



AND **Locate25** | **G**
THE NATIONAL GEOSPATIAL CONFERENCE

Presented at the FIG Working Week 2025
6-10 April 2025 in Brisbane, Australia
FIG **Geospatial**
Council of Australia
Brisbane, Australia 6-10 April

Collaboration, Innovation and Resilience: Championing a Digital Generation

GIS Derived Real-Time Impact Analytics to support Flood Emergency Managers

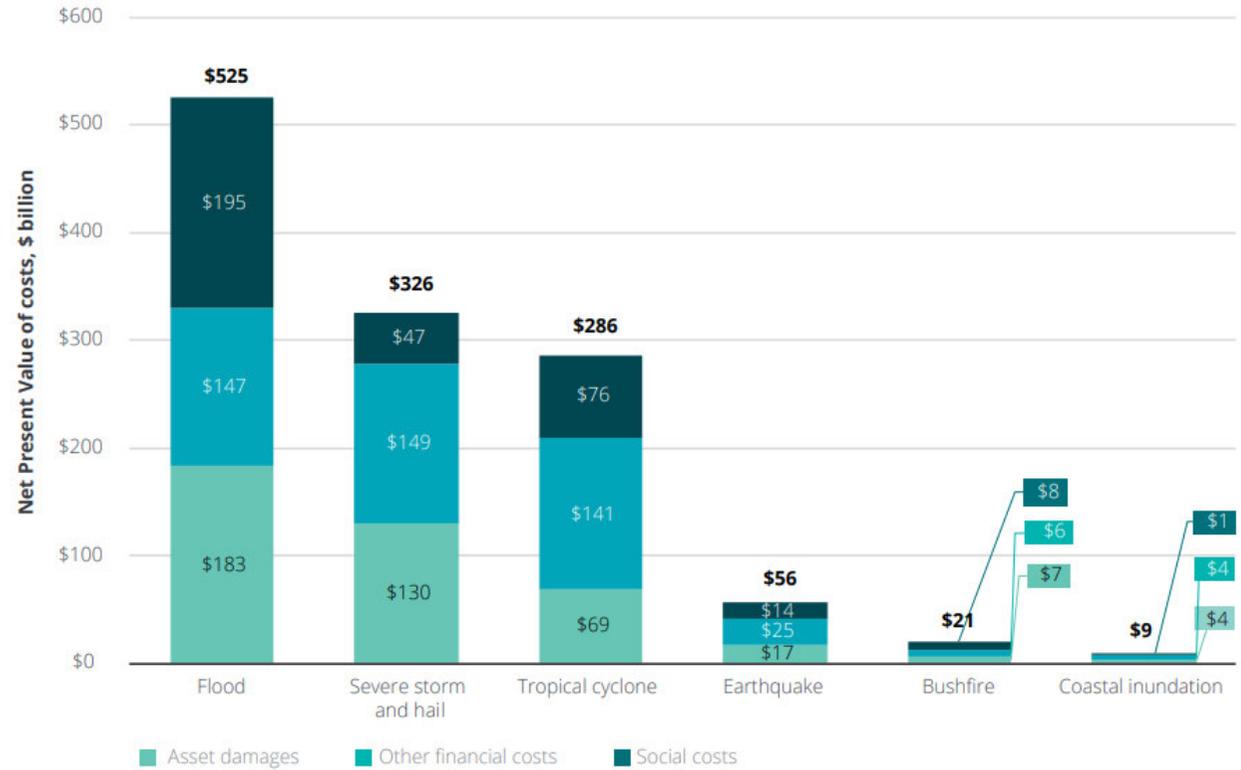


PLATINUM SPONSORS



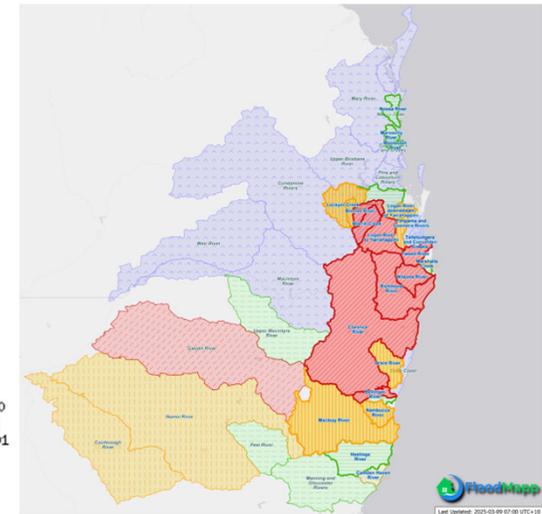
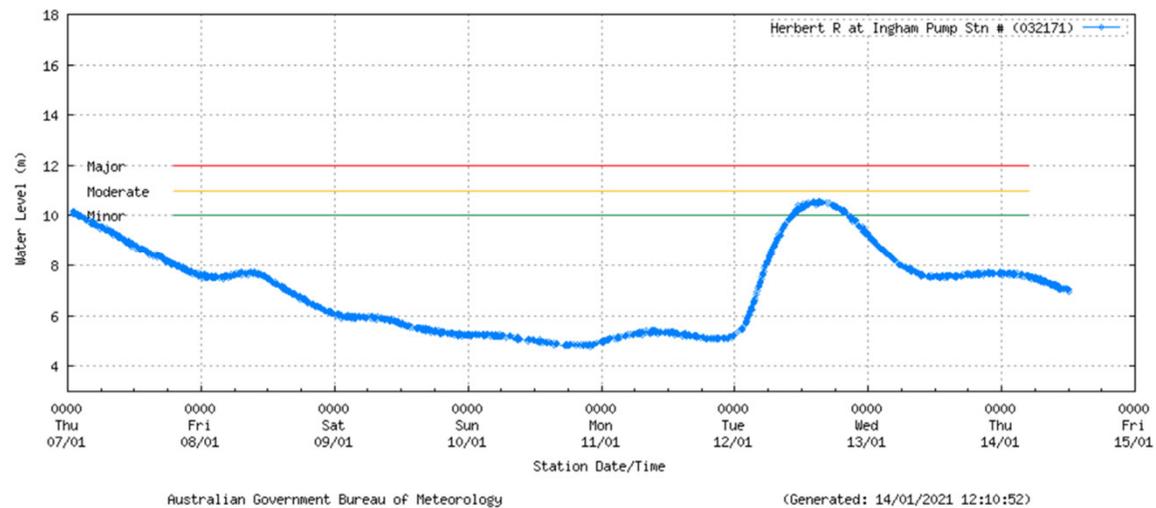
Flooding – Our biggest Hazard.

Total costs of natural disasters under a low emission scenario over the next forty years



Source: Deloitte Access Economics 2021

Challenge: Localised impact data



You might know it's going to flood.
But you can't respond effectively unless you know **WHERE**.

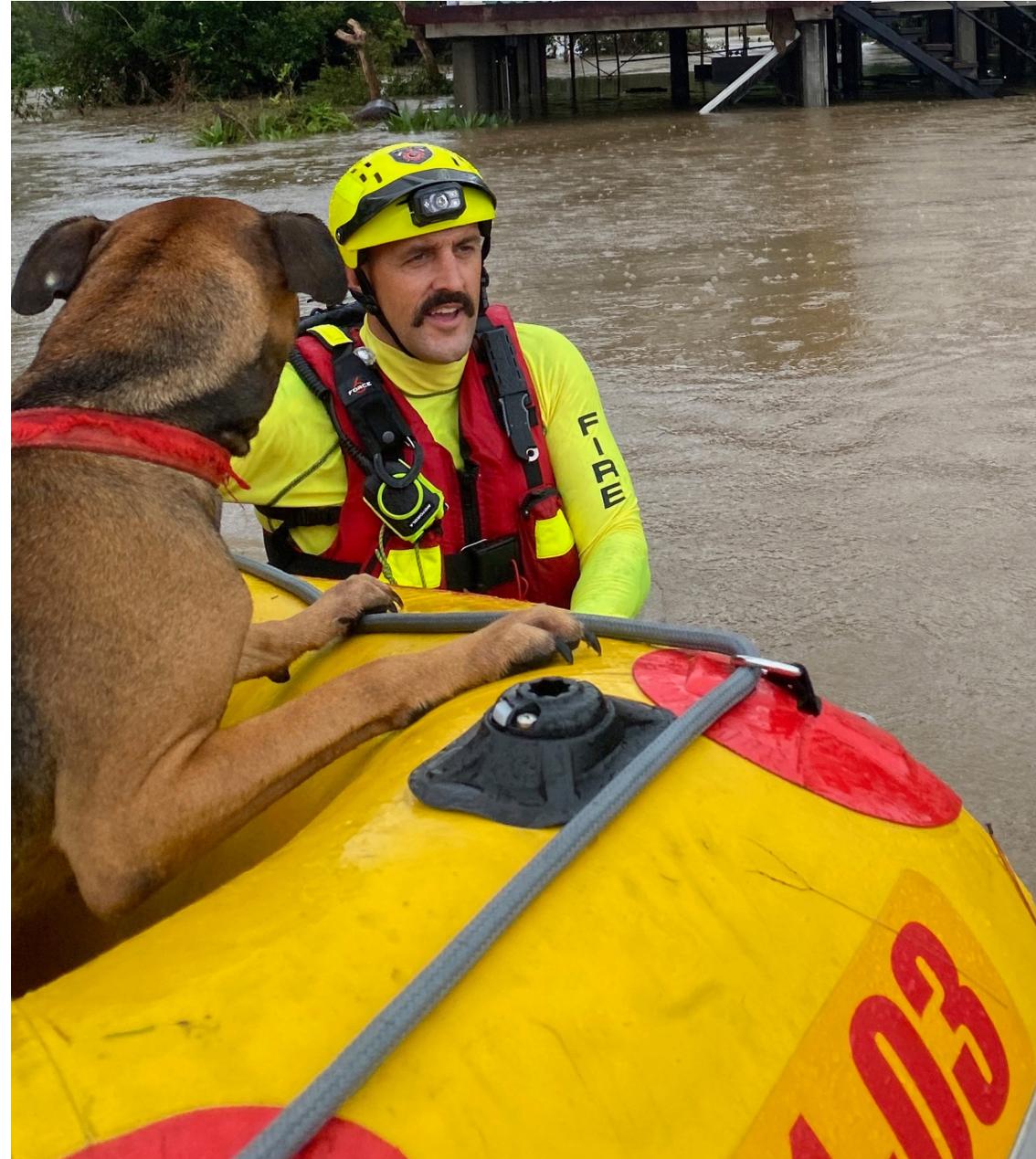
Mission

Localised impact data to:

Improve Public Safety.

Prevent damage.

Enhance preparedness, response
and recovery.



Intelligence – Before, During, After

ForeCast



NowCast



PostCast



Preparedness



Response



Recovery

Key Customers

Validated product market fit. **Trusted by** government and critical infrastructure; successfully **saving lives** and **preventing damage**.

FEDERAL



Australian Government

STATE & LOCAL

CITY of BOSTON



THE CITY OF
NORFOLK

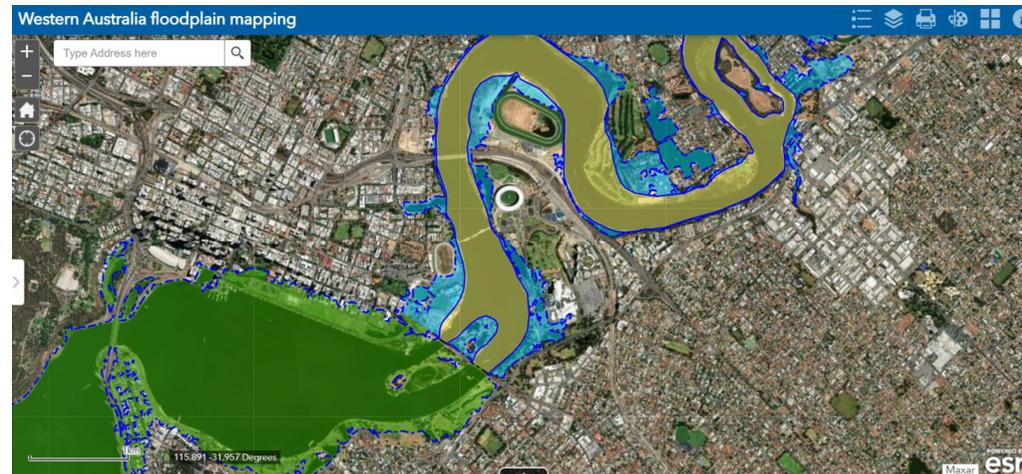
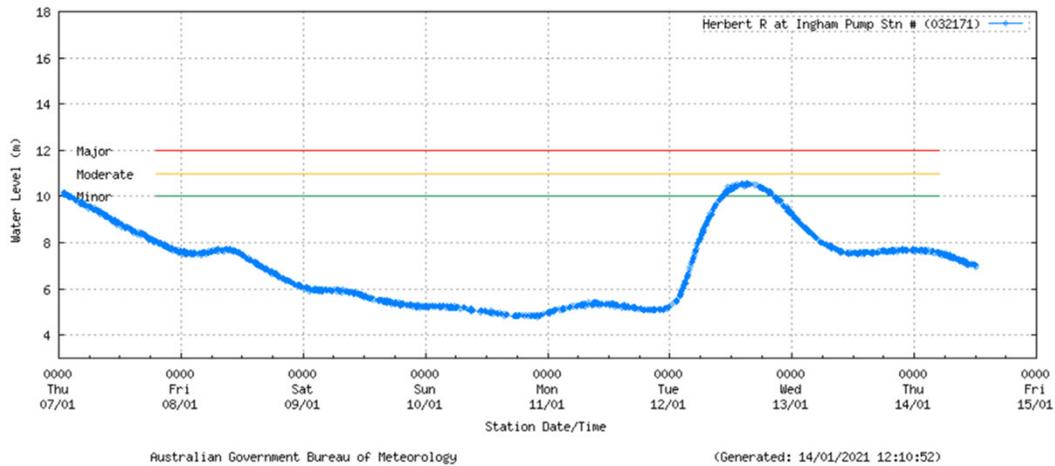


Transport
for NSW

CRITICAL INFRASTRUCTURE



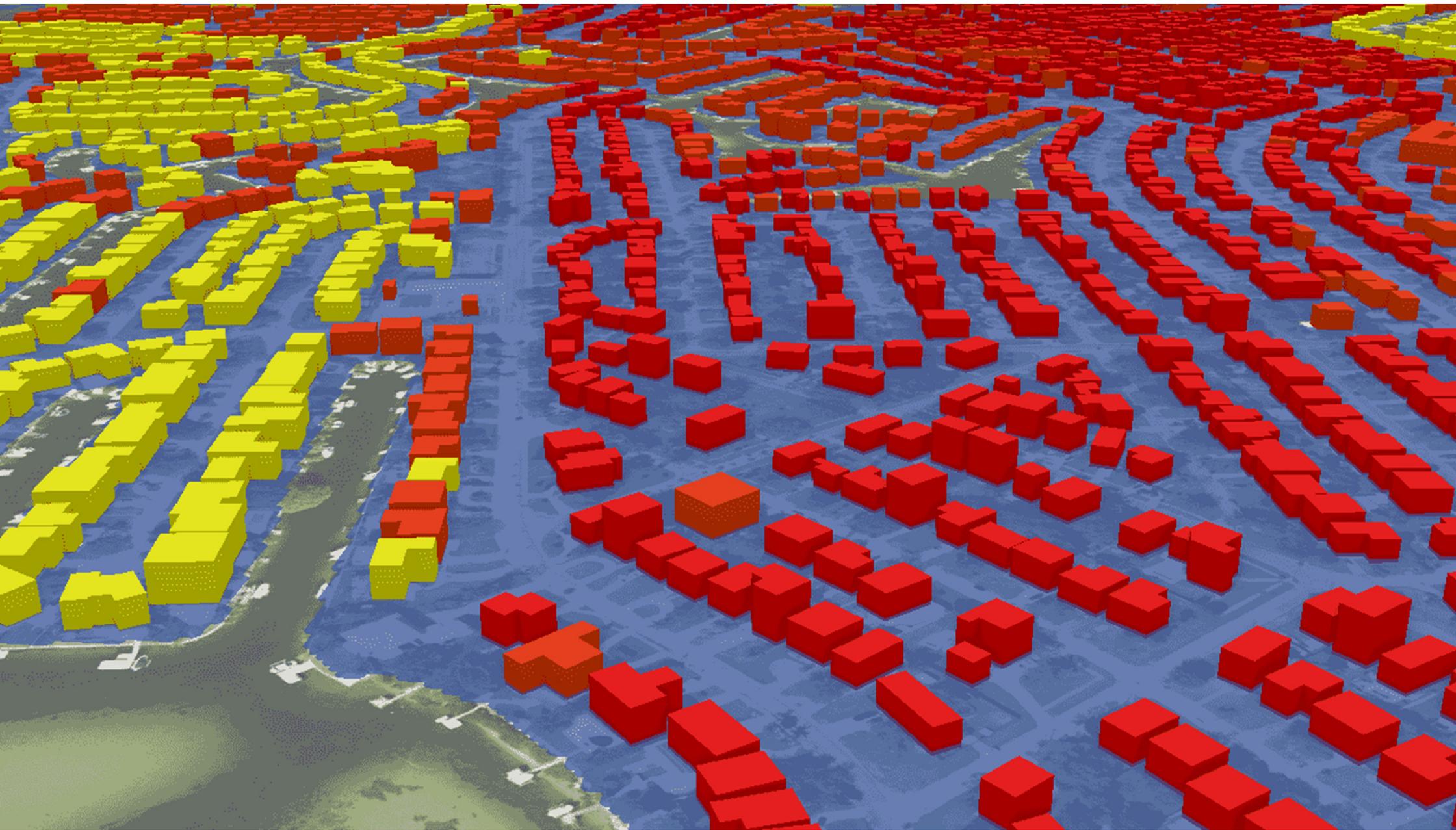
The Power of Big Data



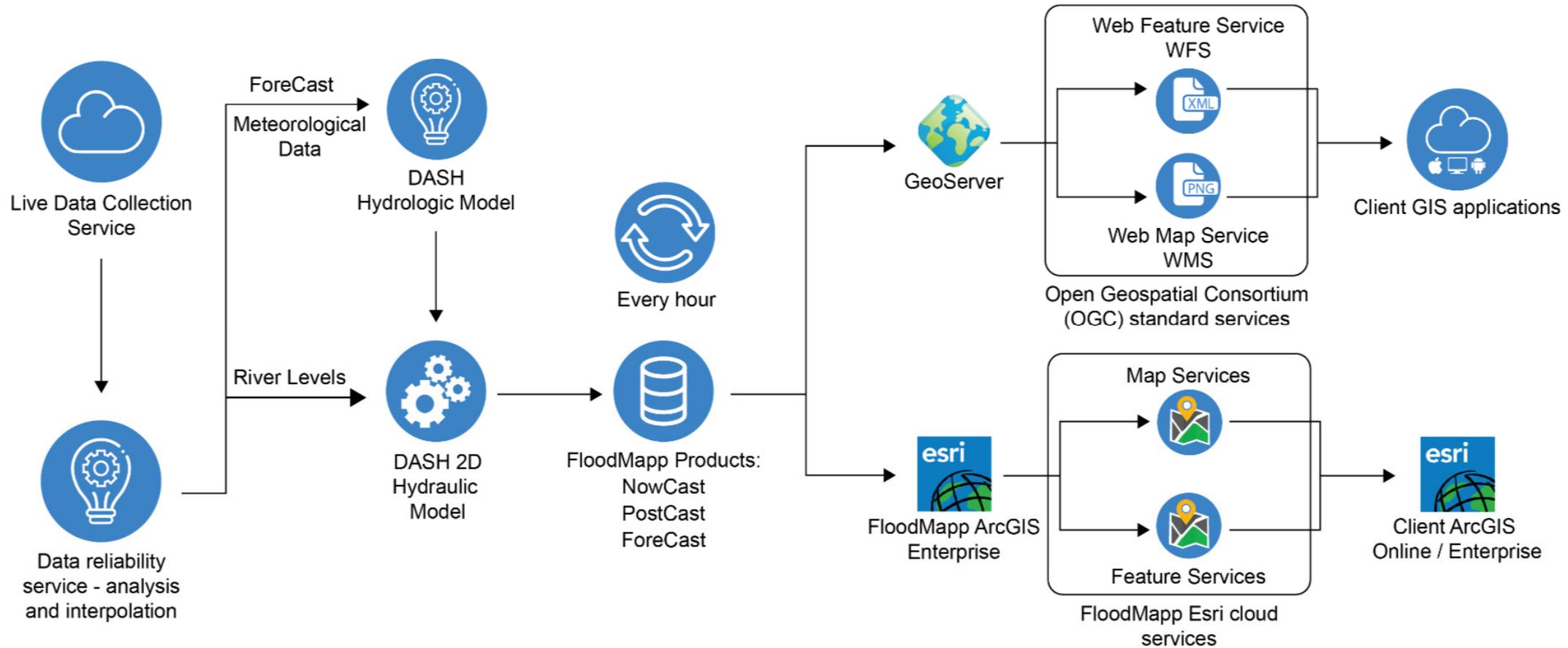
FloodMapp DASH

Live, **operational** impact intelligence

- Purpose built **for emergency management**
- **Operational** - real-time situational awareness
- Flood **extent, depth, and impacts** delivered via API into any GIS system.
- Dynamic **hourly updates** to reflect changing conditions using live rainfall & flood sensor data.
- Enhances physical hydrology and hydraulics with **AI and Machine learning**
- **Scalable** from **property level** to **national** scale. 10m - 1m resolution.
- Property level accuracy



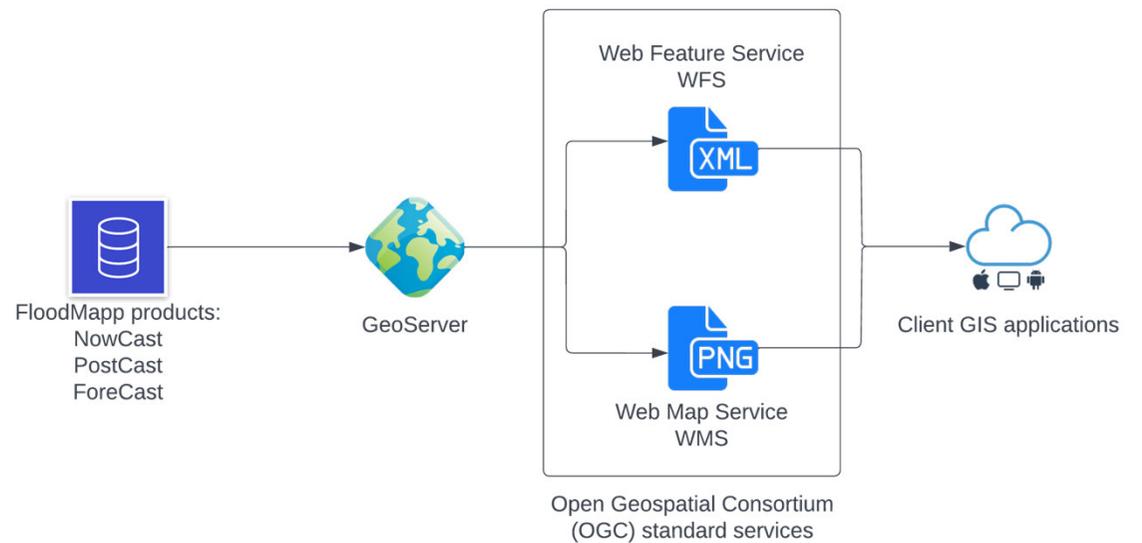
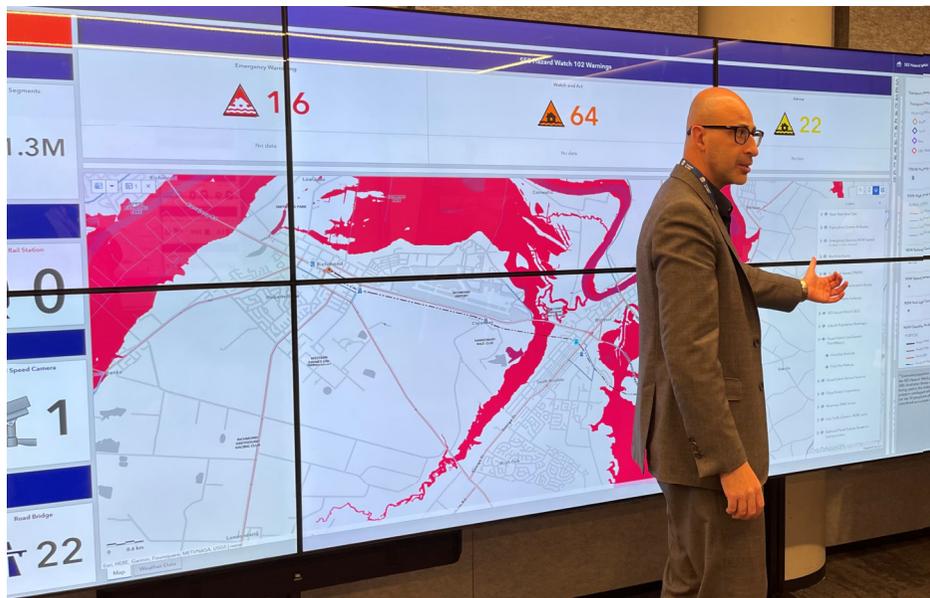
Operational - Continuous Service



Interoperable Delivery

FloodMapp's Commitment:

- ✓ Live data feed
- ✓ Delivery via API as WMS/WFS or Esri REST Services
- ✓ Connects to any GIS-enabled platform
- ✓ OGC Compliant
- ✓ 24/7 accessibility with 99.5% uptime

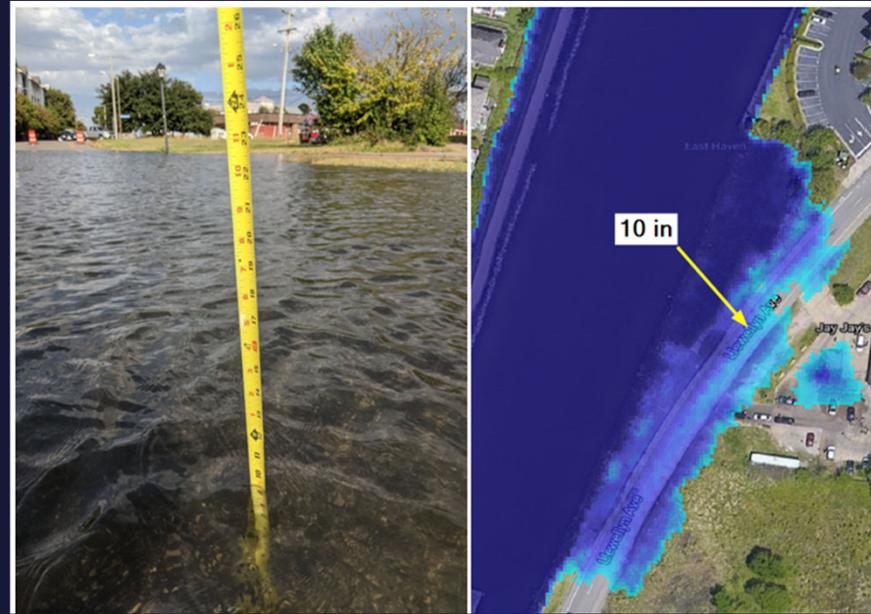


Calibration & Validation.

- ✓ River gauge hydrographs
- ✓ Media imagery
- ✓ Drone videos
- ✓ Pre-existing flood studies
- ✓ Traffic camera imagery
- ✓ Social media photos/videos
- ✓ High water marks
- ✓ Satellite imagery



Flooding in Lodi, NJ.



Flooding in Norfolk, VA.



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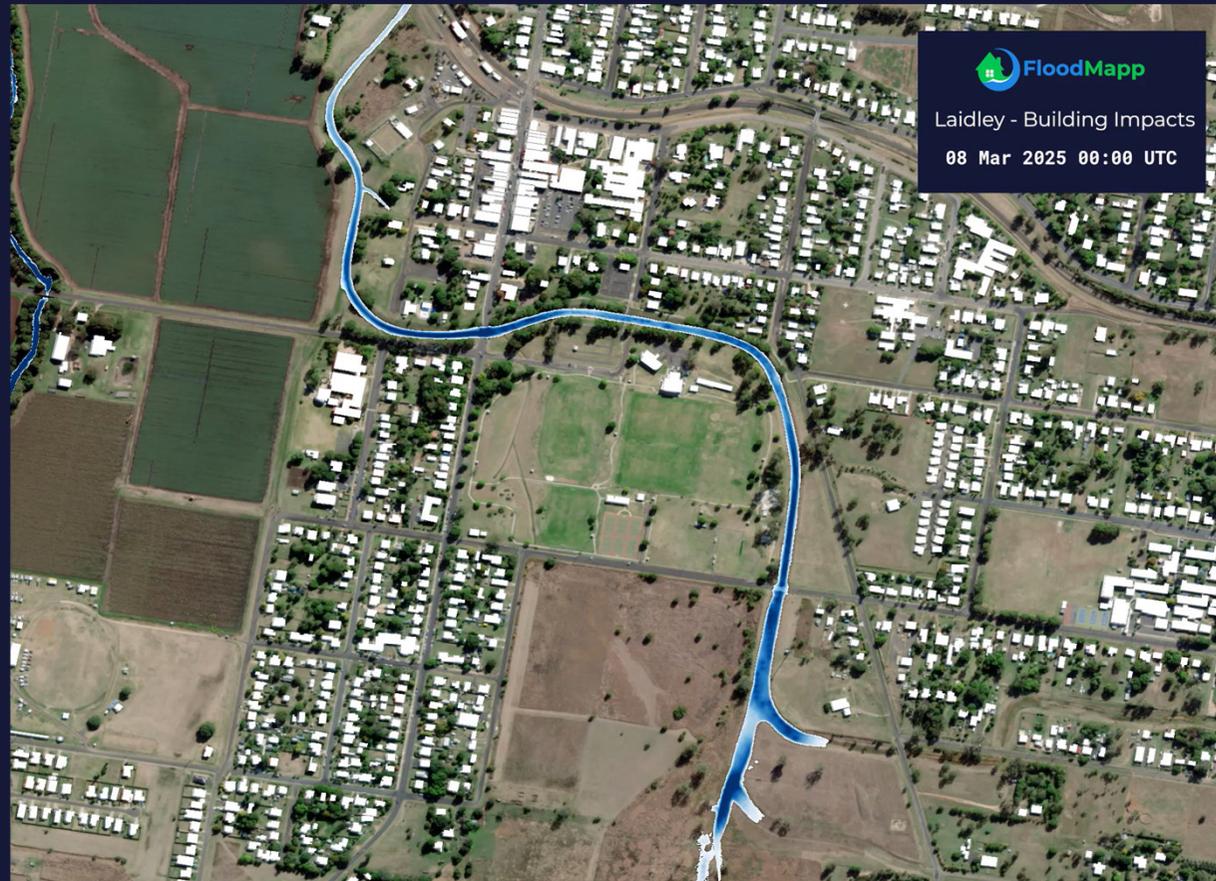
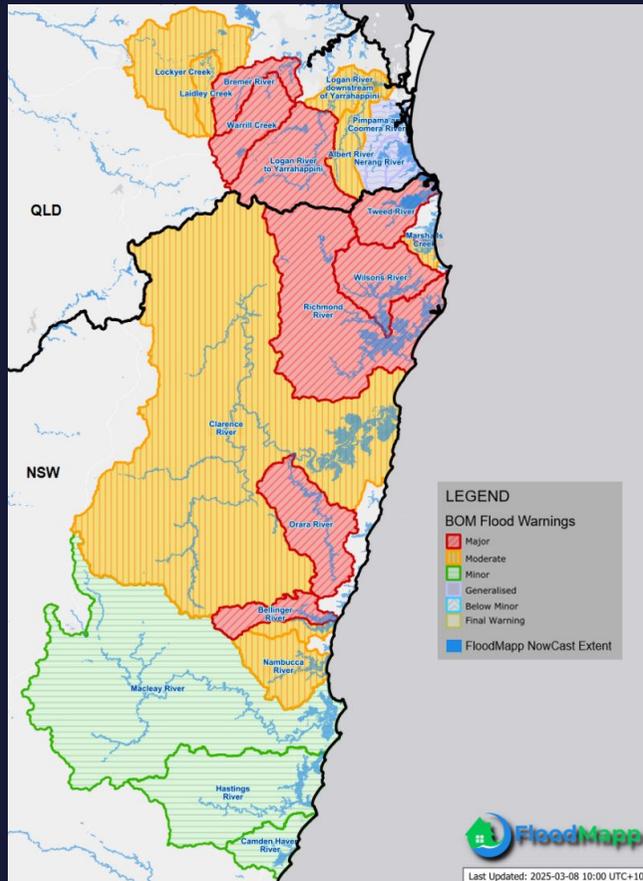
Tropical Cyclone Alfred ForeCast, NowCast March 2025



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Catchment Level to Property Level

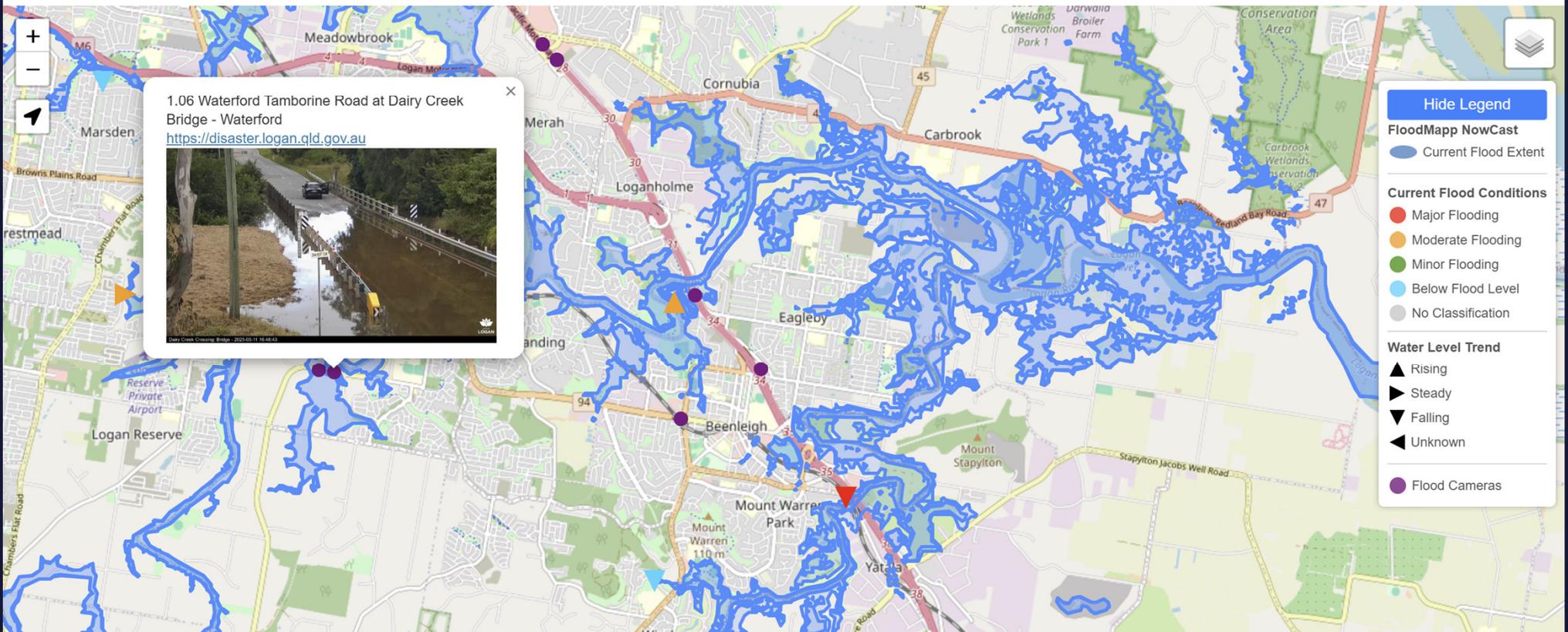


Situational Intel. Crowdsourced data.



NowCast - Ex TC Alfred

⚠ Make sure you understand some of the [limitations](#) of this NowCast.



State Disaster Coordination Centre

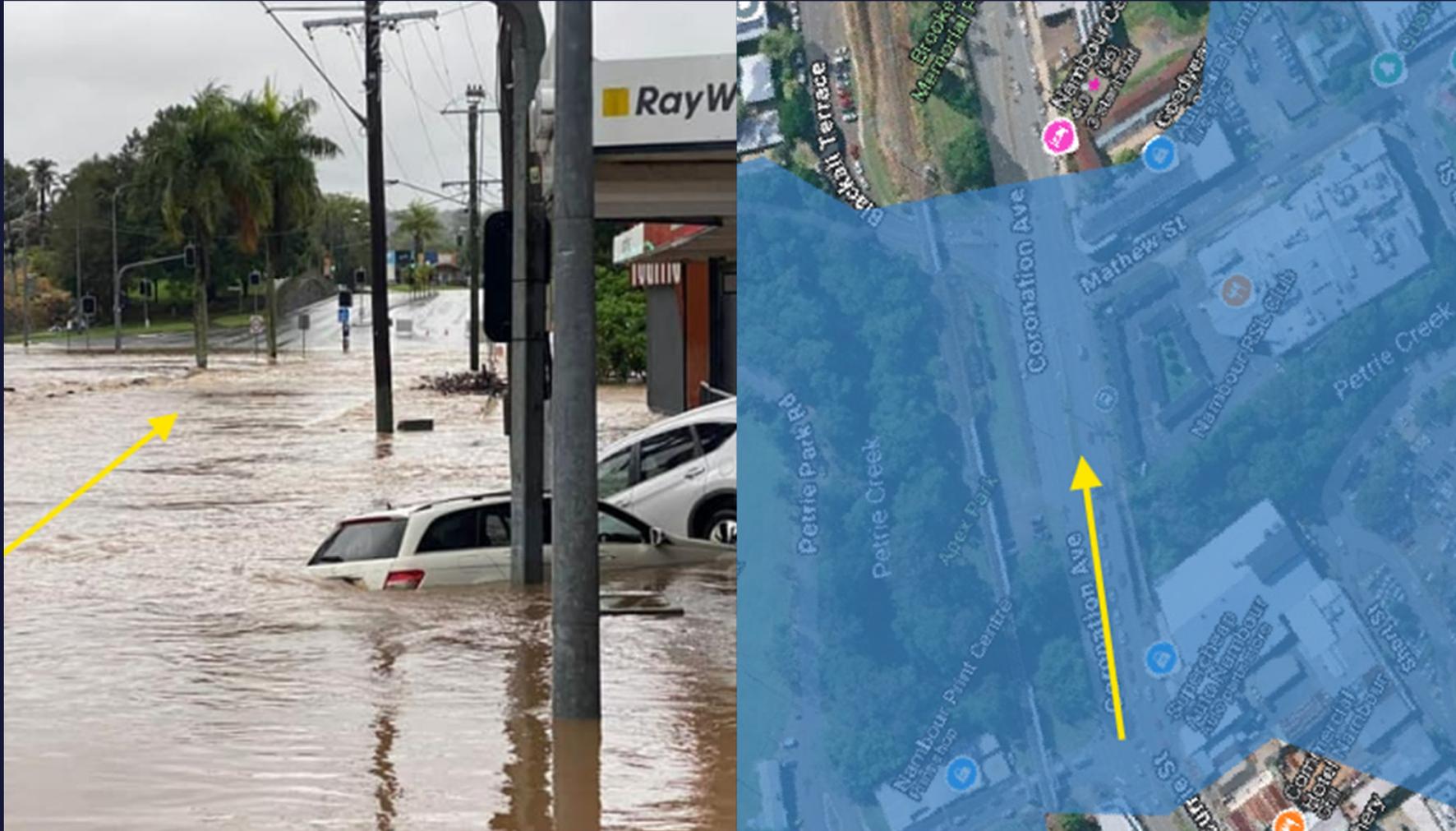


Laidley Recreational Reserve



FloodMapp
Last Updated: 2025-03-11 14:00 UTC+10

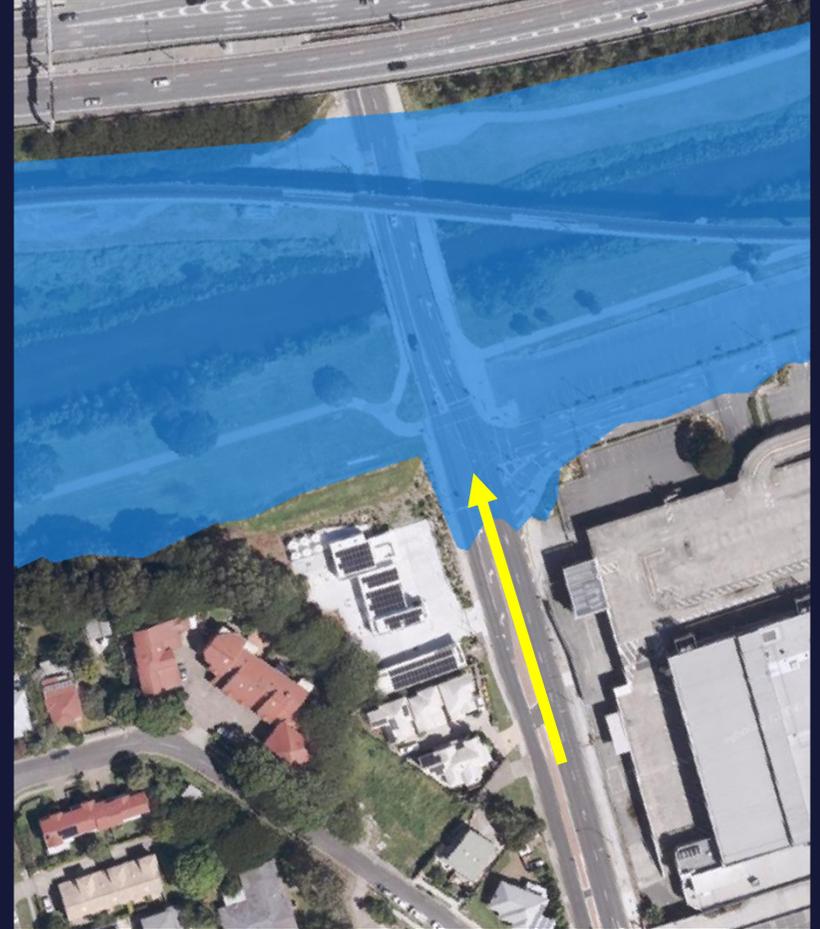
Nambour – Coronation Ave



Obi Obi Ck - Manuel Hornibrook Bridge



Kedron Brook - Widdop St Nundah



Coomera Boat Ramp, QLD

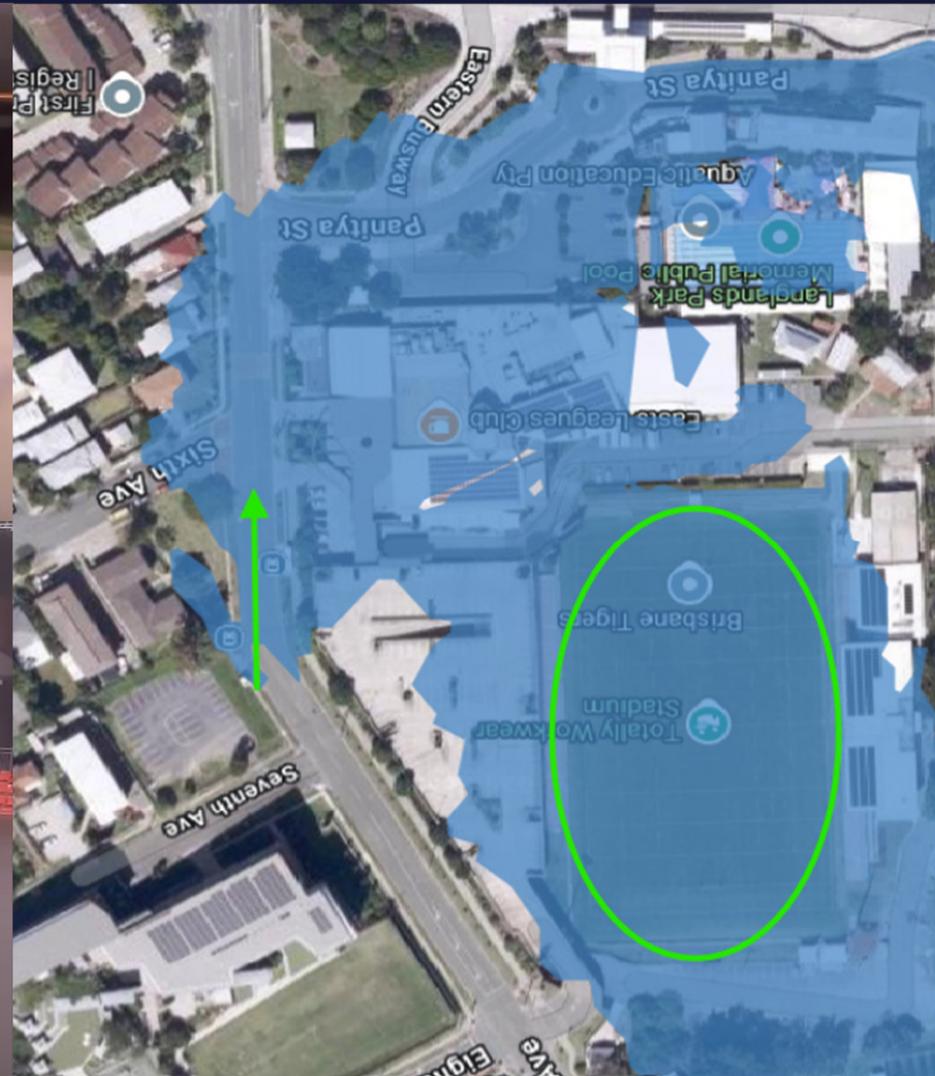


Enoggera Ck – Officeworks Wilston

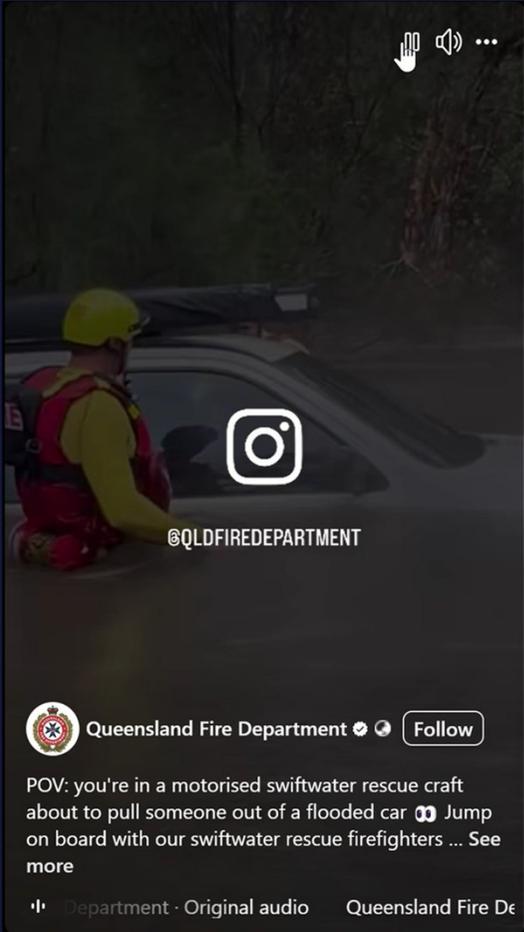


Coorparoo, Brisbane

March, 2025



Helping Emergency Services save lives.



Instagram post interface showing a video of a firefighter in a motorised swiftwater rescue craft. The post includes the Instagram logo, the handle @QLDFIREDEPARTMENT, and the text: "POV: you're in a motorised swiftwater rescue craft about to pull someone out of a flooded car 🚒 Jump on board with our swiftwater rescue firefighters ... See more".





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Brisbane, Australia 6–10 April

Western QLD Floods April 2025



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State-wide Deployment

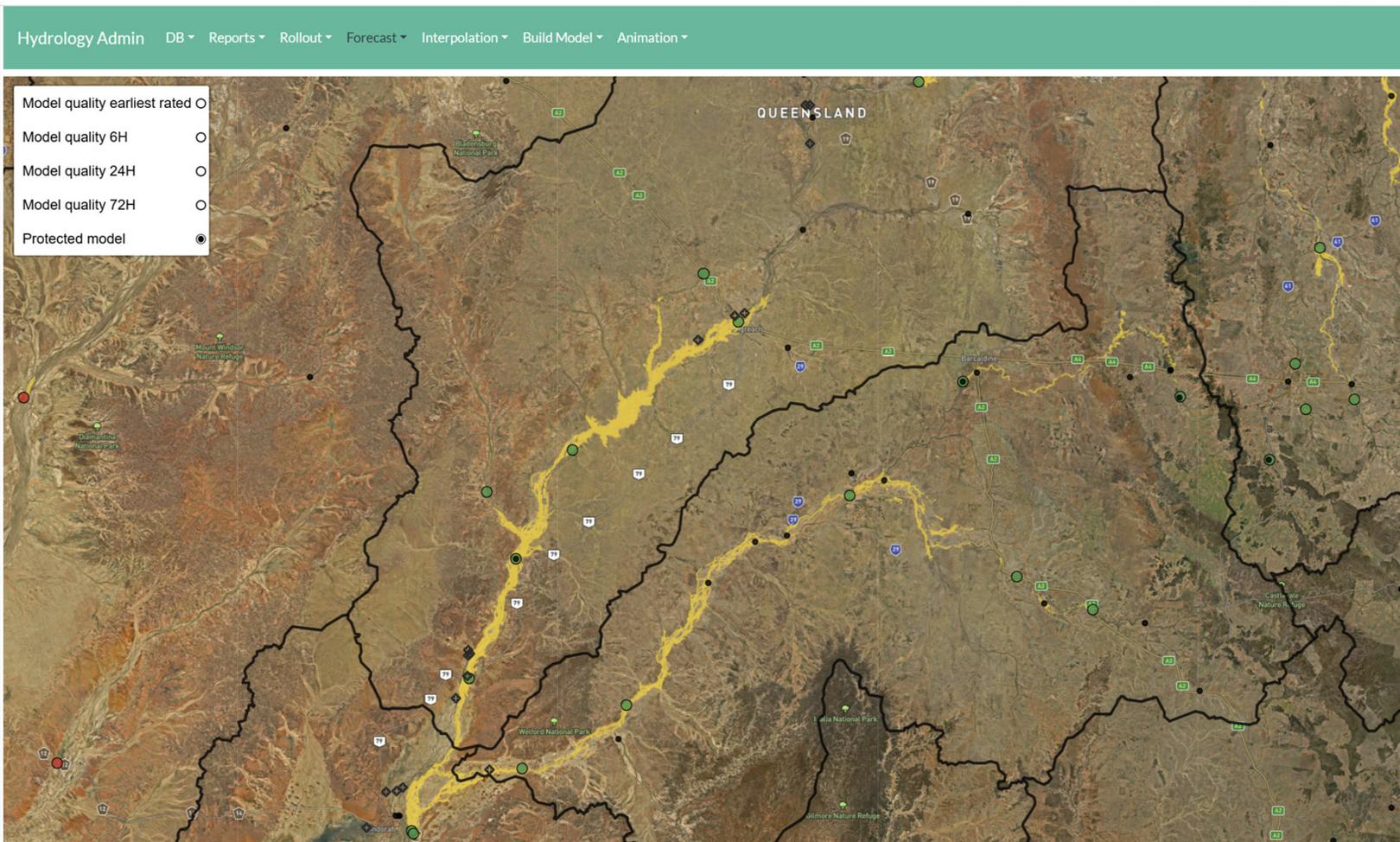
April, 2025

Up to 1400 gauges



Thomson River ForeCast

Stonehenge, QLD April 2025



Catchment Size

Stonehenge and Retreat gauges 139,000km²

Thomson River ForeCast

Stonehenge, QLD March 2025

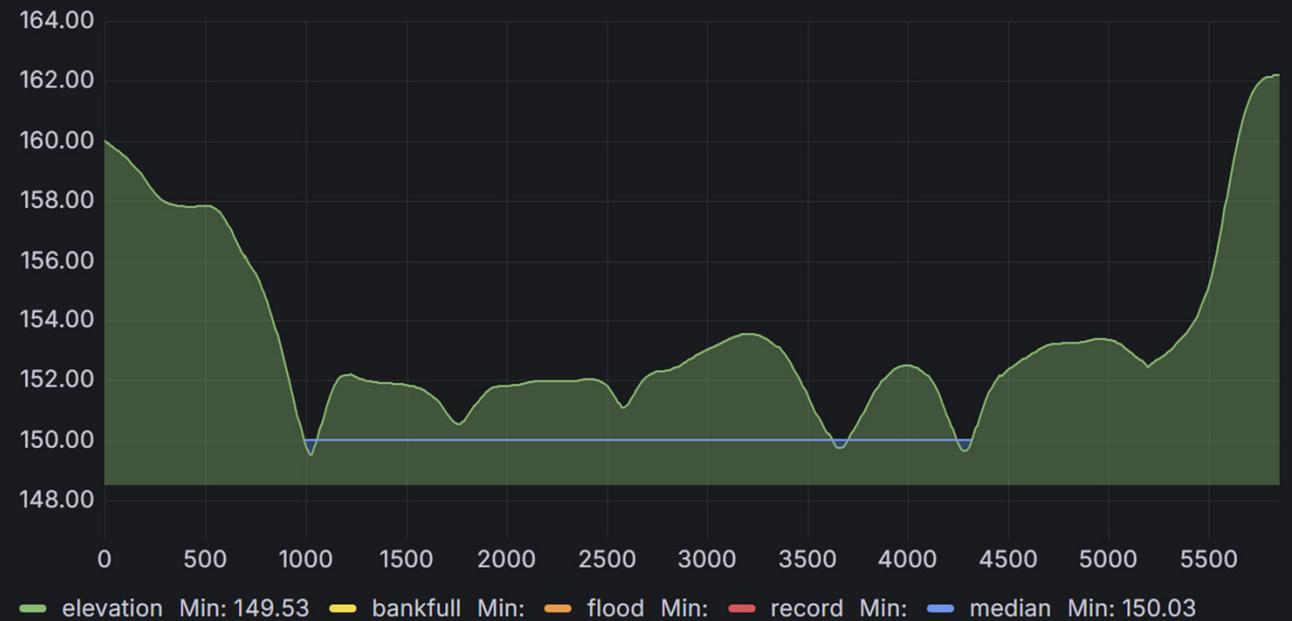
Station Group Properties

key	value
id	a7636948-4f7e-4f1
name	Stonehenge
elevation	151.23

Notes

- > 2024-12-10 01:33:58.586 subcatchment(5c4157c7-50b1
- > 2021-01-05 21:42:00.000 station(73cb68f7-0b87-4cc6
- > 2020-11-17 00:45:00.000 station(73cb68f7-0b87-4cc6
- > 2020-09-29 16:11:00.000 station(503225fc-c0a4-4b3!

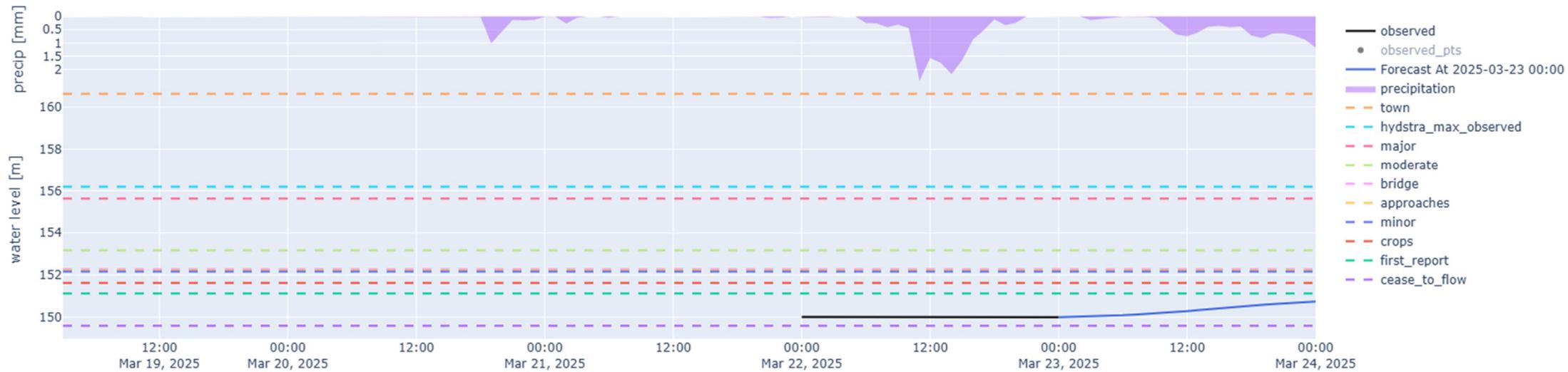
Cross Section



Thomson River ForeCast

Stonehenge, QLD March 2025

Forecast at: 2025-03-23 00:00 +0000



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

Jundah - Thompson River

March 27, 2025



Thargomindah – Bulloo River

April, 2025



Birdsville – Diamantina River

April 9, 2025





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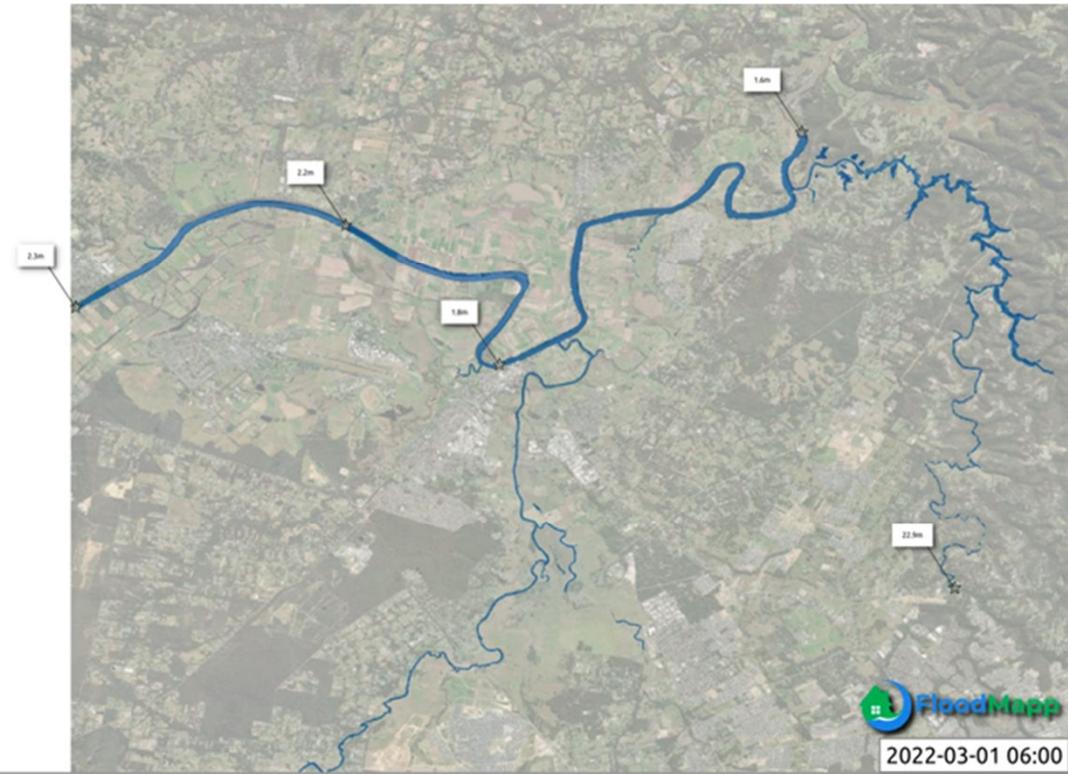
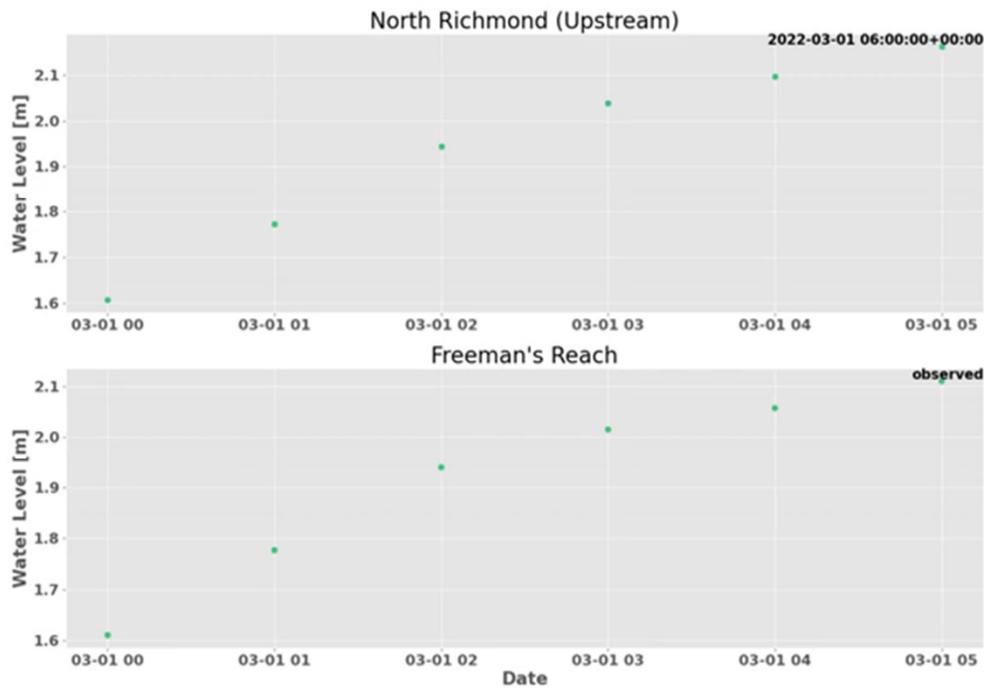
Transport for NSW



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Impact Based Intelligence



Impact Analytics

EMSINA Demo

River Condition **Below Flood Level** Minor Moderate Major Peak



Windsor P.W.D Gauge

2m

Impacts

1

Impacts

0km

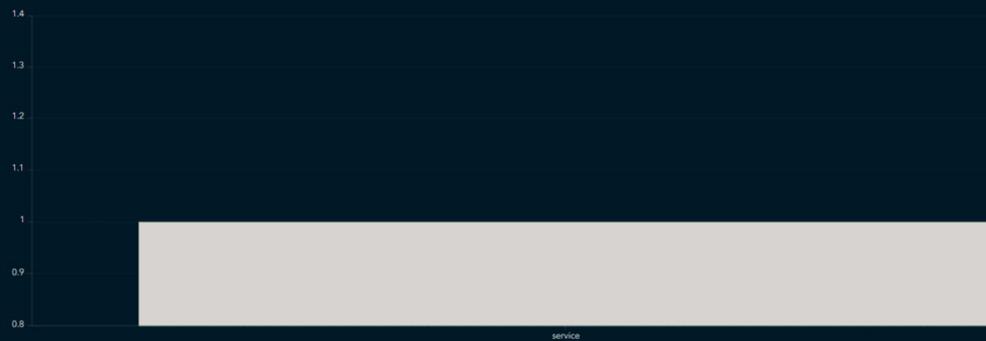
List of Impacts

Ordered by depth

 Name: **service**
Severity: **moderate**
Max depth: 1.1m



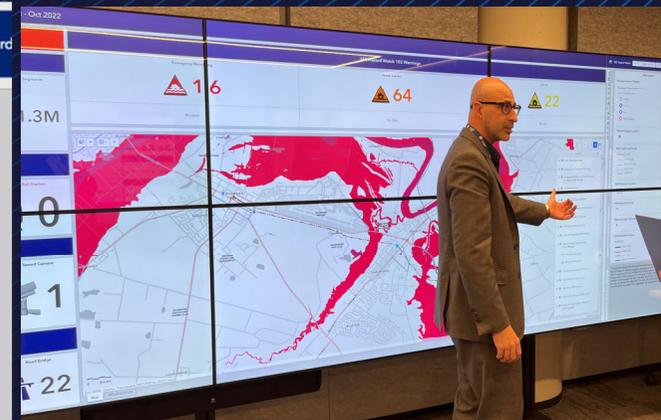
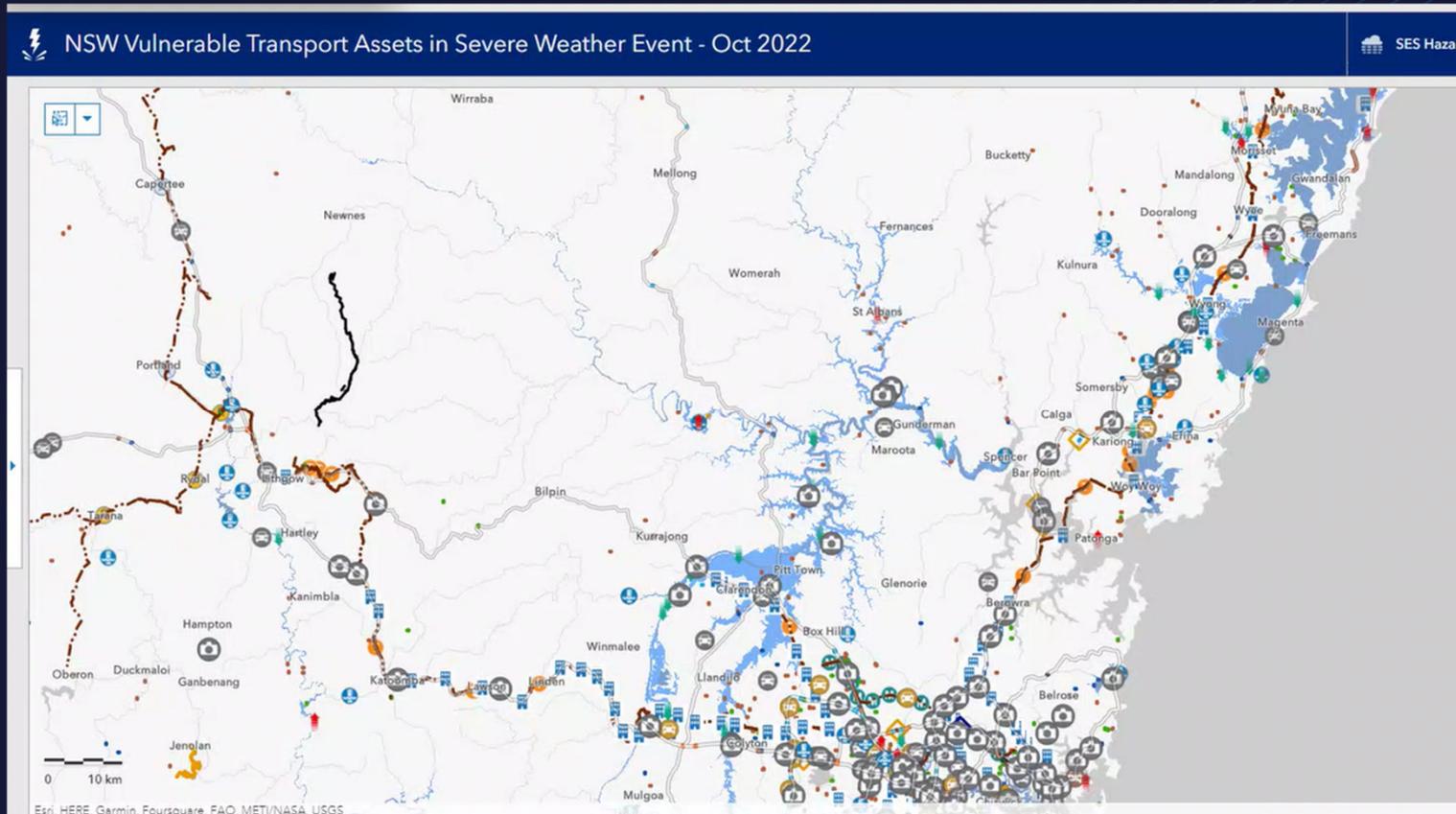
Road Hierarchy (count)



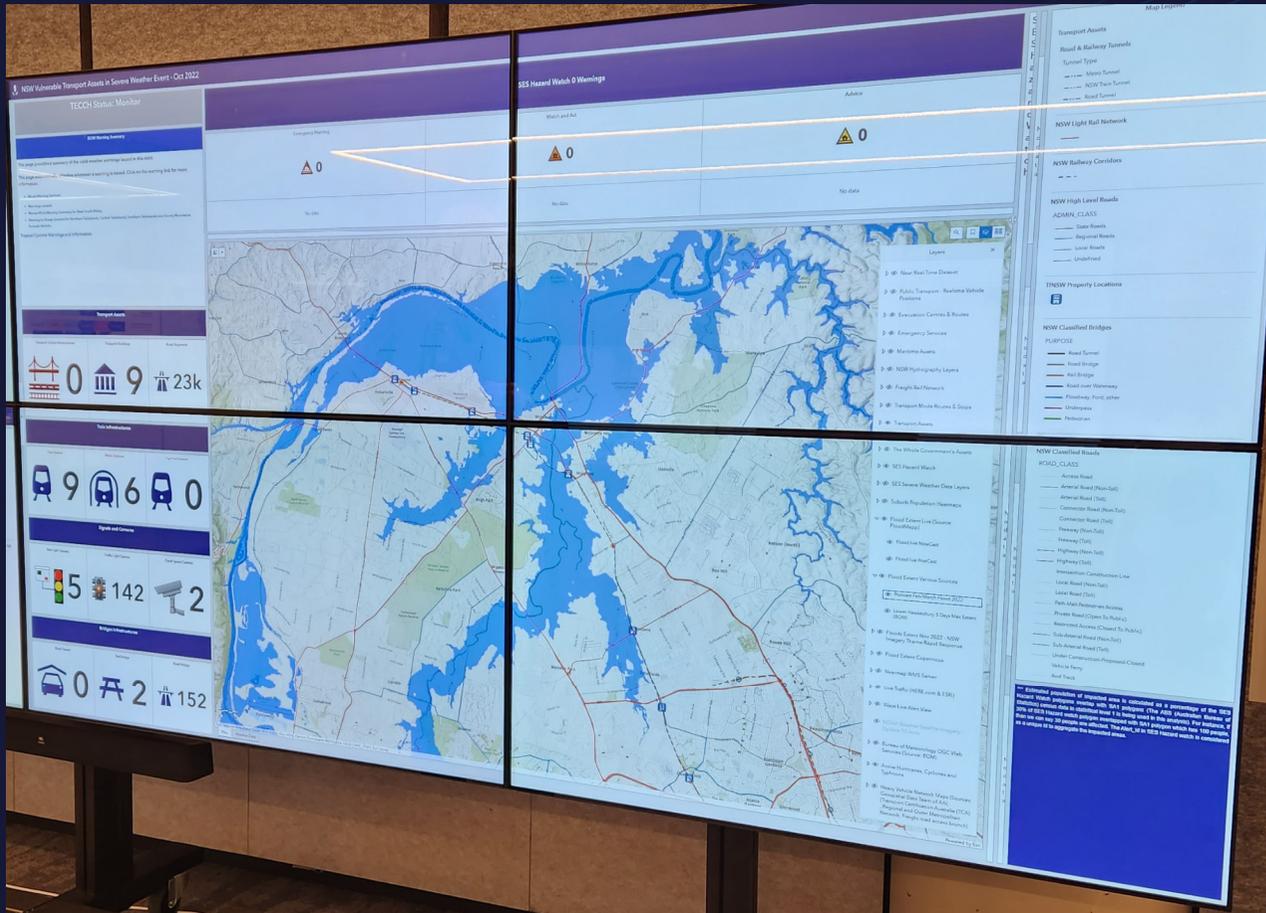
Road Hierarchy (severity + length)

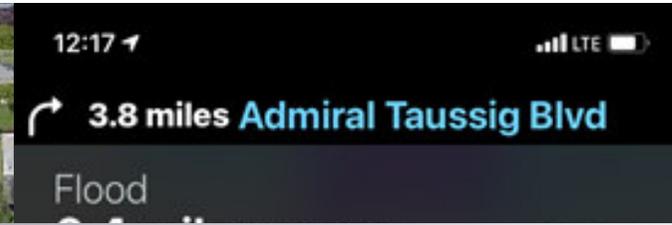


Fast Track Response and Recovery



Dynamic Situational Intelligence

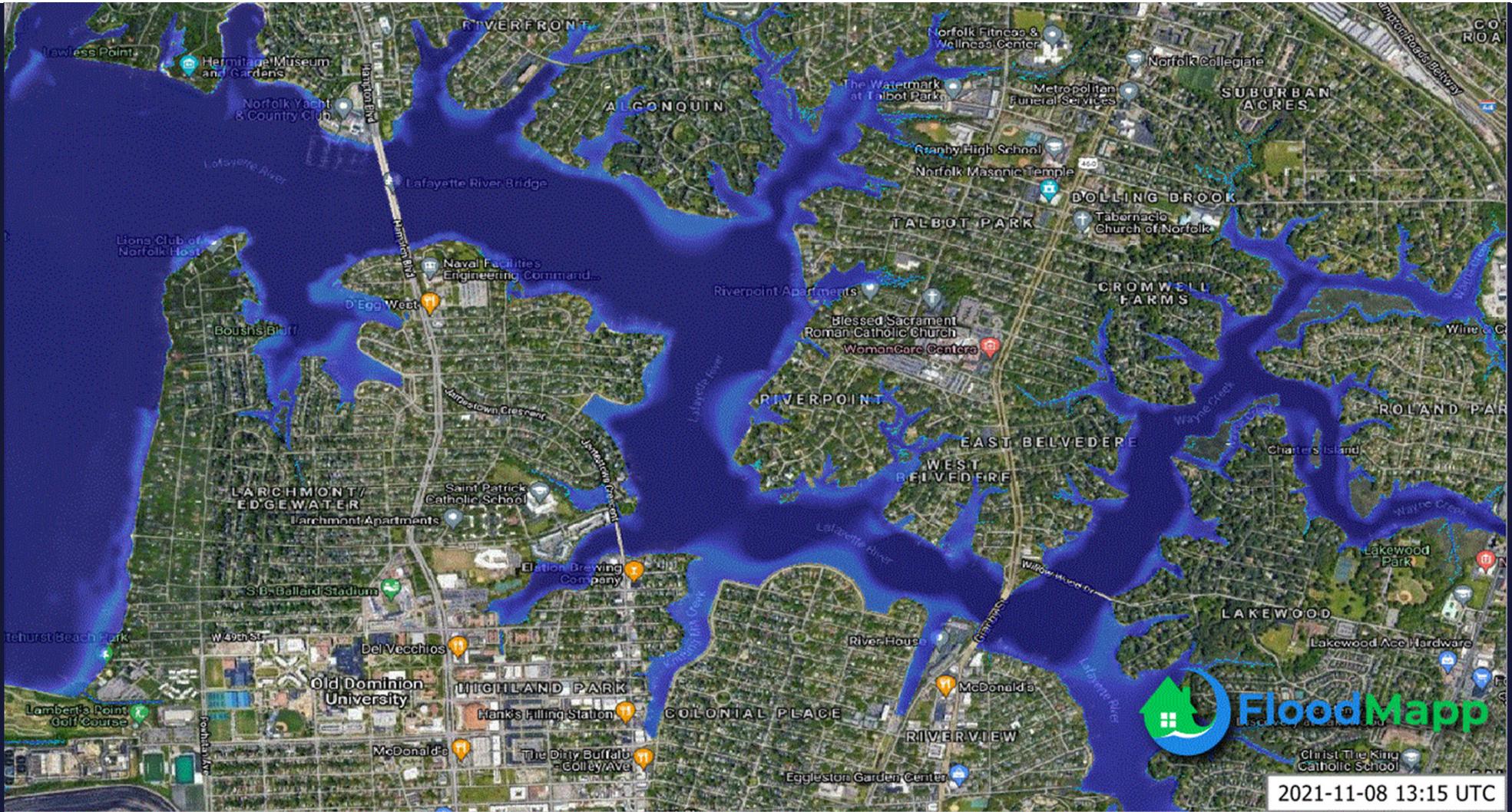




City of Norfolk

“FloodMapp’s technology provides affordable, citywide situational awareness that current solutions, such as sensor networks alone, don’t offer.”

Kyle Spencer
Chief Resilience Officer



Roadway Intelligence



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

Hampton Blvd

Norfolk

Hampton Blvd

W 49th St

W 50th St

W 48th St

W 46th St

W 44th St

W 42nd St

W 40th St

W 38th St

W 36th St

W 34th St

W 32nd St

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W 96th St

W 97th St

W 98th St

W 99th St

W 100th St

Live Road Closures & Re-Routing

Driving directions

501 Boush St Norfolk, VA 23510, USA

100 Park Ave Norfolk, VA 23510, USA

Leave now

Save to app

Routes

- 5 min** Arrive at 8:25 AM
Boush St, Waterside Dr Norfolk
1.4 MILES **BEST**
- 6 min** Arrive at 8:27 AM
St. Pauls Blvd Norfolk
1.5 MILES
- 7 min** Arrive at 8:28 AM
Boush St, E City Hall Ave Norfolk
1.4 MILES

Starting point Destination

100 Park Ave
Norfolk, VA 23510, USA

People also search for
[Directions to 100 Park Ave, Norfolk](#) • [100 Park Ave, Norfolk driving directions](#) • [100 Park Ave, Norfolk address](#) • [100 Park Ave, Norfolk opening hours](#)

1:27 5G

500 feet
Llewellyn Ave

Norfolk

Llewellyn Ave

18 mph

10 min • 1:37 • 2.0 mi

Flood in 0.3 miles

Not there Still there

Relevant SDGs



SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals



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Thank you!

Questions?

 juliette@floodmapp.com

 www.floodmapp.com



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