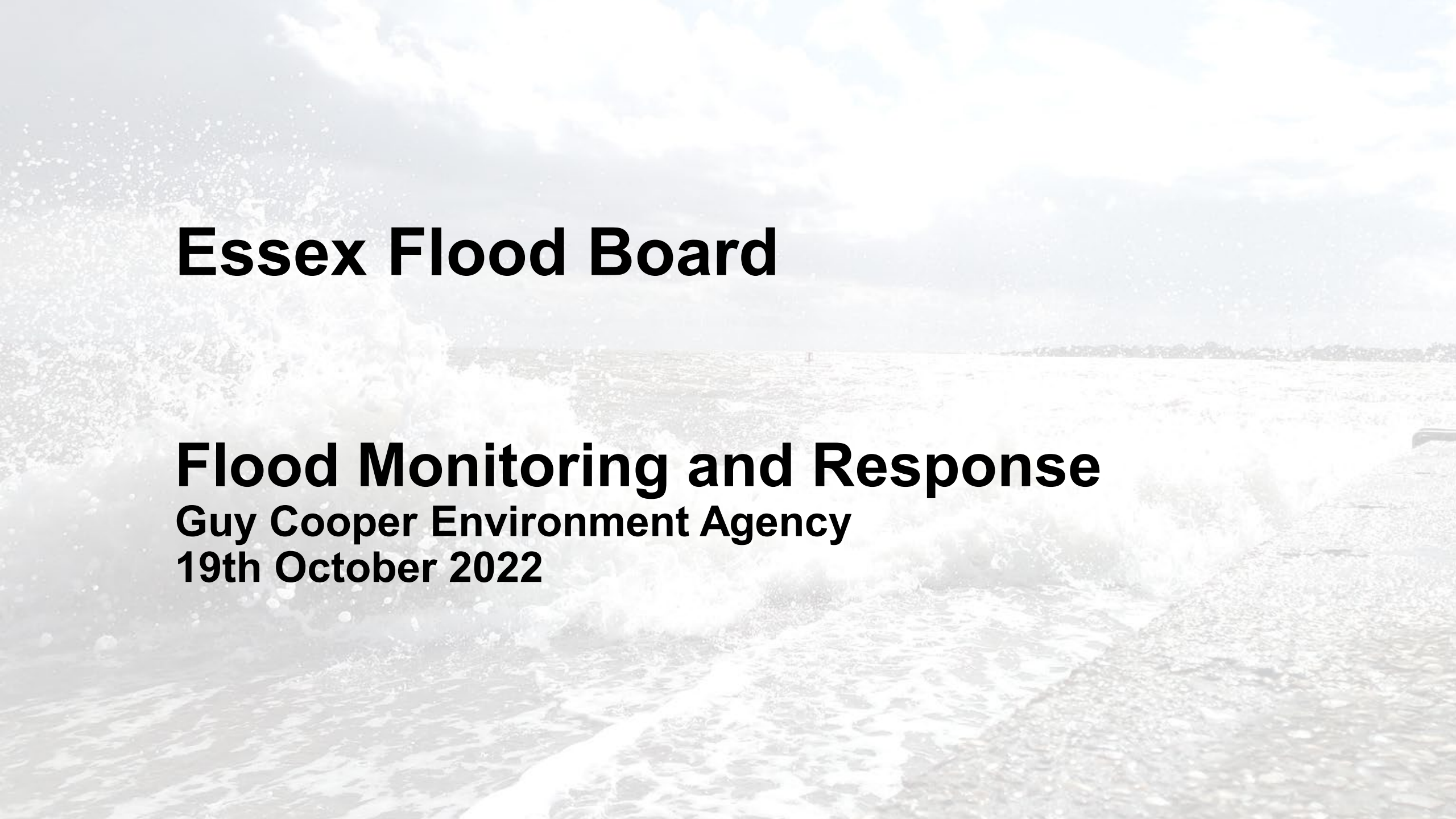




Essex Flood Board

Flood Monitoring and Response

Guy Cooper Environment Agency

19th October 2022

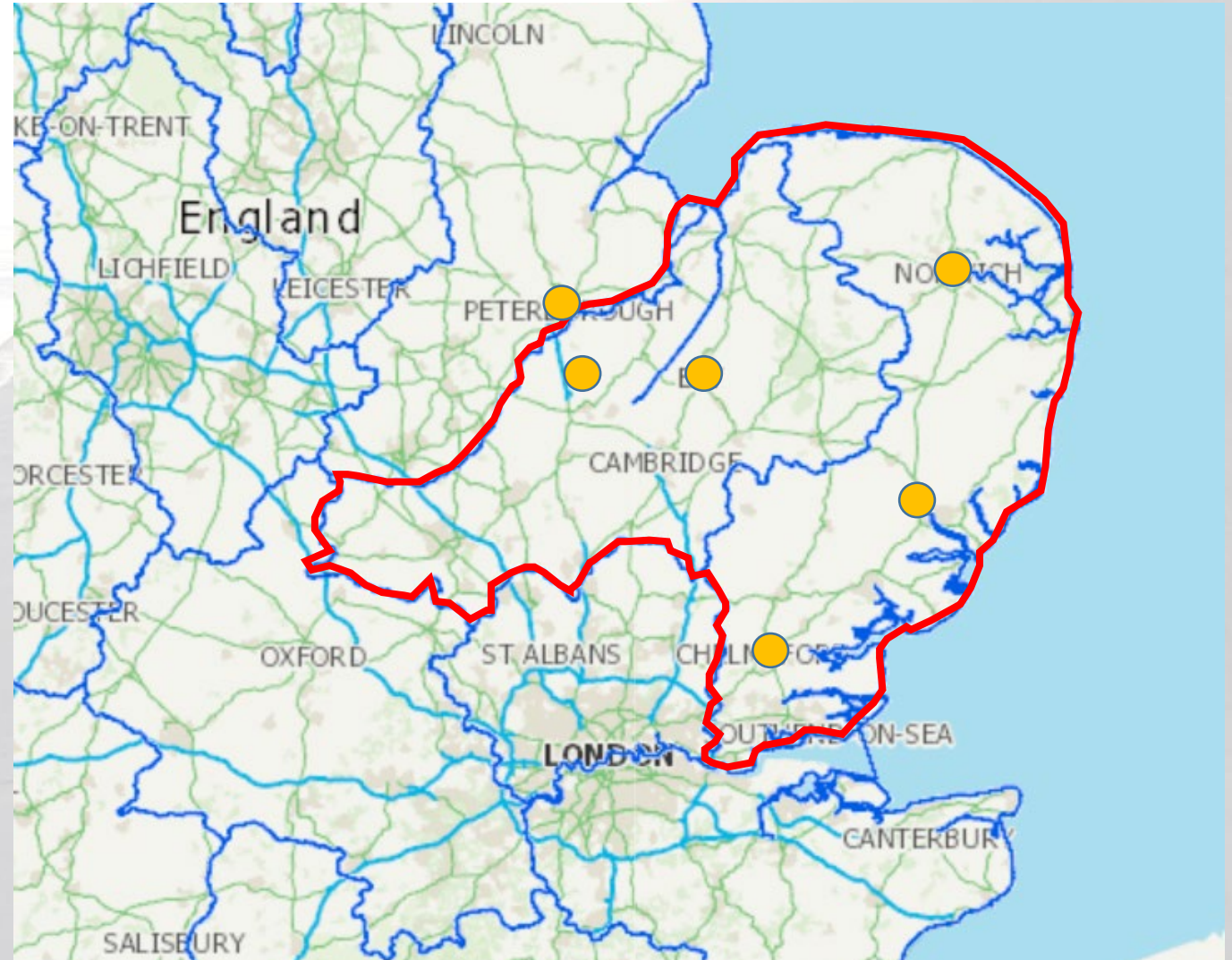
East Anglia Area

- Long, complicated coast
- 10 Estuaries
- Dozens of Islands
- Eroding cliffs
- Great Ouse
- 1000s km Main River
- Two operational Areas
- Different geology and geography



East Anglia Area

- Two Operational Areas
- Forecasting Peterborough
- CB Brampton
- ENS Ipswich
- Other offices and depots
- Based on Catchments
- Essex covered by three EA Offices/Areas



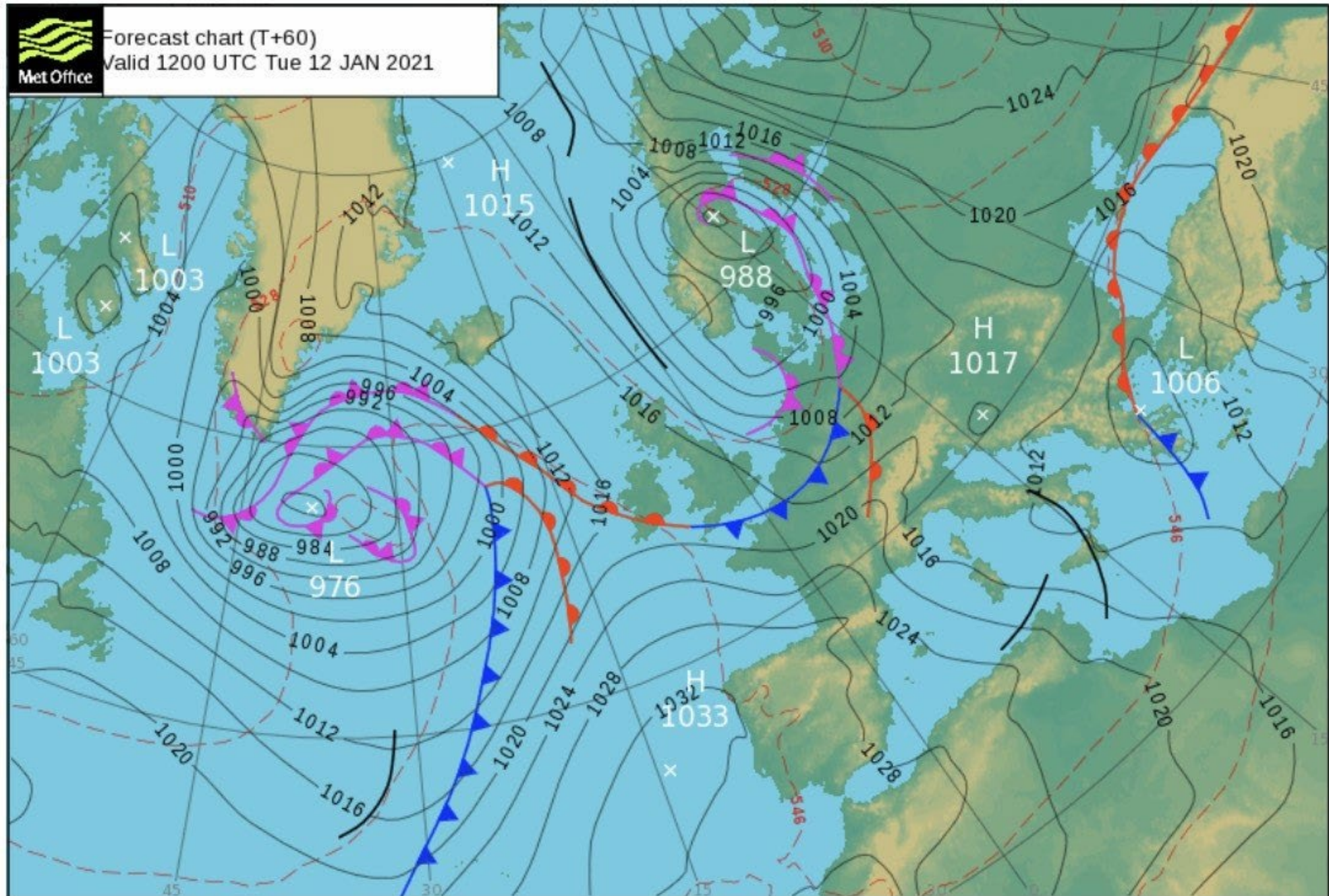
Essex



- Brompton (CB)
- Welwyn (HNL)
- Ipswich (ENS)

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Why does this matter?

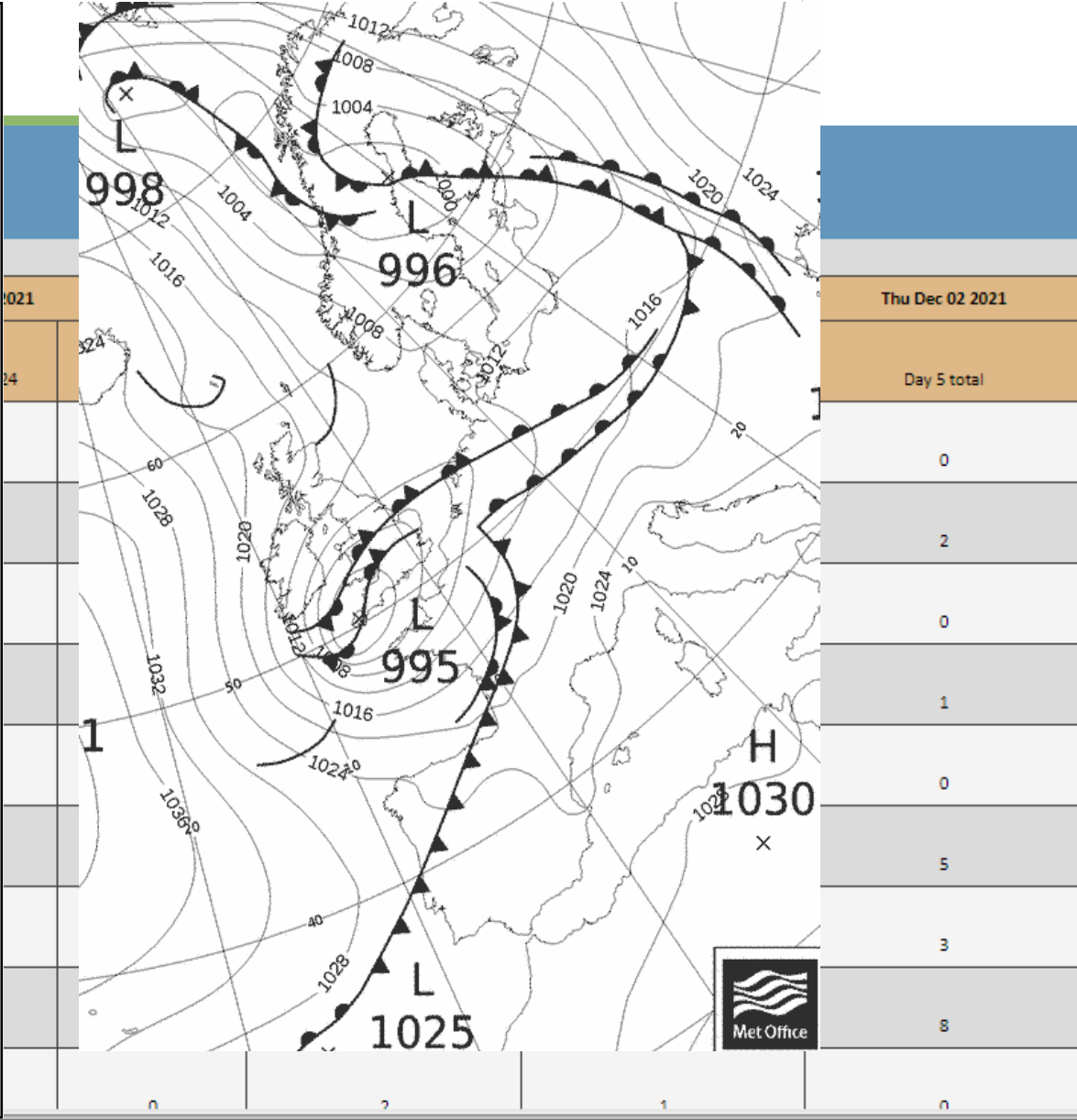
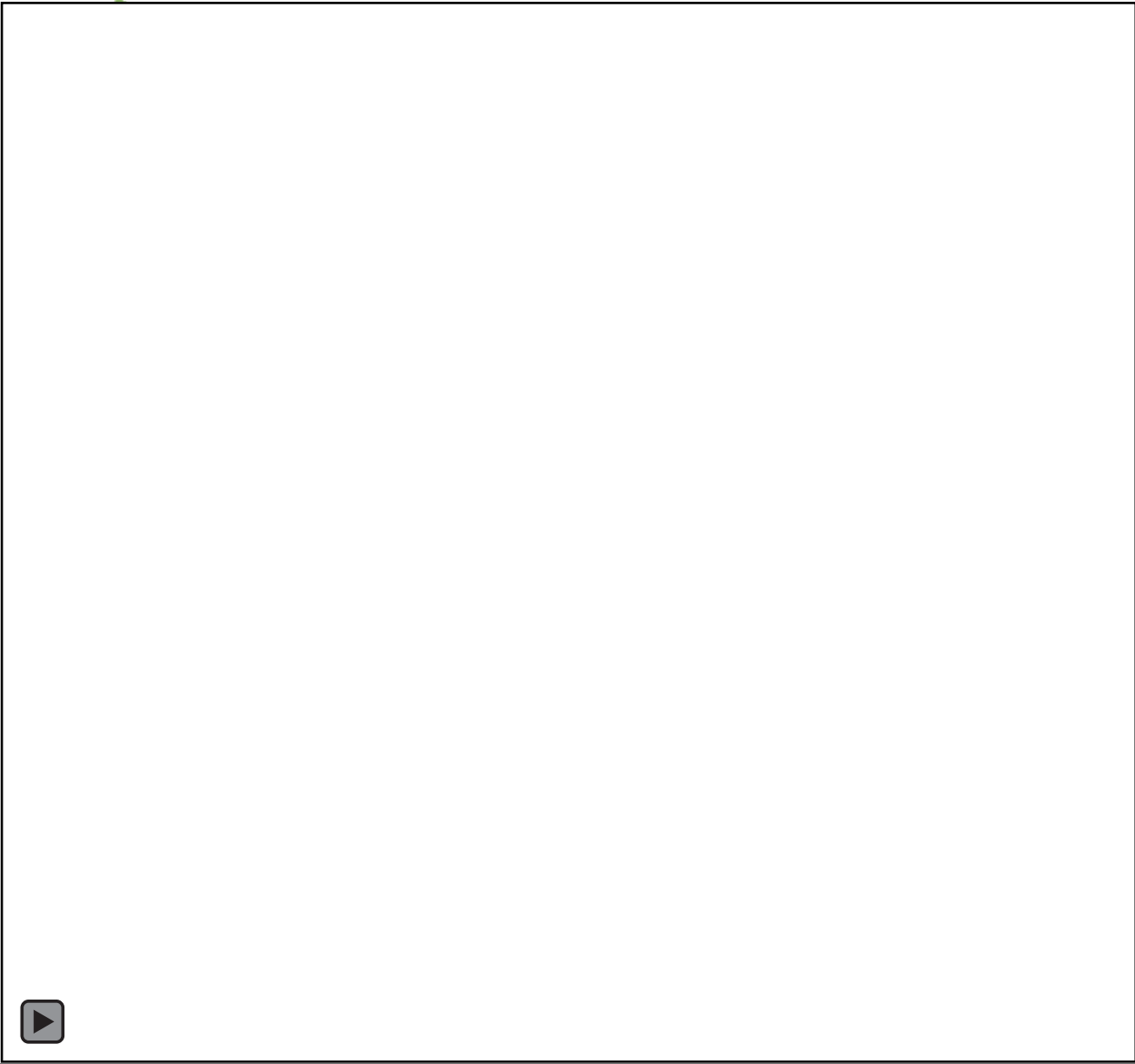
- We work with the Met Office through the Flood Forecasting Centre and directly with each Region having a Met Office advisor
- BUT We don't always see the same impacts from the same weather
- One off weather events may have different impacts depending on preceding conditions



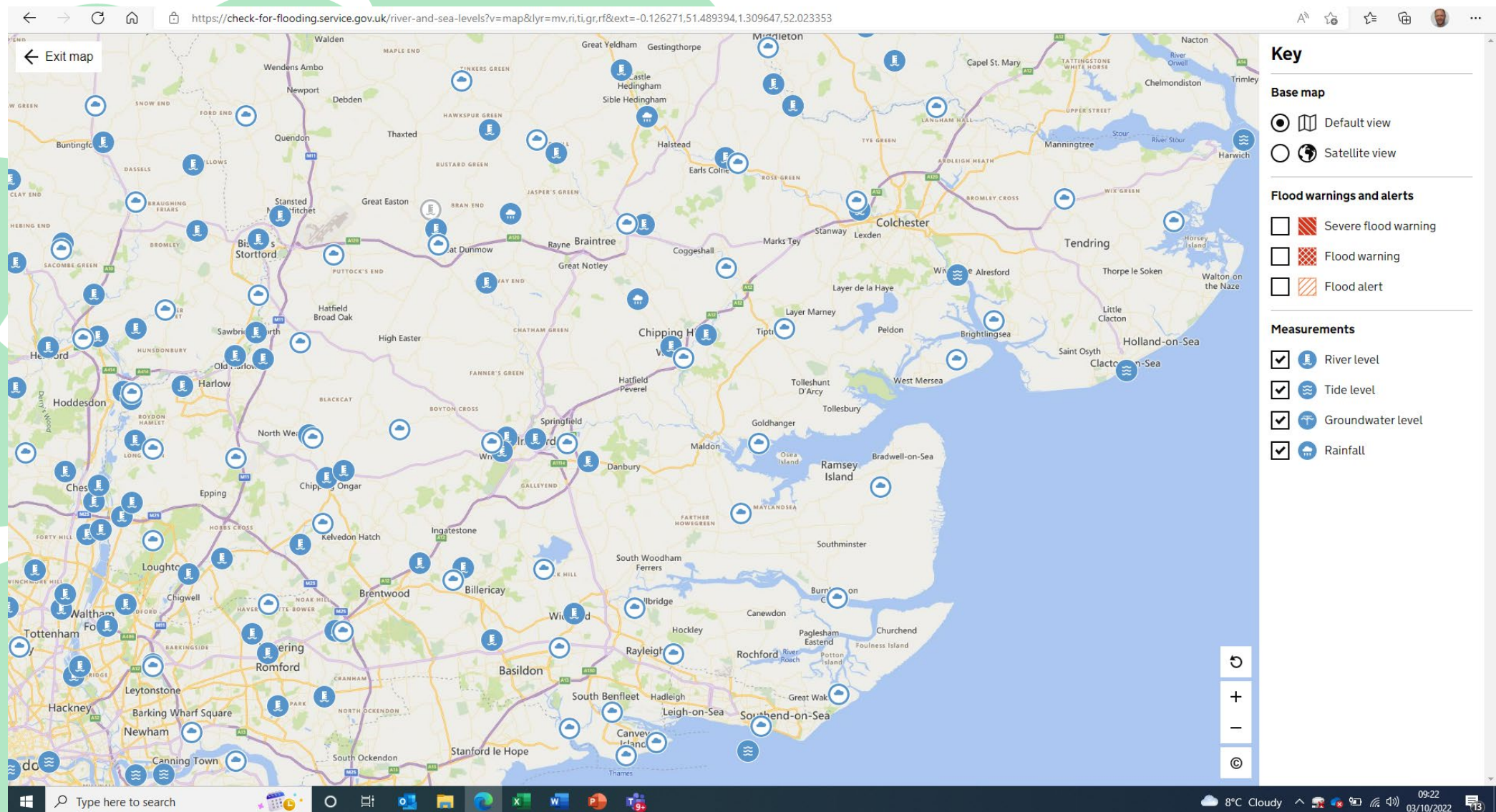
Monitoring, forecasting, Warn and inform

- How we monitor for flood events
- The types of information used
- The opportunities and limitations of forecasting
- Types of alerts, warnings and triggers





Gauging of rivers and trigger levels



Levels measured relative to stage datum in mAOD

Main River



Gauging and tidal forecasting

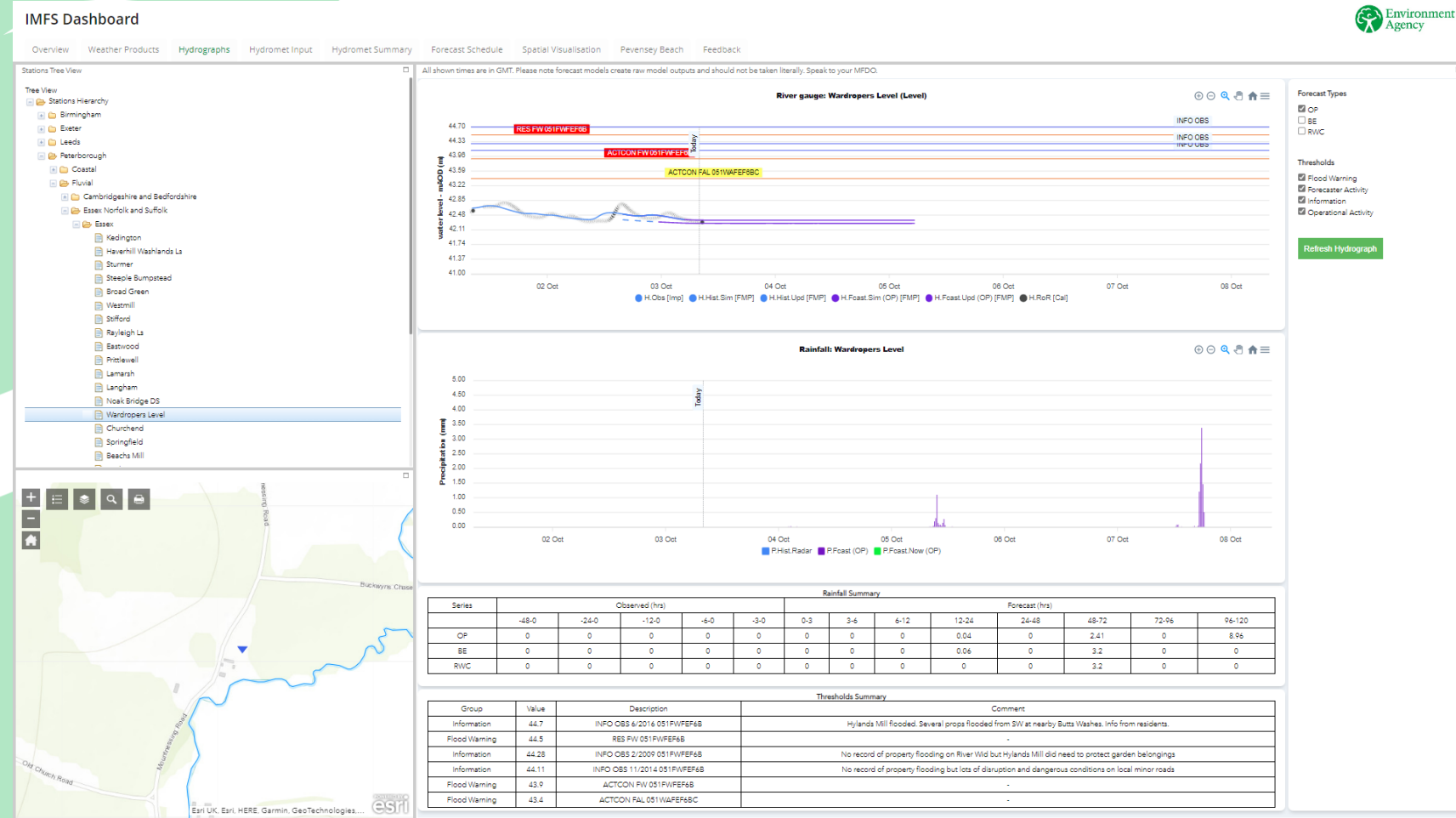


We forecast the tide for these points:

- The forecast at these points drives the tidal warning service
- Verify – Hindcast
- Long travel times
- Lag times up estuaries and in the broads
- Wind speed and direction important factor in estuaries
- Surge timing changes impacts seen on the ground
- Surge duration changes effects over a single tide or several tides

Warn and inform

- We can see the gauge data remotely
- We monitor river levels and rainfall
- We have forecasting models in some catchments **but.....**
- We can only approximate likely peak levels and time of peak
- We can't pinpoint properties or streets likely to flood next
- We also react to actual river levels at the gauges
- Thresholds are based on
 - Modelling info
 - Historical Data
 - Local survey data



The Flood Warning Service



Severe Flood Warning

Severe flooding. Danger to life.



Flood Warning

Flooding is expected. Immediate action required.



Flood Alert

Flooding is possible. Be prepared.

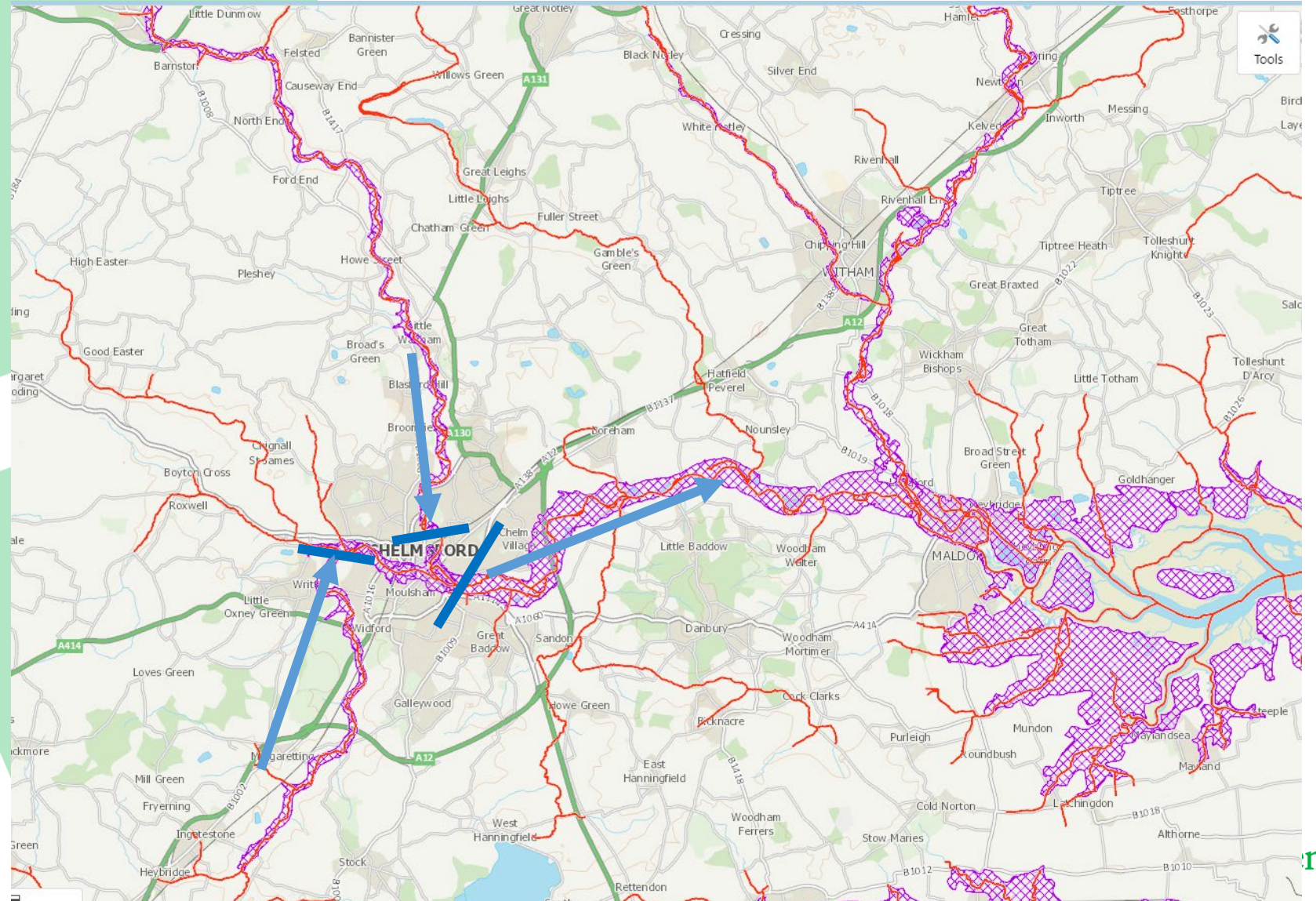
- The Flood Warning Service is forecast-led where possible, and additional data is used to issue Flood Warnings as well as that displayed on Check for Flooding
- Flooding is always unpredictable - Flood Warnings are the most reliable way of staying informed about forecast flood events

You can sign up for Flood Warnings here:

<https://www.gov.uk/sign-up-for-flood-warnings>

Flood Warning Areas

- Warning Areas are smaller than Alerts
- We try to target communities
- We only offer a service where it is technically possible
- We use the network of level gauges to warn from
- Lead time from gauge upstream or low threshold
- Lots of other inputs
- Try to reduce the number of unnecessary warnings but...



Operational Activity

- We have operational teams based on river catchments
 - These are directed by the Flood Incident Duty Officer
 - Clear trash screens
 - Close flood gates
 - Operate our tidal barriers
 - Maintain pumping stations
-
- Specialist Skills
 - Contingency Plans
 - Also we have Hydrometry and elemetry support



Image – Alamy Stock Photography



Image - John Fielding

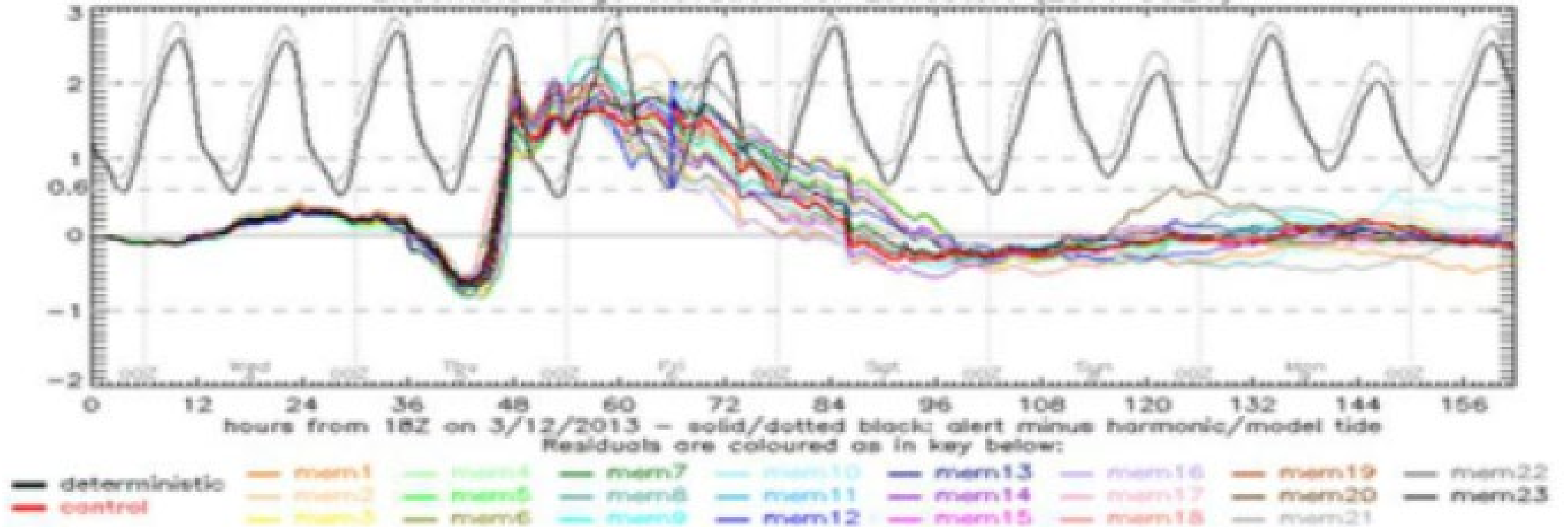
We don't just respond to flooding

- Water pollution incidents
- Bathing water quality investigations
- Shellfishery investigations
- Sewage works / Water company regulation
- Enforcement cases
- Water abstraction inspection and compliance
- Morphological harm enforcement
- Inspect and enforce waste to land deployment
- Intensive Farming – pig and poultry inspections and enforcement
- Pesticide Store Checks
- Pollution Prevention Inspections
- Groundwater discharges and spent pesticide discharges
- National infrastructure consultations (e.g HS2)
- Pre-application consultation
- Farm Inspections
- Stakeholder engagement
- Waste Regulation
- Waste site inspection and audits
- Waste Exemptions
- Illegal waste site enforcement
- Waste Carriers/Dealers/Brokers
- Hazardous and Nuclear waste regulation
- WEEE
- Planning appeals
- Planning Consultations
- Flytips (Big, Bad, Nasty)
- Amenity Incidents (odours and noise)
- Transfrontier shipments of waste
- Packaging Regulations
- Debt chasing
- Water quality Permit regulation
- Algae blooms
- Incident recharge

Wednesday 4th December

Lowestoft

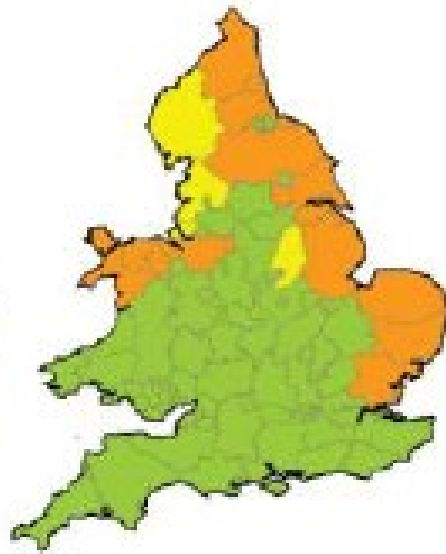
Ensemble surge elevation for Lowestoft (LOFT 0024)



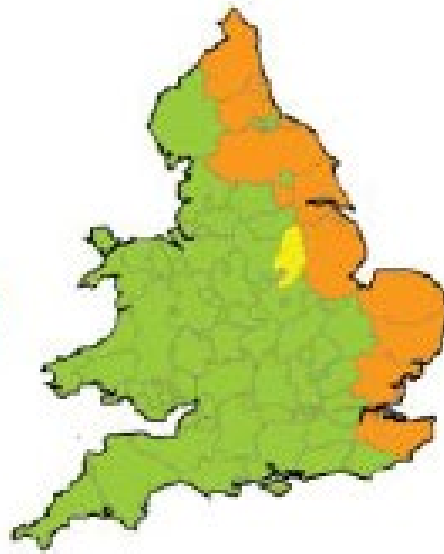
FGS - Wednesday



14:30 - 23:59hrs
Wednesday
04 December 2013



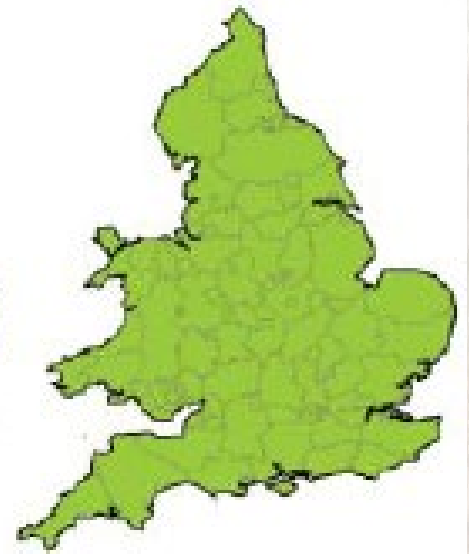
Thursday
05 December 2013



Friday
06 December 2013

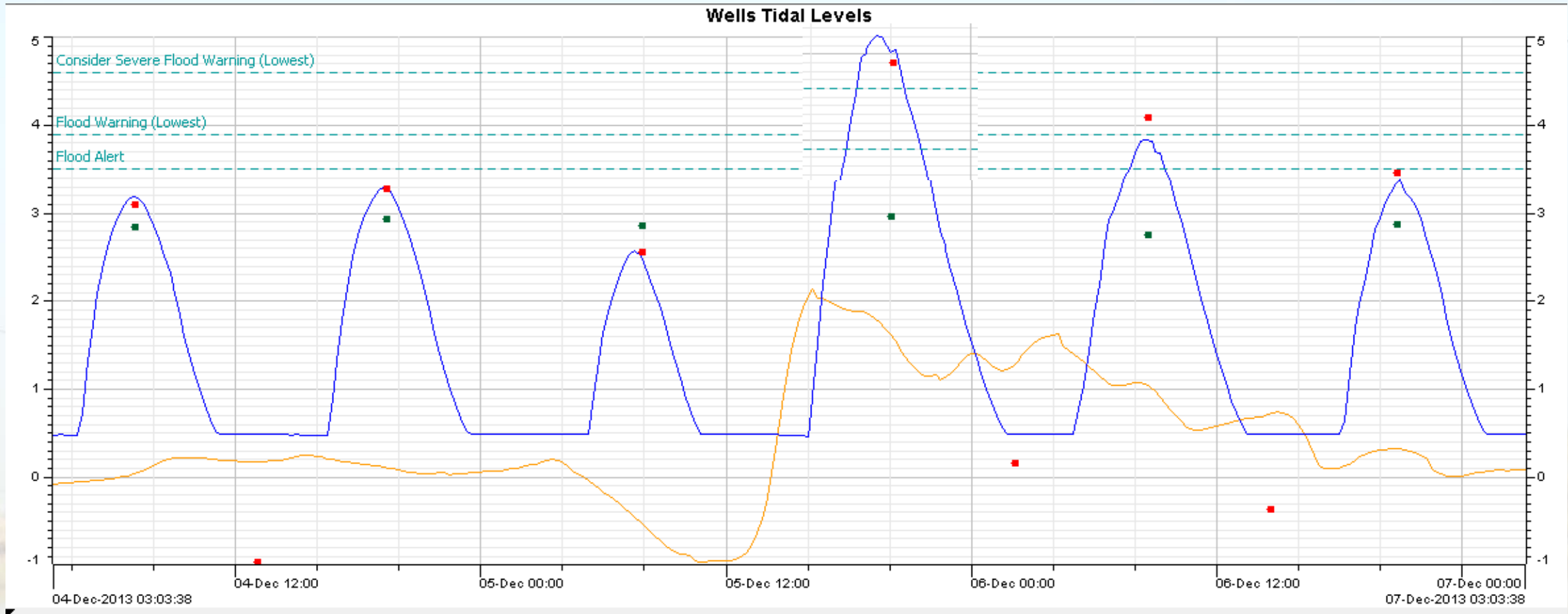


Saturday
07 December 2013



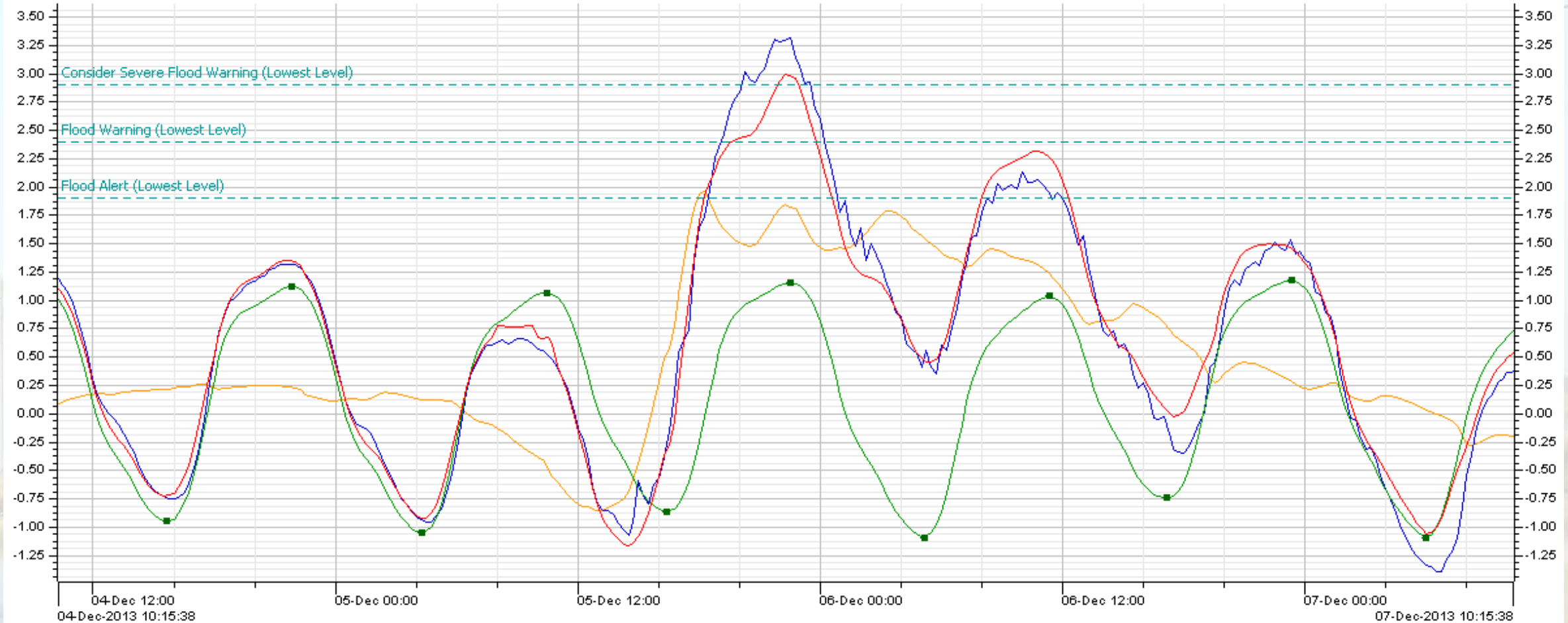
Sunday
08 December 2013

Wells - North Norfolk – Dec 2013

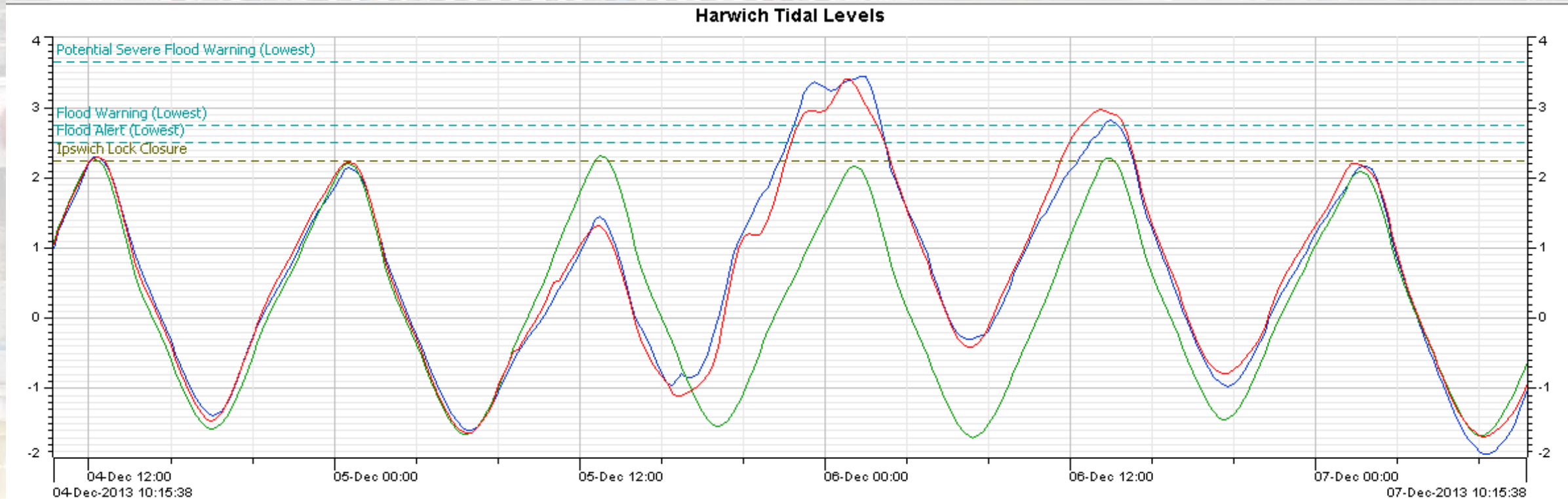


Great Yarmouth – East Norfolk – Dec 2013

Great Yarmouth Tidal Levels



Harwich – Essex – December 2013



Great Yarmouth – October 2014

