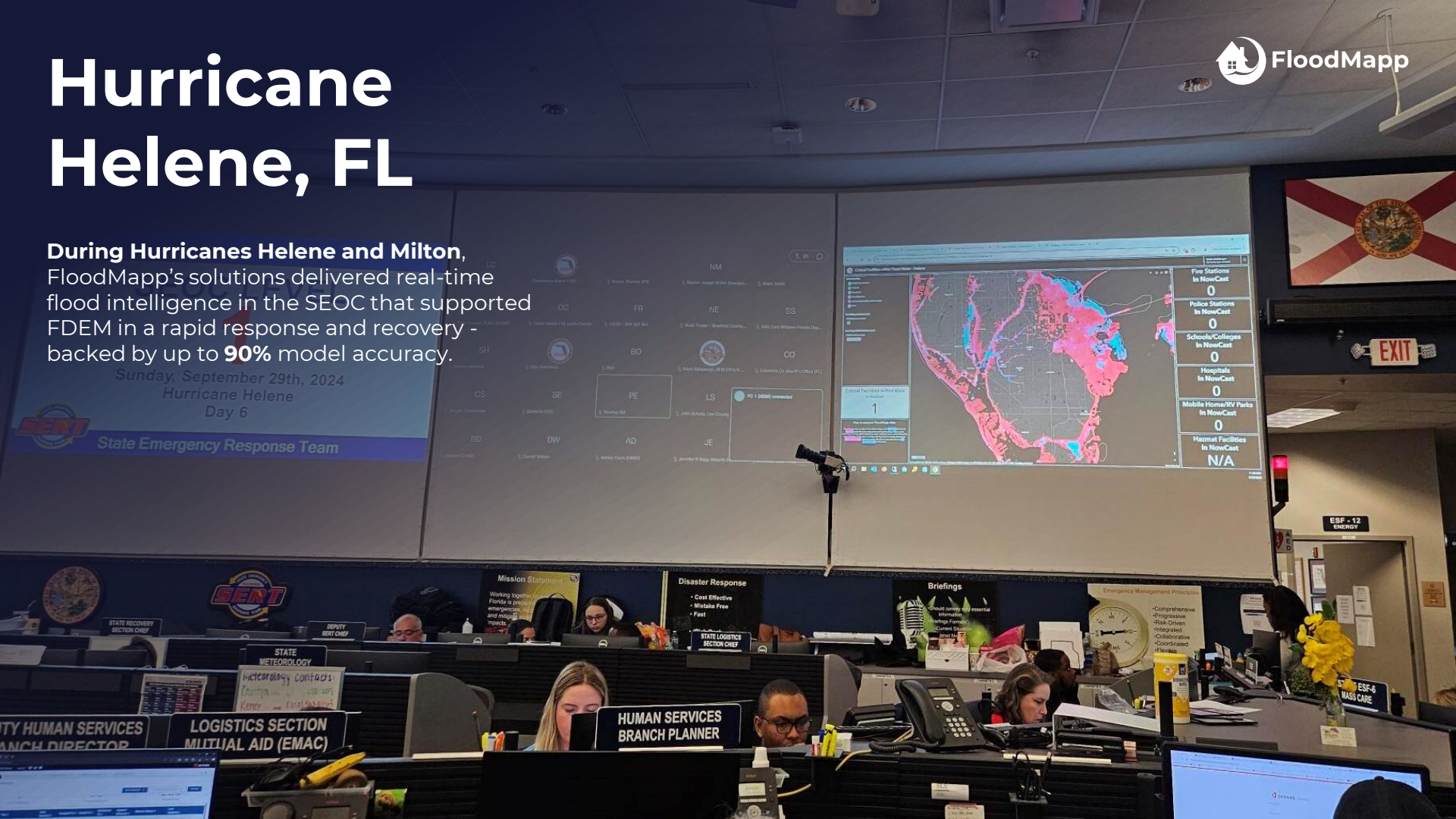
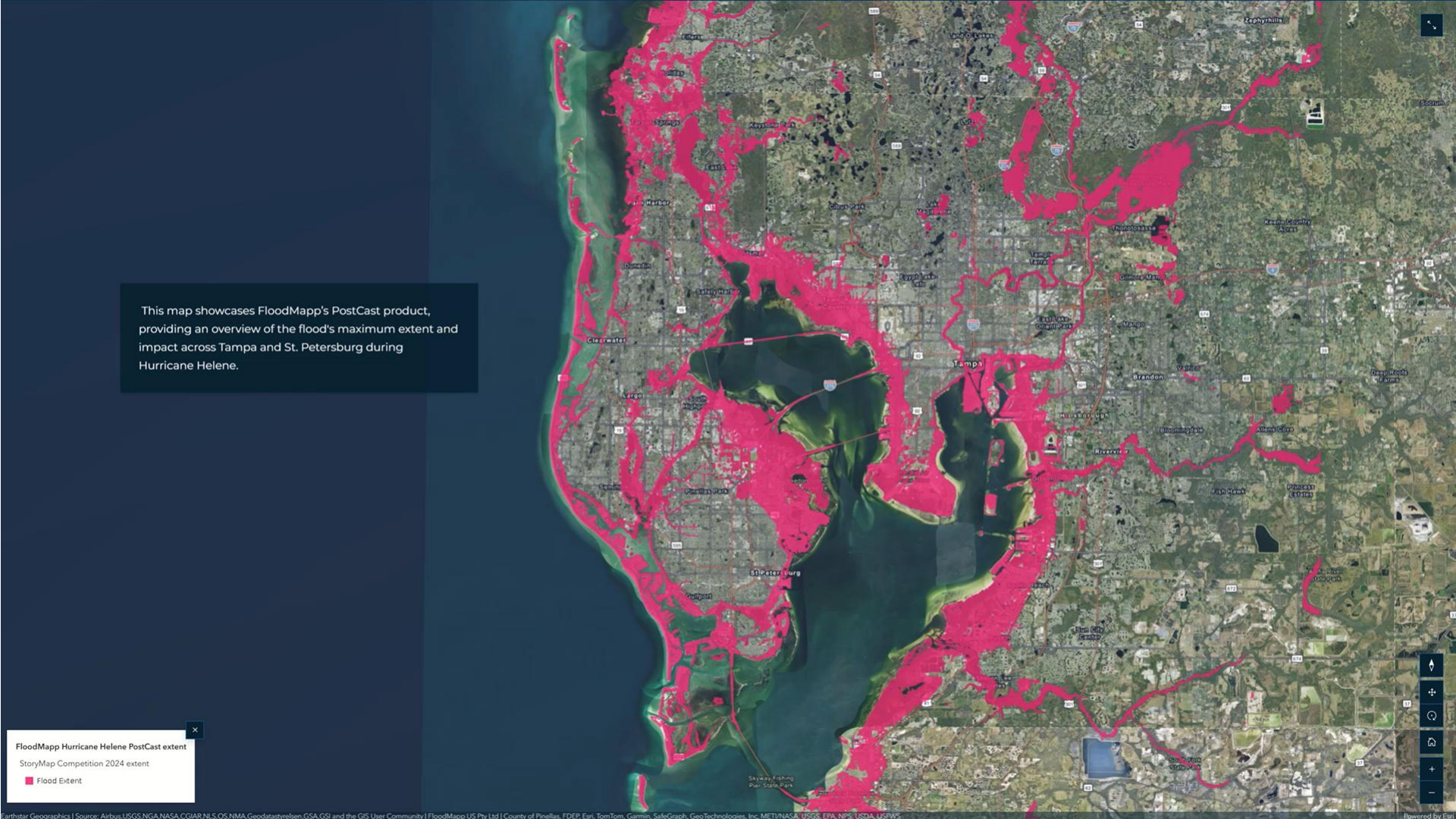
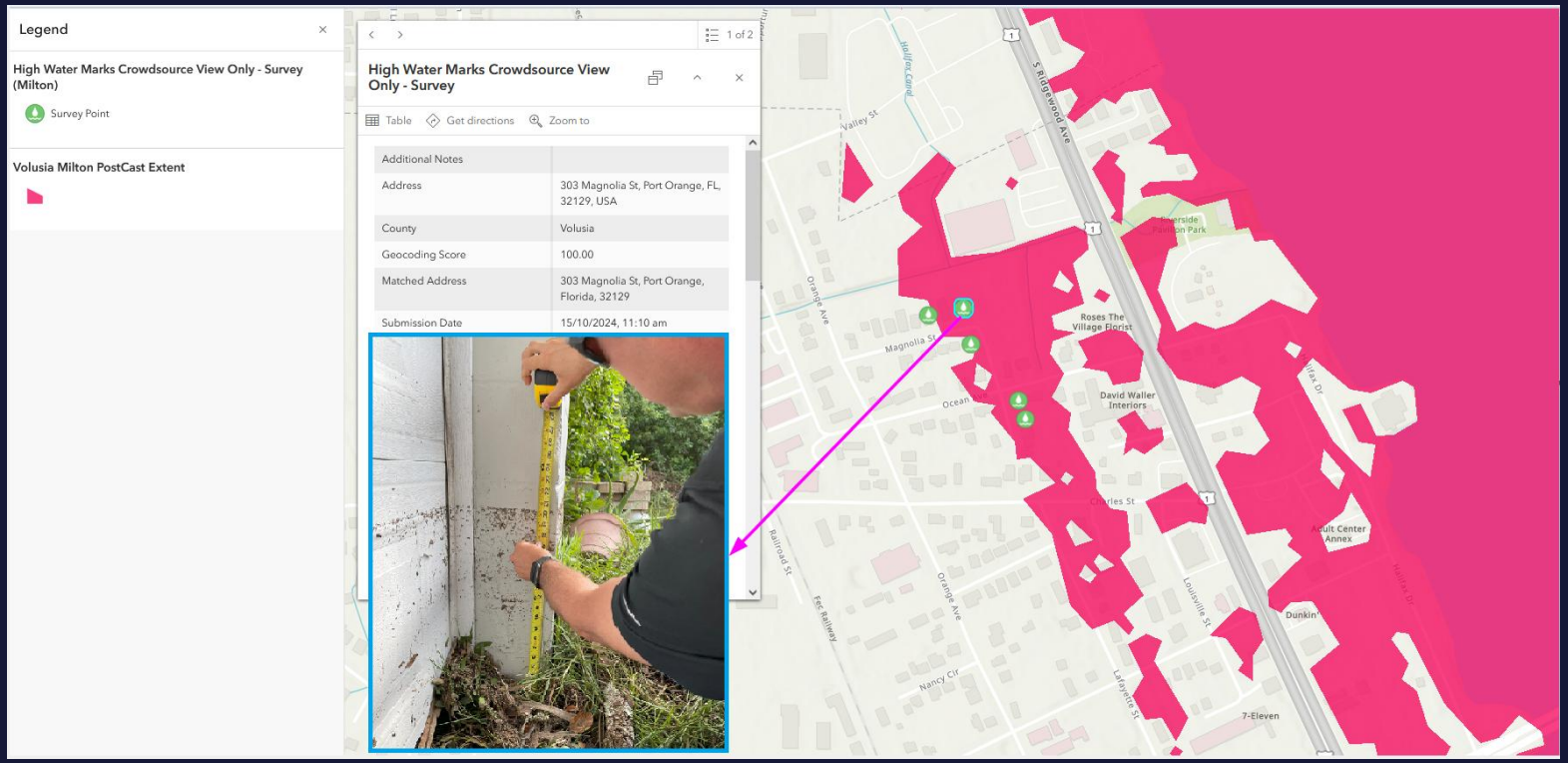
Hurricane Helene, FL

During Hurricanes Helene and Milton, FloodMapp's solutions delivered real-time flood intelligence in the SEOC that supported FDEM in a rapid response and recovery - backed by up to **90%** model accuracy.




This map showcases FloodMapp's PostCast product, providing an overview of the flood's maximum extent and impact across Tampa and St. Petersburg during Hurricane Helene.
FloodMapp Hurricane Helene PostCast extent
StoryMap Competition 2024 extent
Flood Extent
Zephyrhills
Clearwater
Tampa
Brandon
St Petersburg
Earthstar Geographics | Source: Airbus,USGS,NGA,NASA,CGIAR,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community | FloodMapp US Pty Ltd | County of Pinellas, FDEP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS
Powered by Esri

Validation - Milton



Flooding at 303 Magnolia St, Port Orange FL was flooded in Volusia County during Hurricane Milton – taken from FDEM High Water Mark dataset.

This corresponded well with FloodMapp PostCast.

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Live Flood Impact Dashboard

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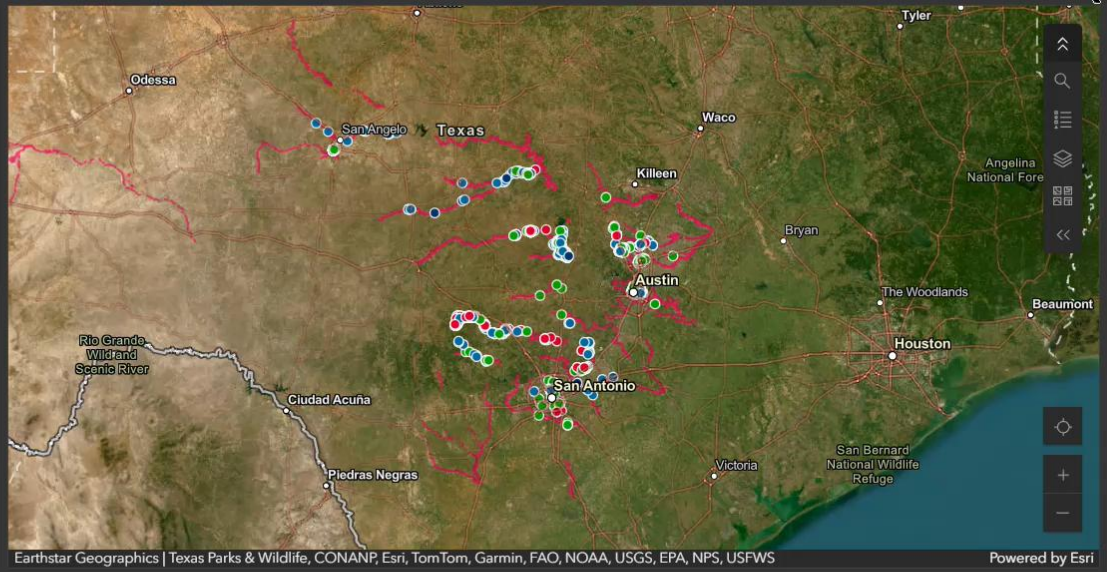
Structure impacts

1,951

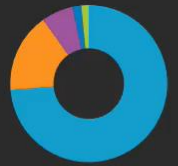
Damage estimate

$316,146,200

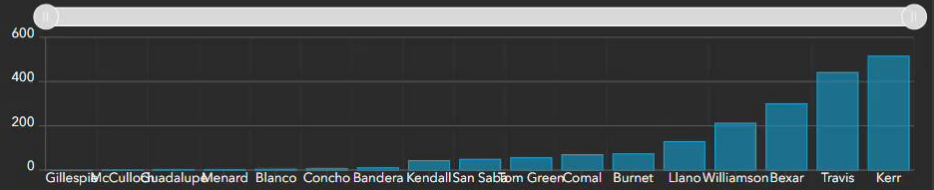


Damage severity

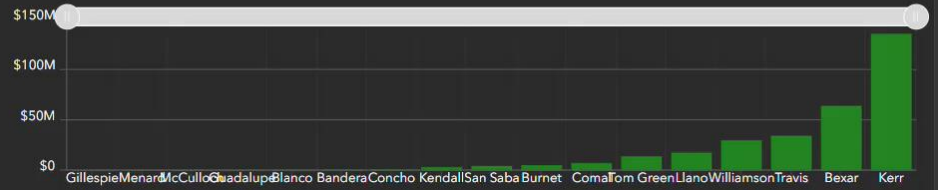
Occupancy type



Structure impacts by county



Damage estimate by county



Validation.

Two Rivers Apartments, Georgetown, Williamson County (30.6440703,-97.6755919)

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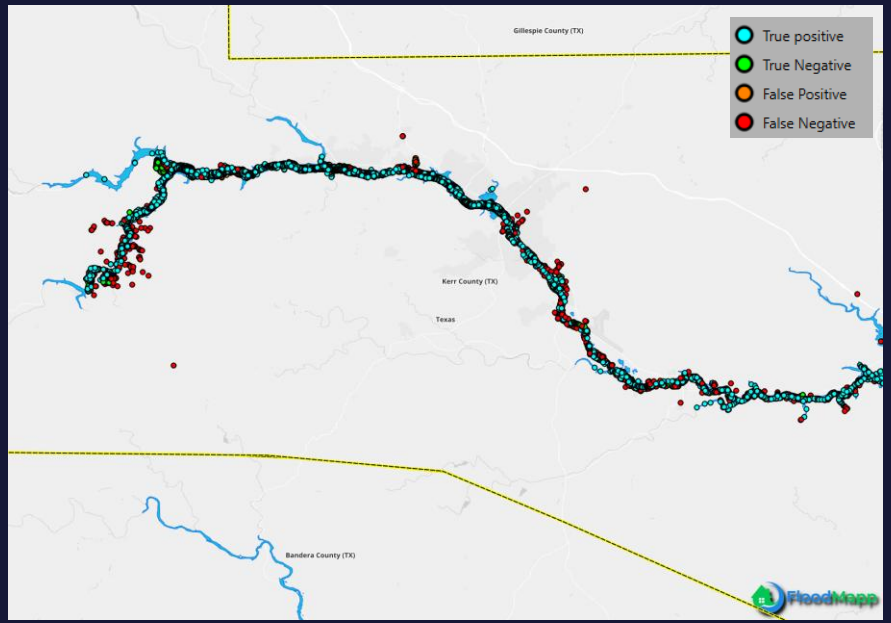
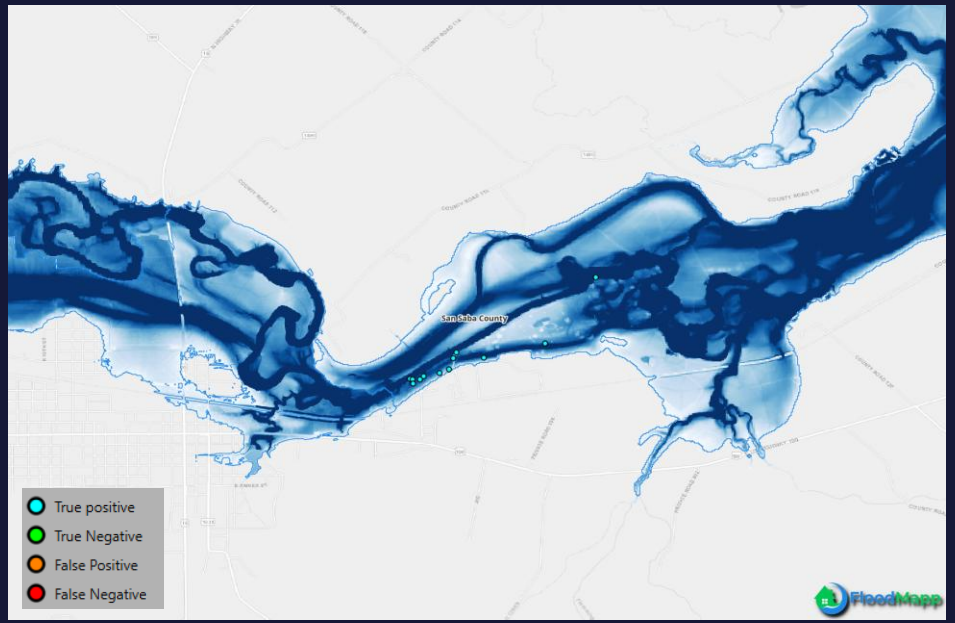
Waypoints Analysis.





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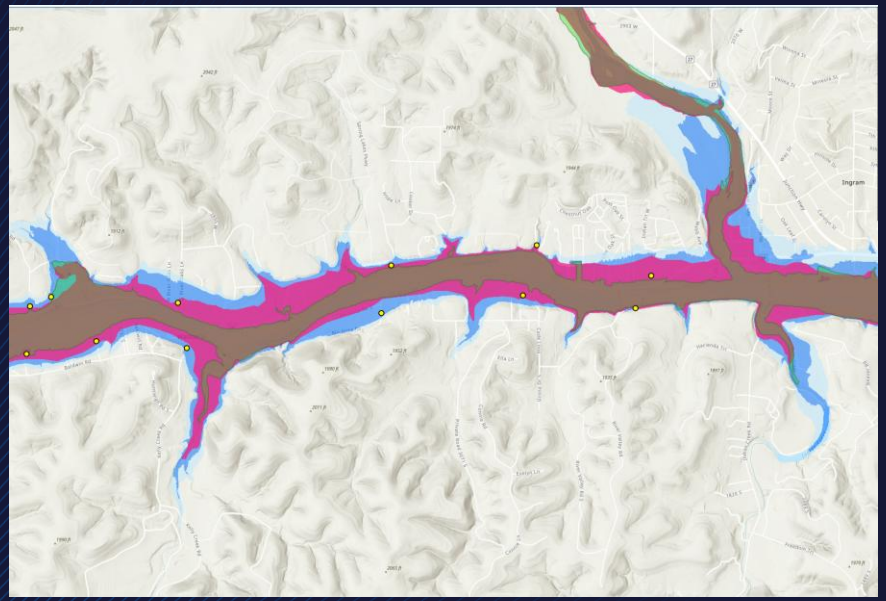
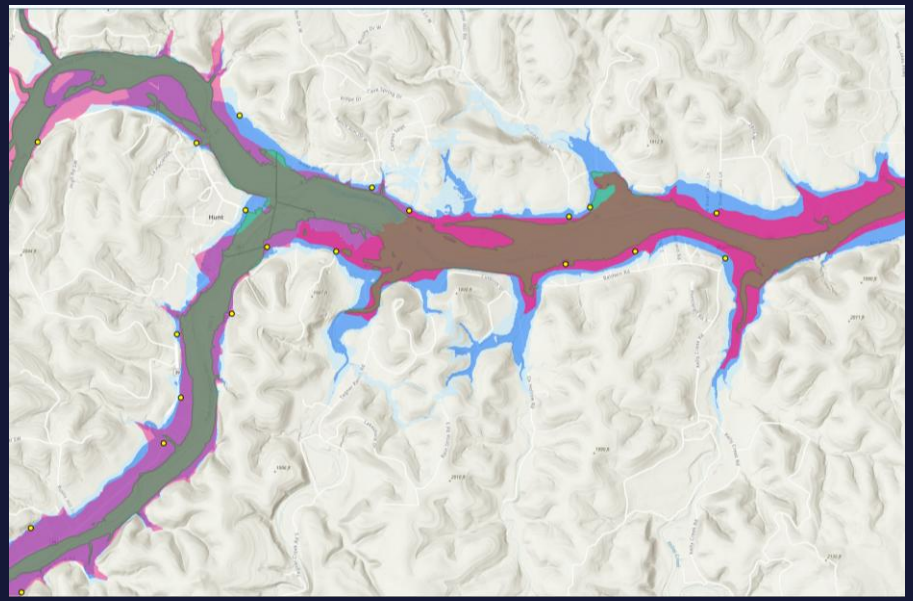
EO Challenges

Speed – Missing flash floods

Texas Floods, Hill Country – July 2025





PostCast Model

Satellite Imagery

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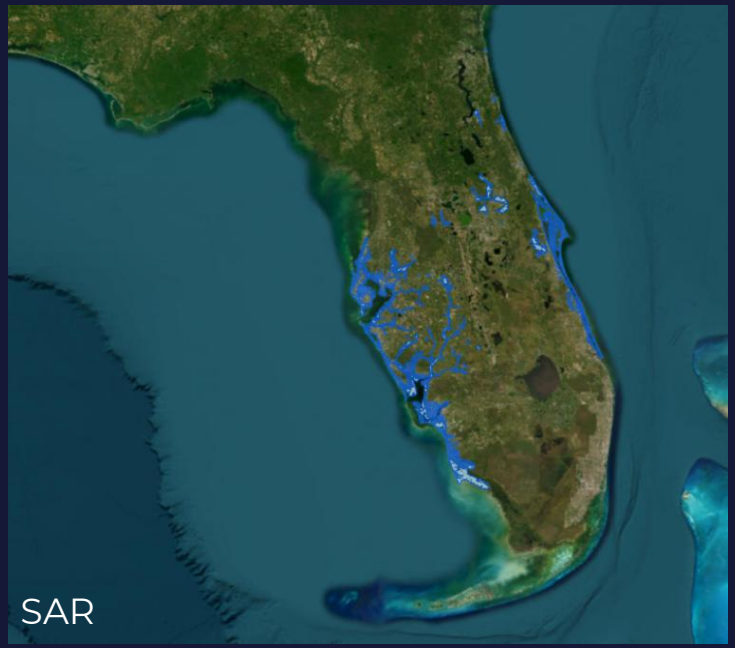
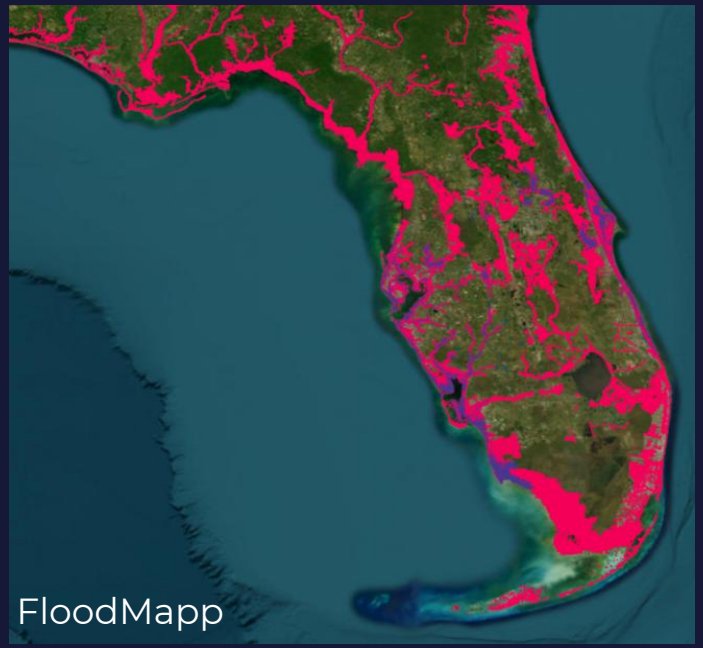
Coverage

Hurricane Milton





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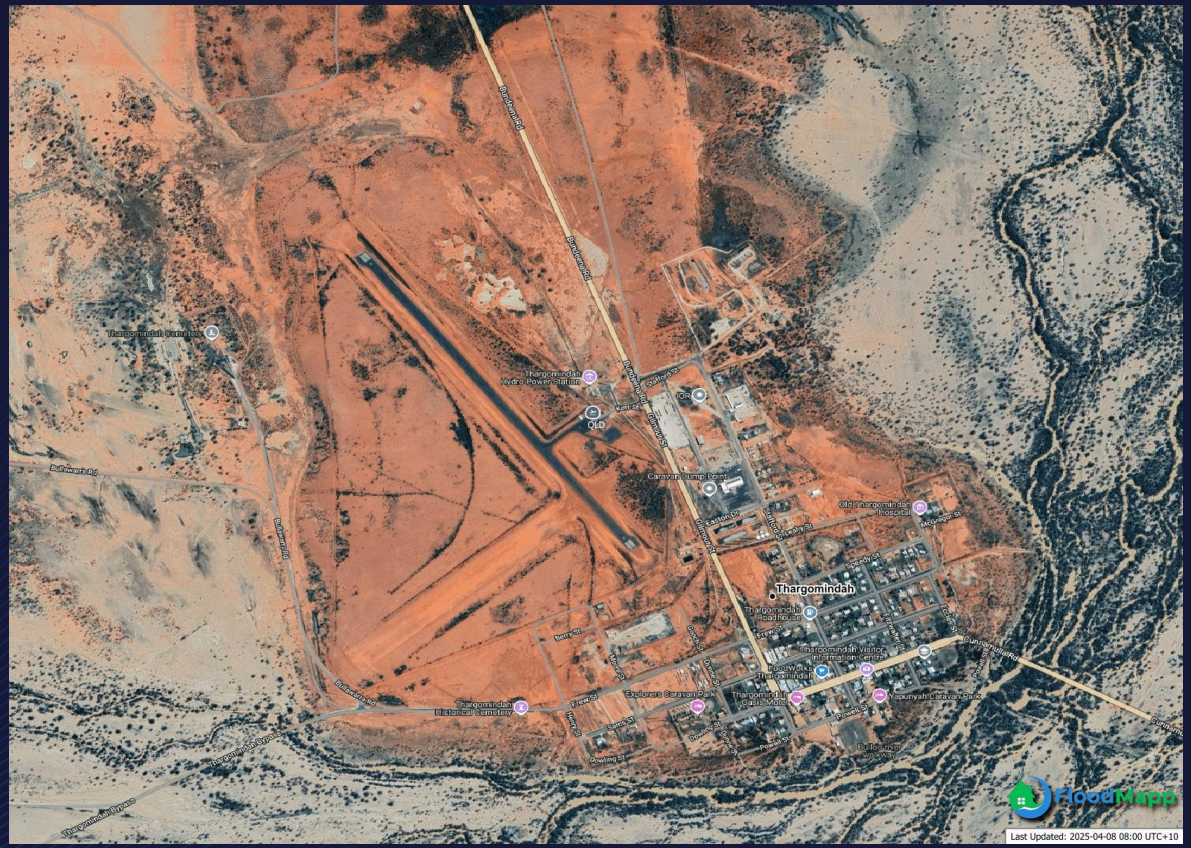
Timeliness - Missing the Peak



Thargomindah, Western Qld. April 2025 floods

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Static Post Flood – Can’t Forecast

FloodMapp DASH

Observed Flooding
(Satellite imagery)

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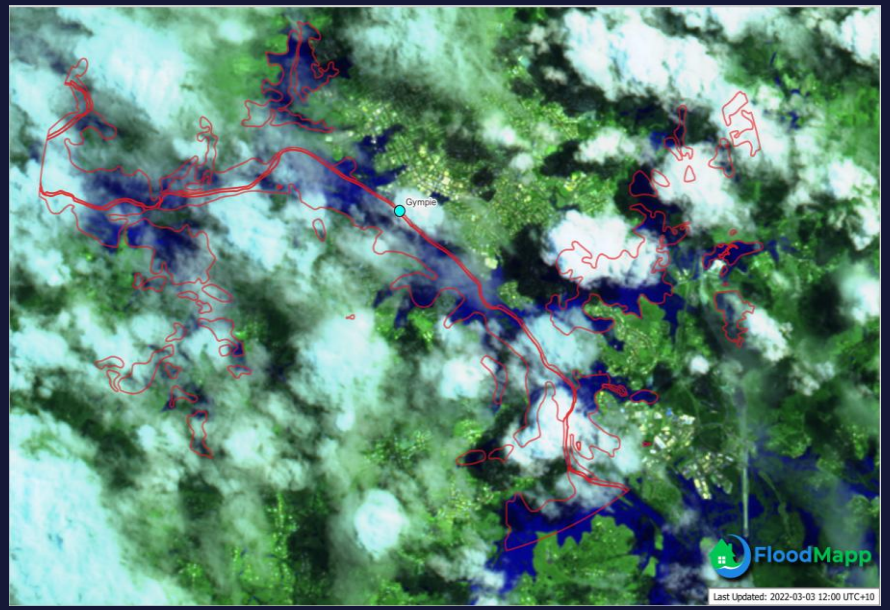
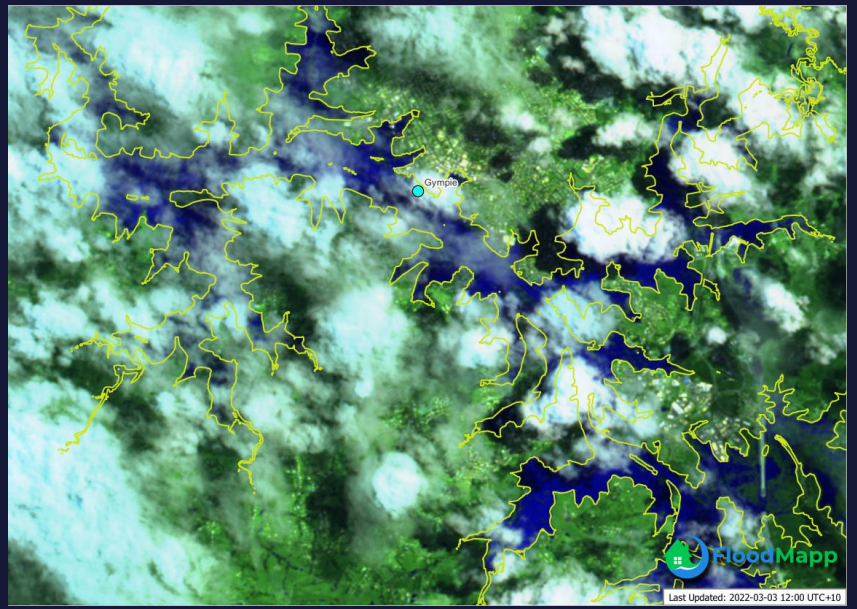
Cloud Cover

Gympie, 2022



Satellite Imagery



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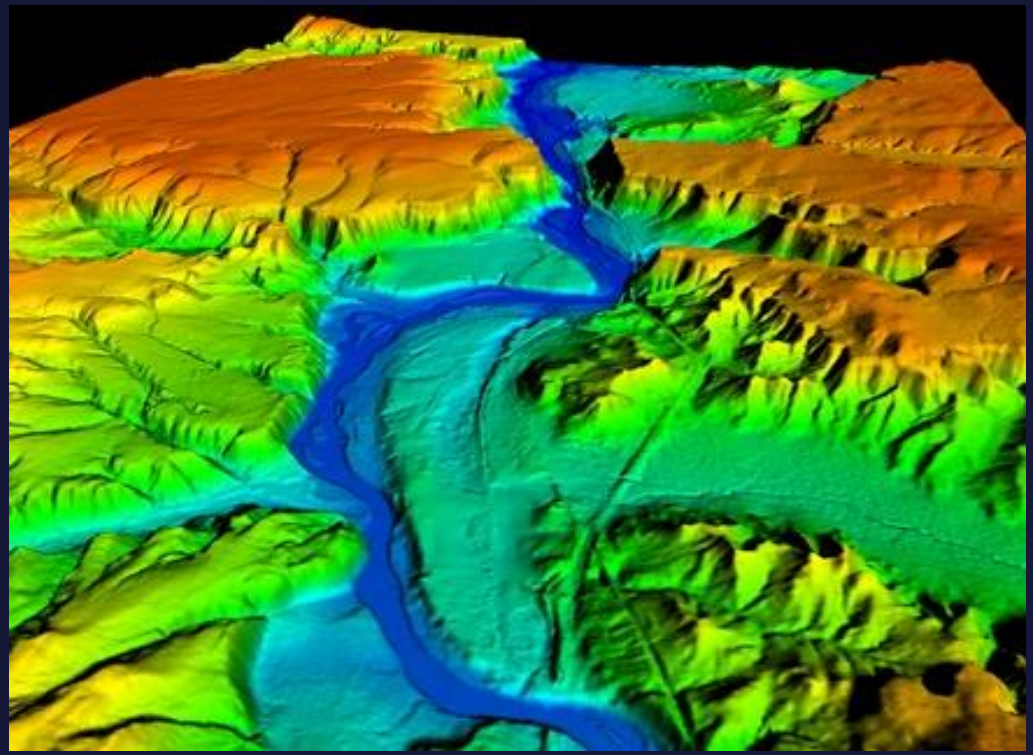
EO Opportunities

Elevation Data



The Higher the accuracy and resolution of the DEMs, the Higher the accuracy/resolution of the flood model and forecast.

Especially in QLD – 30m DEMs

Flooding in Lodi, NJ.

Flooding in Norfolk, VA.

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Mapping floods in ungauged areas

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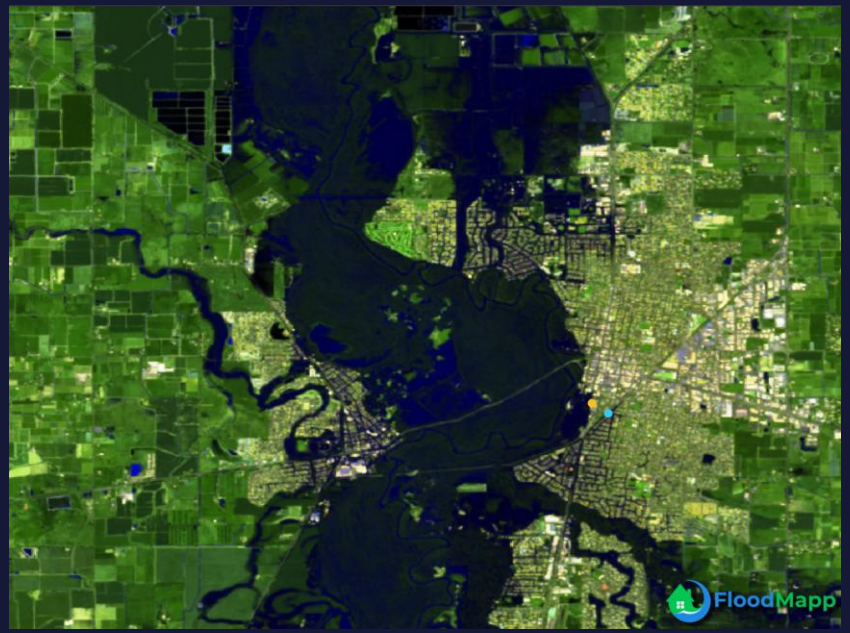
Calibration & Validation
Shepparton, VIC



17/10/2022

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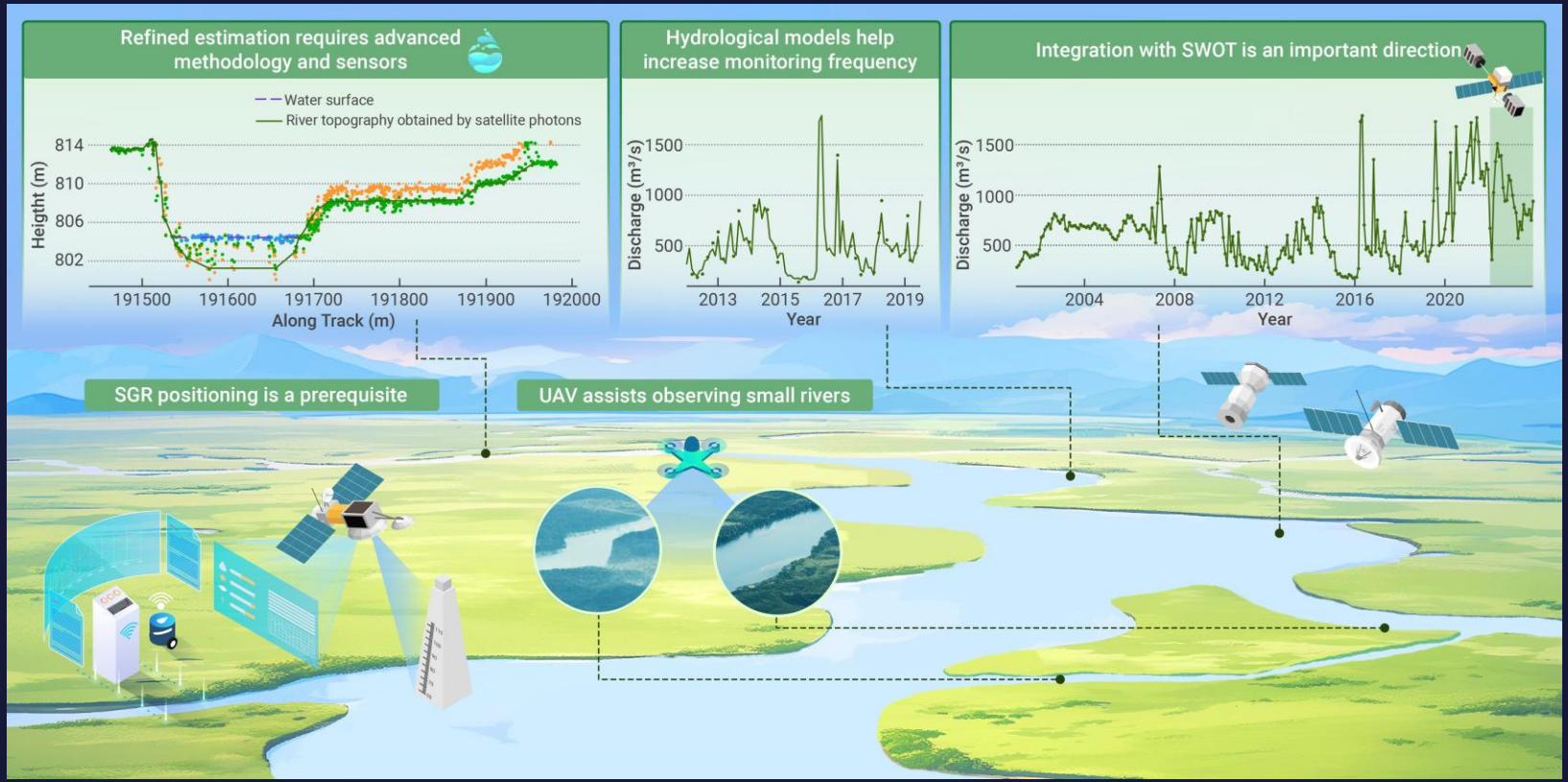
Surface Water Observation - Discharge



Flooding in Lodi, NJ.

Flooding in Norfolk, VA.

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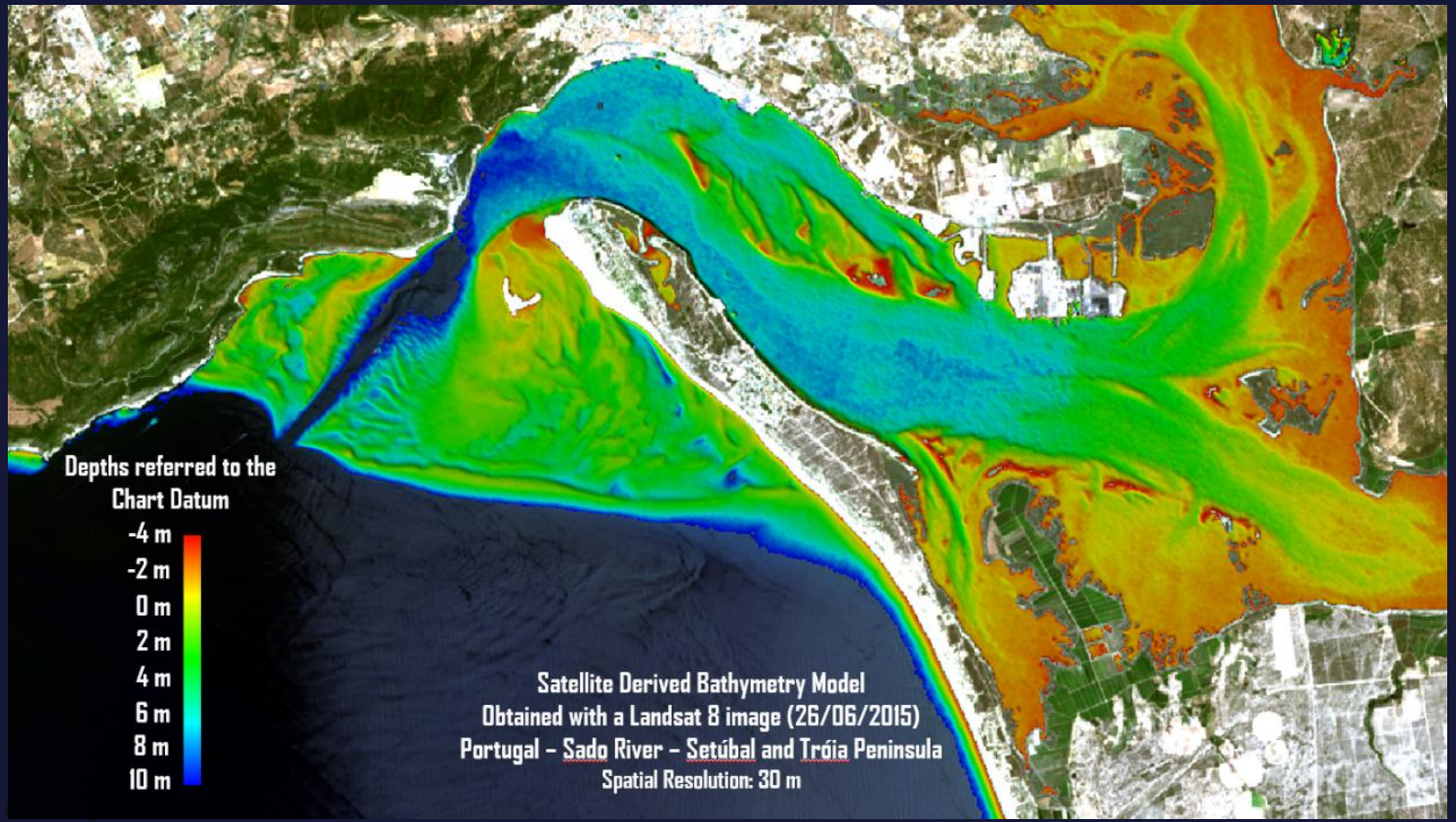
Bathymetry / Cross sections



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Thank you!

Questions?

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