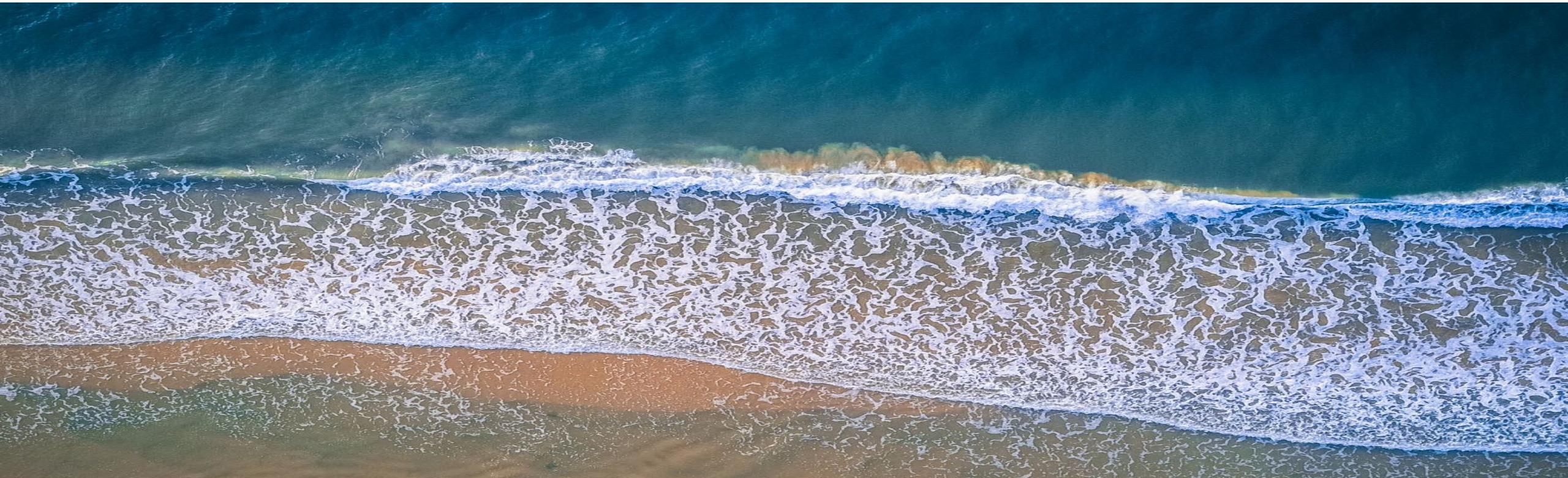




11th July 2023

East Anglian Coastal Group November Highlights

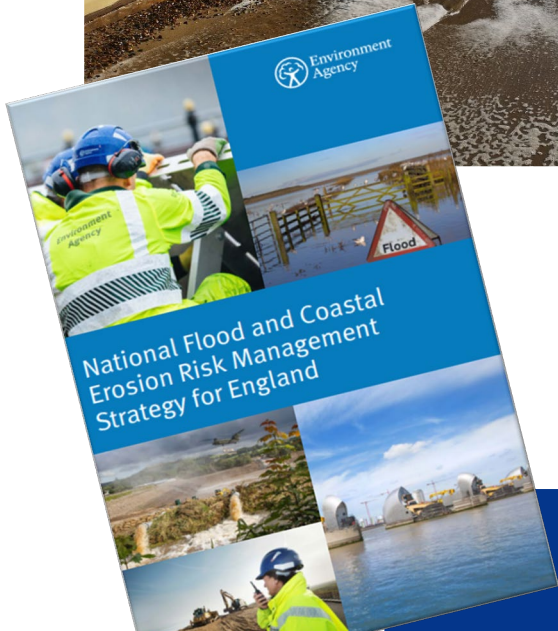
Karen Thomas Chair
Head of Coastal Partnership East



East Anglian Coastal Group Highlights

- SMPR delivery including engagement support for SMP leads on track for all our SMPs - Elected Member Briefing Pack 23 Nov (Explorer to go live 24 Jan on gov.uk)
- Second round of NCERM2 data evaluation due to take place January - March 2024 (Expected completion Summer 2024)
- NAFRA review period for Anglian region 20 Nov – 28 Feb (Expected completion Summer 2024)
- Coastal Adaptation SPD has been to planning committees and cabinets of the four authorities involved (NNDC, Broads Authority, GYBC and ESC)
- Delivering 4 of 27 national FCIP projects in Anglian (Reclaim the Rain, Catchment to Coast, Resilient Coast and Coastwise)
- Coast and Estuaries Conference 12th October
- Updated RFCC 27th October

- **Next EACG officers meeting December 4th online- all coastal practitioners are welcome**



LGA COASTAL SIG

National Coastal Highlights

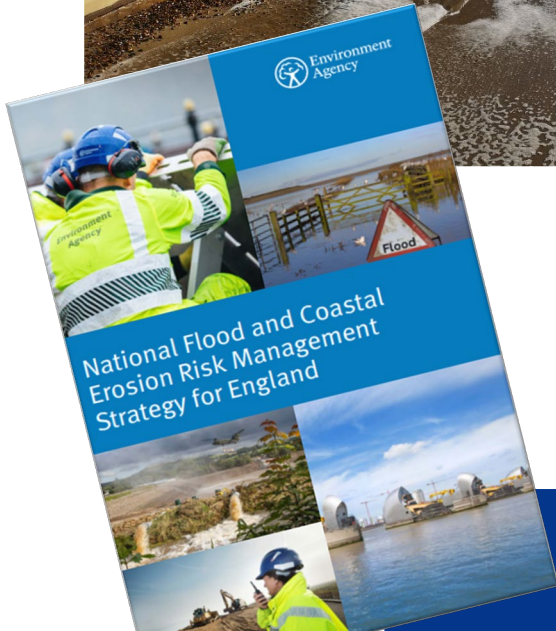
- **LGA Coastal SIG and Working Groups**

- Continued calls for a dedicated Coastal Minister
- Working Group engaging with infrastructure providers over resilience and investment in 2023/24
- Regenerating Seaside Towns Review and Climate Change Committee Review - Working group to consider recommendations and see what we can progress/champion
- Coastal Protection Act survey completed- now need to share recommendations with EA and Defra- recognition that adaptation is not well covered.
- Preparing for All Party Parliamentary Group meetings later this year on coastal issues

- **Next quarterly SIG meeting – open to coastal officers and Members – December 6th in London**

- **Coastal Group Network**

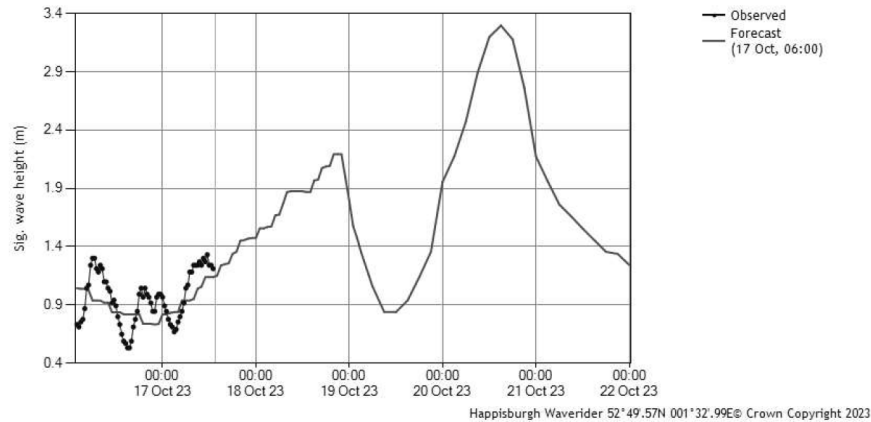
- Capital programme discussions to facilitate delivery of major schemes- inflation and economic challenges
- Raising coastal adaptation, capital investment and R&M funding challenges to IPA
- Attended EA Mental Health impacts of Erosion R&D stakeholder meeting- LA colleagues now looking at piloting work in our Area
- Attended Long Term Investment Strategy meeting – advocating for coastal funding for next capital programme



LGA COASTAL SIG

Norfolk Coast Round-Up for Nov 23

Sig. wave height



Cromer and Mundesley- £24M scheme commencing in 2024 to protect 588 homes from erosion risk



Storm Babet and Ciaran
Impacts

Wash East - shingle ridge
monitoring



Hemsby –further erosion
during storms Babet and Ciaran

CPE

Round-Up for Nov 23

CPE

CPE Board met on 15th September to review CPE programme and workstreams- next Board is Dec 8th. Our Board are NNDC Cllr Blathwayt and Cllr Callum Ringer and GYBC Cllr James Bensley and Cllr Paul Wells and ESC Cllr Kay Yule and Cllr Steven Moleyneux

NNDC and GYBC Repairs and maintenance works completed to time and budget- setting budgets for next year based on prioritised approach informed by visual surveys and monitoring

Coastal monitoring – new in-house capabilities including drones - demonstrating efficiencies and additional benefits. Planning for next Anglian Coastal Monitoring Programme business case

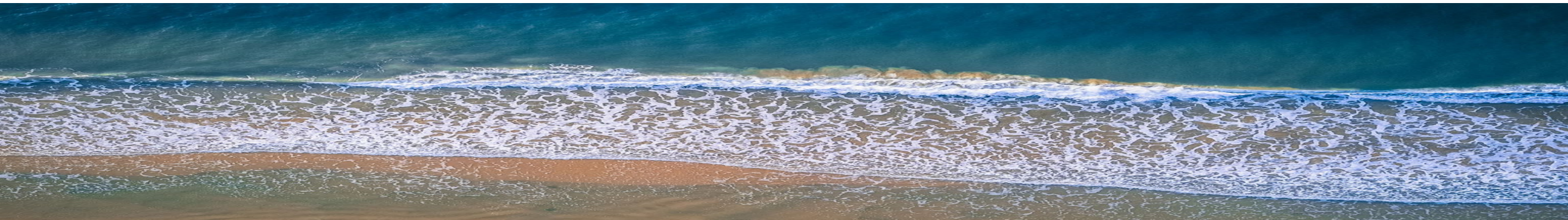
Storms and surges - Monitoring tides and linked to Norfolk Resilience Forum and EA surge forecasting service - Planning resource for further events

Resilient Coast Project

Pilots and technical work underway- notably for Norfolk- **Hemsby , Winterton** and **Great Yarmouth** North Quay

Work commenced on new **GIS-based spatial plan** ahead of the **National Erosion Risk Map 2**

Reviewing **sediment erosion and sediment transport** across Norfolk and Suffolk Coast to develop a sediment model linked to ecosystem service



Coastwise - Highlights

- Workshop completed at East Anglian Coast & Estuaries Conference.
- Coastwise initial support package prepared and approved – Individuals, businesses, community groups, also arts and culture.
- Baselineing scopes – Transition Plans, Coastal Literacy materials, Coastal Adaptation case studies and examples, Carbon BAU baseline, valuation and project tools and approaches.
- Recruitment for Coastwise team underway.
- Economic valuation of sediment study under preparation.



Find out more



COASTWISE

www.north-norfolk.gov.uk/projects/coastwise/

Summary

- We continue to work together to deliver SMP policies around our coast for people places and the environment
- We have until 2027 to gather evidence for new ways to fund and deliver resilience and adaptation approaches
- We continue to find ways to innovate and deliver Value for Money HTL schemes based on best available evidence
- We continue to manage MR and NAI policies in the meantime and support those most affected by erosion and flood risk as best we can



East Anglian **Coast & Estuaries** CONFERENCE



James Cochrane
Coastal Partnership East

What was it?

- First Coast and Estuaries Conference to include Essex Coast Forum
- Held on 12th October 2023 as a hybrid event
- Featured five main speaker sessions, with workshops and an exhibition
- Funded through sponsorship
 - Largest contributor being Balfour Beatty



Hybrid?

The screenshot shows a web browser displaying the agenda for the East Anglian Coast & Estuaries Conference 2023. The URL is <https://event.eventee.co/event/18172/detail/agenda>. The page features a sidebar with navigation links: My agenda, Program, Networking, Speakers, Sponsors, Exhibitors, and More. The main content area is titled 'The Atrium' and displays a timeline of events. The events are as follows:

Time	Event	Speaker	Organization
09:40 - 10:00	Welcome to the East Anglian Coast & Estuaries Conference		
09:40 - 10:00	Opening remarks		
10:00 - 10:45	Keynote speaker: The shadow of 1953: A personal perspective on our nation's coastal flood risk journey	John Curtin	ENVIRONMENT AGENCY
10:45 - 11:15	A whole estuary approach: planning for resilience in a changing climate.	Giles Bloomfield	EAST SUFFOLK WATER MANAGEMENT BOARD
11:15 - 11:45	Coffee break, networking and exhibition		
11:45 - 12:30	Changing tides, changing times: people, places, progress	Karen Thomas	EAST ANGLIA COASTAL GROUP

Hybrid?

East Anglian Coast & Estuaries Conference 2023

Keynote speaker: The shadow of 1953: A personal perspective on our nation's coastal flood risk journey

★ Ratings Q&A

Tidal surge
December 2013

Environment Agency

5 December saw the most serious tidal surge in over 60 years, here's a look at some of the facts surrounding the event:

- 5.8m peak sea level (Hull)
- Most serious tidal surge in 60 years
- 160,000 warnings sent to homes and businesses
- 18,000 people evacuated
- London saw highest tide since the Thames Barrier's completion in 1984
- 800,000 properties protected by Environment Agency flood defences
- 2,800 kilometres of flood defences put to the test along the coast
- 64 severe flood warnings issued

"Our thoughts remain with those people who have..."

The Atrium 12 Oct - 10:00 - 10:45

Next session

Speakers

John Curtin

Description:

The Numbers

Bookings

In person

245

plus

School/ college

27

Online

181

Attendees

In person

192

Including

School/ college

25

Online peak

86

Feedback

The presentations were absorbing and informative, and the chance to meet colleagues and network was invaluable. It really was an excellent event.

I just wanted to send you a quick email to say how well structured and organised the conference came across yesterday. Sadly, due to travel problems I couldn't make the conference in person. But feel that I didn't miss out at all, the camera work and placement made it feel as though one was really sitting in the room. And I felt that all the transitions were smooth and even the workshop came across well over the live feed.

Thank you so much for a very engaging and informative conference. The data was presented in a very easy to understand way, albeit slightly alarming. It really brought home the need for sustainable solutions to the issues we suffer being coastal.

The whole conference was a fascinating insight into the challenges that the east coast faces, which I knew something about, but not the details.

Next Year

Feedback:

- More insight into the planning process for housing/business developers facing challenges of coastal erosion
- Diversity in speakers
- More about nature-based solutions
- More workshops
- More time to network
- Separation of the presentation and exhibition space
- Best practice from other countries
- Community voices
- Input from a stakeholder like Central Government, Water Company etc.

From Coastal Partnership East:

- Event likely to be at Trinity Park, Ipswich on 17th October 2024
- Conference is getting bigger every year and therefore requiring more resource to run and harder to finance through sponsorship.
- Suggestions for speakers, potential sponsors, exhibitors etc all very much welcome.

Any Questions?



Norfolk 5th December 2013 North Sea Tidal Surge

David Kemp
Coastal Team Leader
Environment Agency

November 2023



Track of 1953 Storm

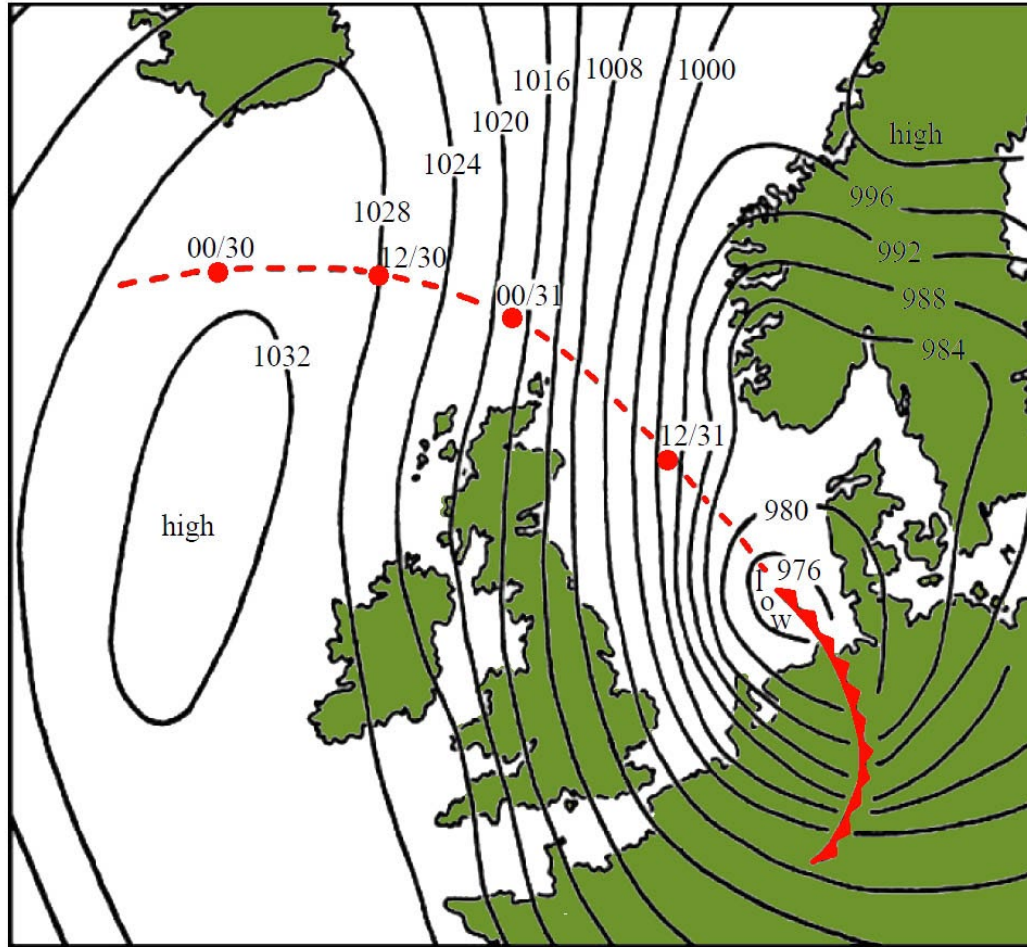
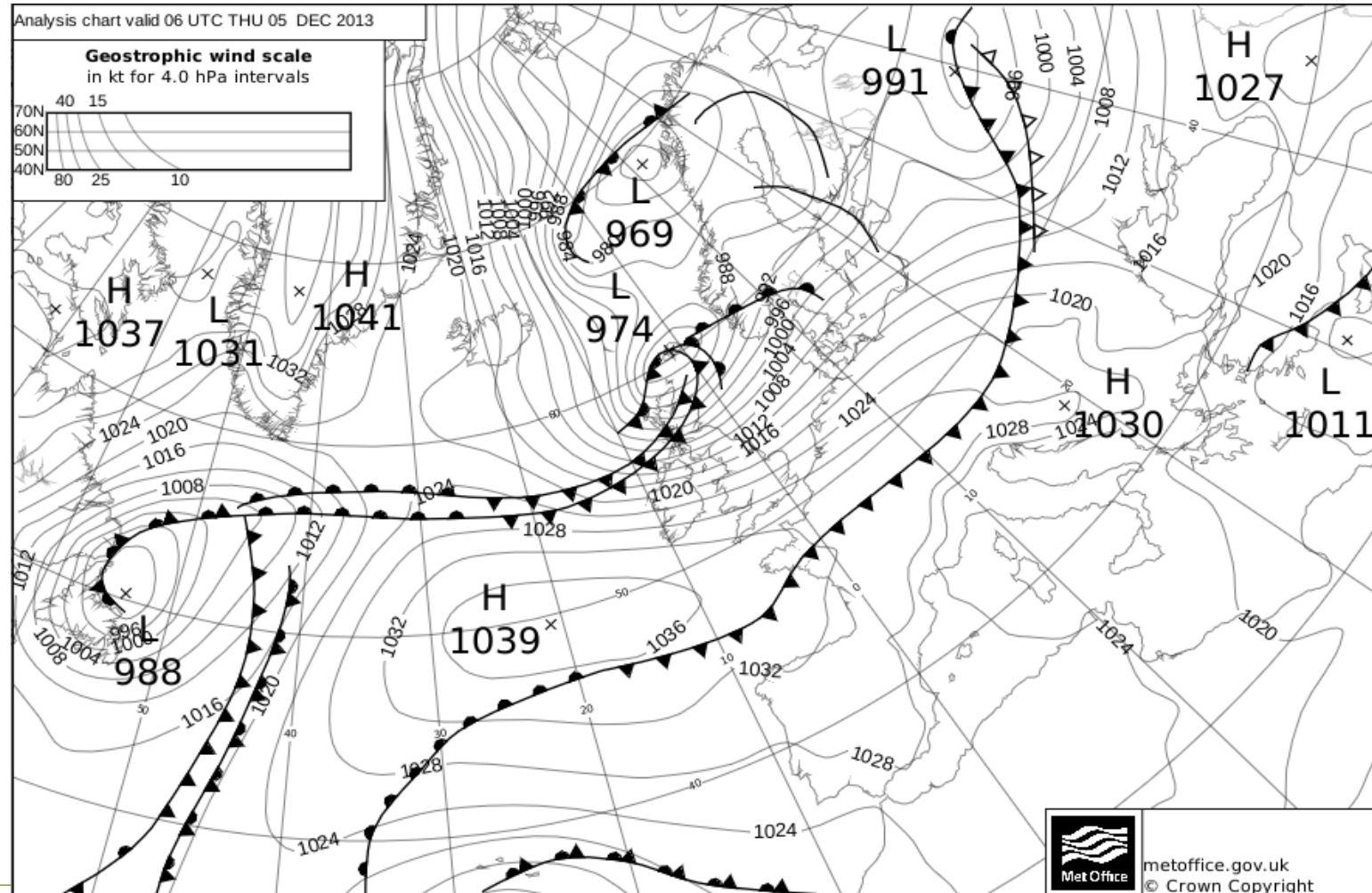


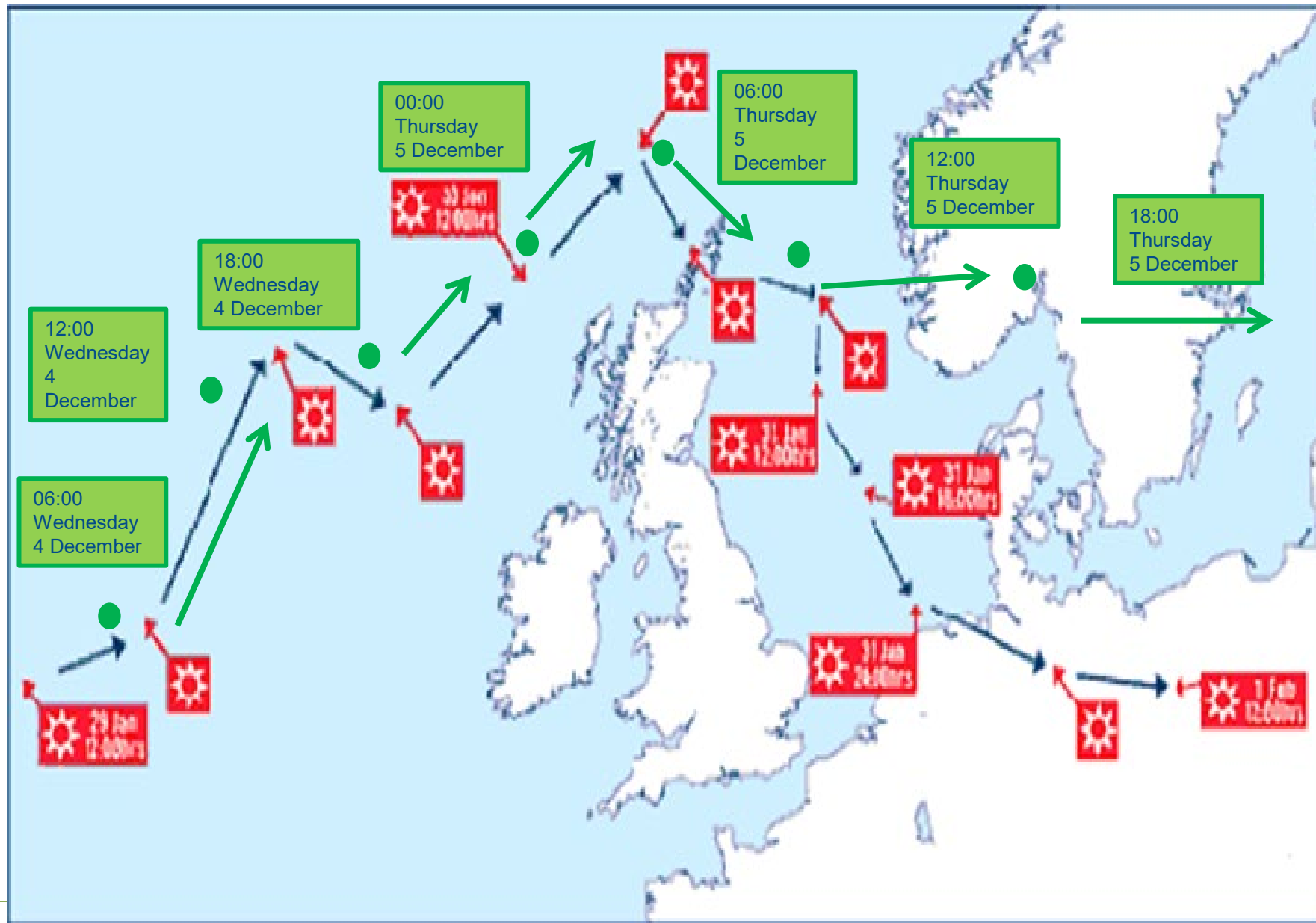
Chart of 1 February

Main impacts over an 8 hour window from late 31 January to early 1 February

This slide shows the low pressure system tracking over the UK at 06:00 Thursday 5 December



1953 Storm Track



Comparison 1953 / 2013

	1953	December 2013
Breaches	1200 different locations	Under investigation
Properties flooded	24,000	1,400 (10/12/2013)
Deaths	307	2 but not flood related
Agricultural Land	65,000 hectares	6,800 hectares
People evacuated	32,000	18,000
Infrastructure	2 Power stations 12 Gas Works 100 miles of roads 200 miles of rail	Major impacts at Immingham Port No power stations and major gas works/services affected Road and rail tbc
Flood Warnings	0	71 severe flood warnings Over 160, 000 warning messages sent directly to homes and businesses

Our response



**14 National Operations
Incident Management
Team meetings**

**15 Strategic
Management Team
meetings**

**5 COBR
meetings**

**43000 flood
warnings
issued in 1
hour (6 Dec)**

**19 incident
rooms
opened**

**15 Strategic
Co-ordinating
Groups
(GOLD)
meetings**

**64 severe
flood
warnings
issued at
peak**

**Response
Coordinating
Groups**

**3000 Environment
Agency staff
involved**

Early indication of the storm

➔ Monday 2nd December 2013

- ➔ Early indication of possible rather than probable storm

➔ Tuesday 3rd December 2013

- ➔ Storm becomes probable. Partners advised.

➔ Wednesday 4th December 2013

- ➔ Forecast tide heights for a significant storm.
- ➔ SCGs formed in Norfolk, Suffolk & Essex

➔ Thursday 5th December 2013

- ➔ Severe Flood Warnings issued at 0530hrs
- ➔ Tide arrives in Wells next the Sea at 1915hrs

Gearing up and working with our partners

➔ Monday

- ➔ Assessing our resources
- ➔ Informal contact with LRF duty officers

➔ Tuesday

- ➔ Formal contact with all 3 LRF via FAS
- ➔ RED Telecon

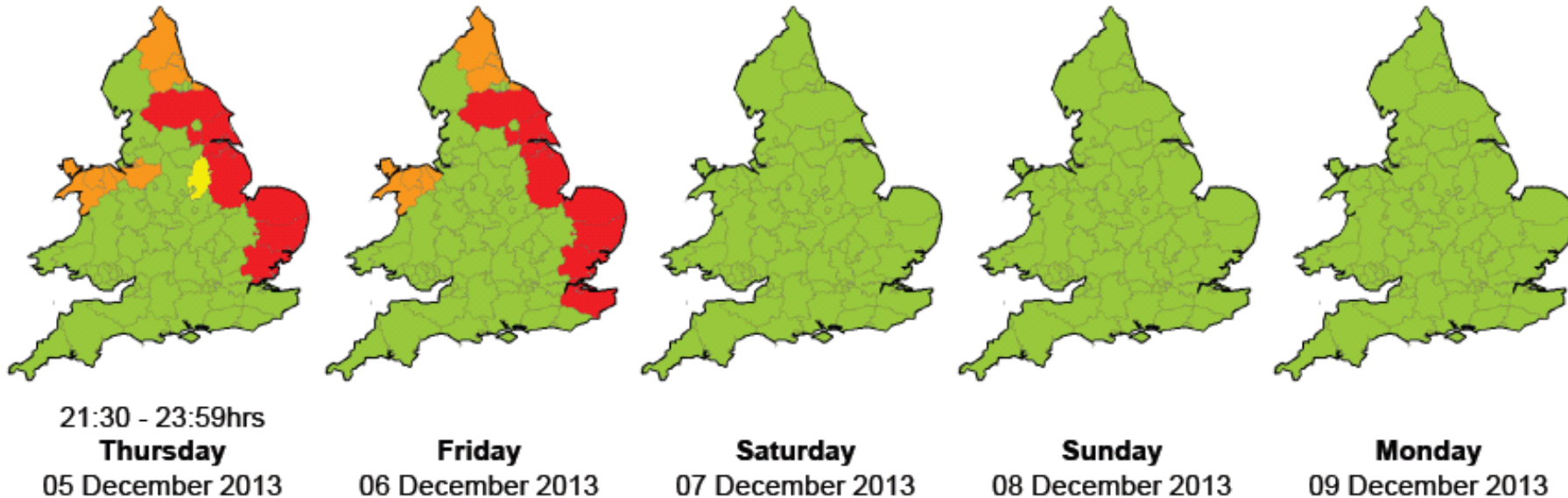
➔ Wednesday

- ➔ Deterministic predictions for a significant tide
- ➔ Request SCG in each county

Forecasting

Flood Guidance Statement 21:30hrs Thursday 05 December 2013

Our assessment of daily flood risk for England and Wales, working with flood forecasting teams in the Environment Agency and Natural Resources Wales, is below.



Warnings Issued

- ➔ Across Eastern Area
 - ➔ 33 Severe Flood Warnings
 - ➔ 73 Flood Warnings
 - ➔ 40 Flood Alerts
- ➔ In Norfolk (Eastern and Central Area Figures)
 - ➔ 9 Severe Flood Warnings
 - ➔ 46 Flood Warnings
 - ➔ 14 Flood Alerts
 - ➔ 10,293 properties.
 - ➔ 80% warning success rate in Norfolk



SEVERE FLOOD WARNING

SEVERE FLOODING. DANGER TO LIFE.



FLOOD WARNING

FLOODING IS EXPECTED. IMMEDIATE ACTION REQUIRED.



FLOOD ALERT

FLOODING IS POSSIBLE. BE PREPARED.

Preparing the operational response

Tues 3 December

Prepared Field Teams for event.

Weds 4 December

Mutual aid request for people and equipment.

Obtained additional equipment

Briefed contractors

Thurs 5 December

Deployment

Comparative Tide Heights

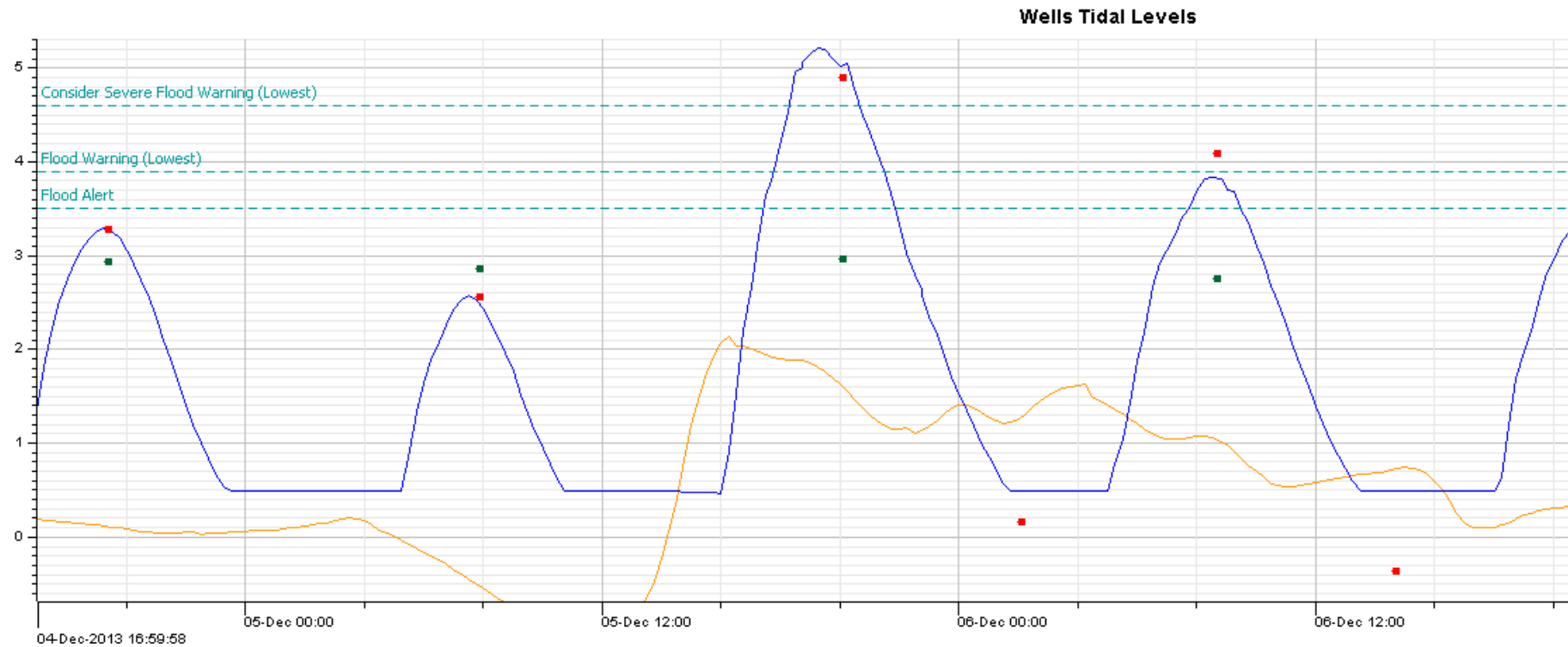
Monitoring Location	1953	2013	Estimated return period*
Wells-next-the-Sea	5.13 m AODN	5.215m AODN	1:500
Great Yarmouth	3.28m AODN	3.318m AODN	1:175
Lowestoft	3.35m AODN	3.291m AODN	1:200
Felixstowe	4.02m AODN	3.447m AODN (Harwich)	1:30
Holland	4.05m AODN	3.756m AODN (Clacton)	1:30
Southend	4.62m AODN	4.10m AODN	1:15
Tilbury	4.85m AODN	4.201m AODN	-

* Return period for 5th and 6th December taken from 2011 CFB Extreme Sea Levels.

Impacts of the event



Wells-Next-The-Sea



Wells Harbour – The Quayside – Looking South East – Thu Dec 5 2013 18:22:54





Reported High Tide Line

TIDE LEVEL

31.1.1953

11.1.1978

Blakeney

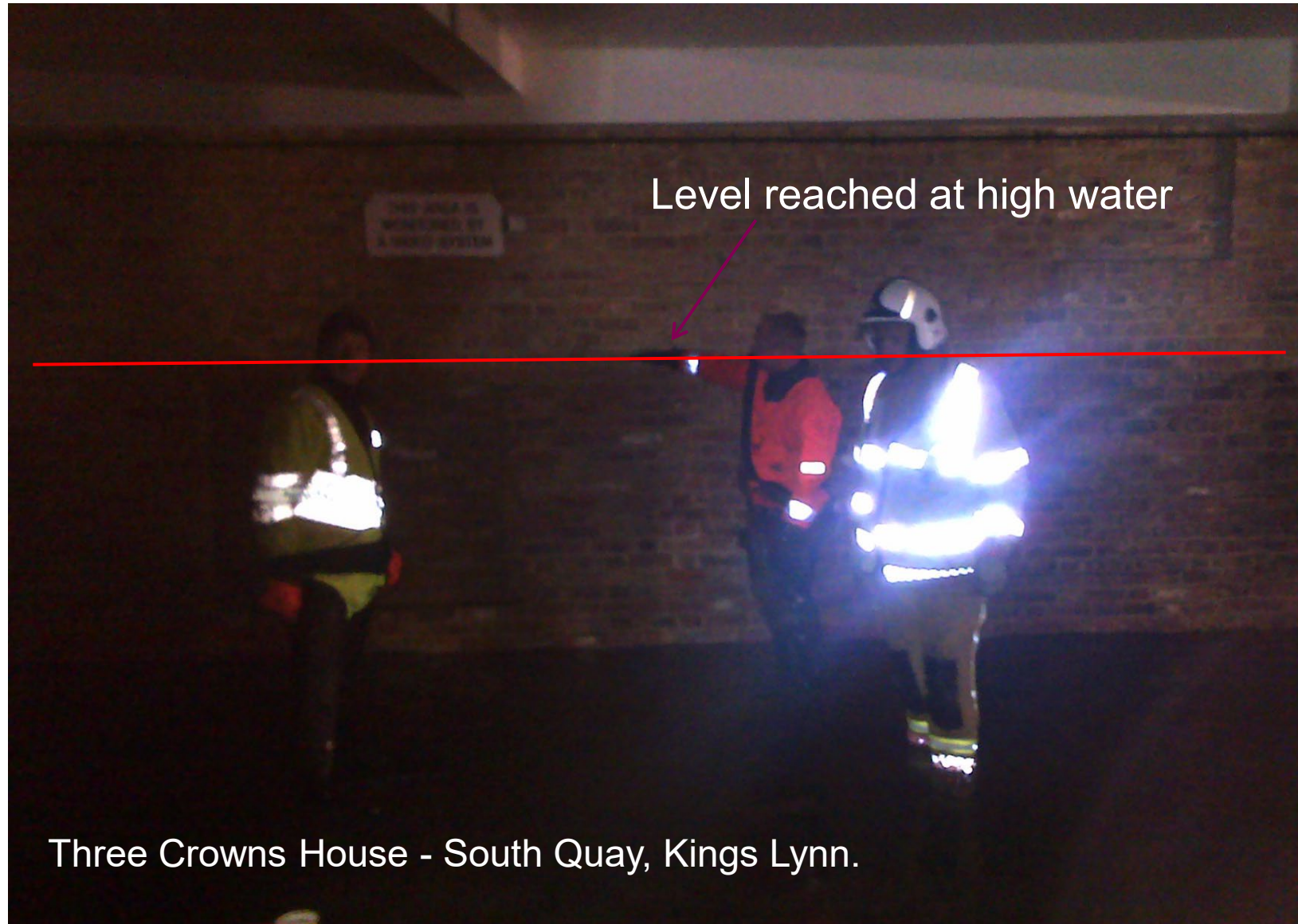


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Manor Hotel

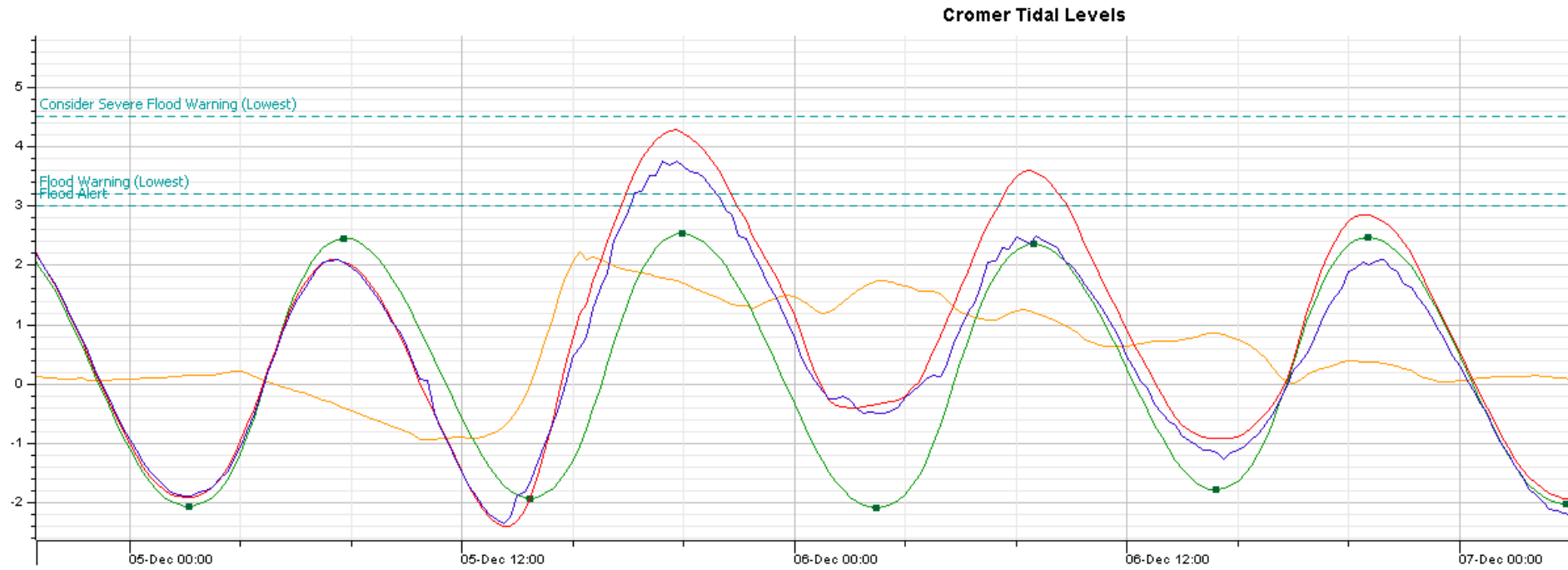


Wrack Line



Three Crowns House - South Quay, Kings Lynn.

Cromer





Walcott



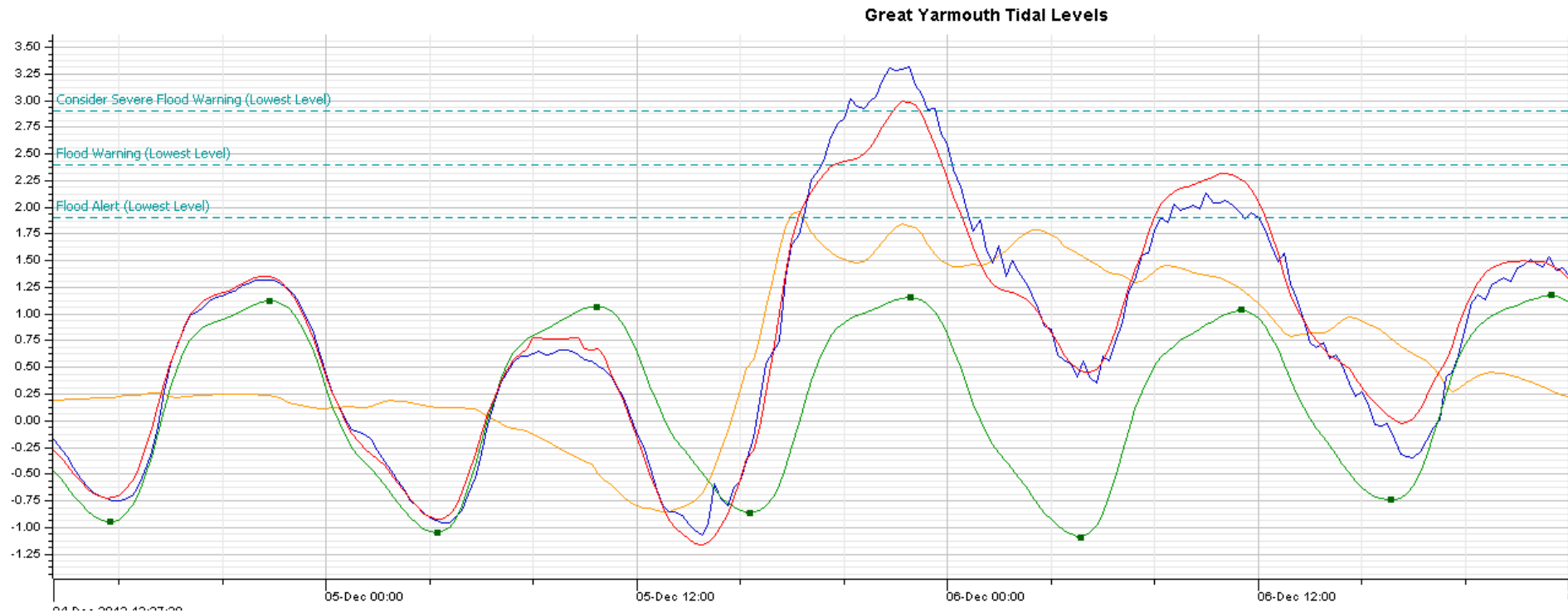






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Great Yarmouth







Hemsby was the
most prominent
location for the
media





Norfolk Property Flooded Numbers

Community	Commercial	Residential	Total
Wells next the Sea	21	18	39
Blakeney	6	20	26
Walcott*	5	112	117
Great Yarmouth	5	15	20
Salthouse	4	4	8
East Cley	0	10	10
Hunstanton	4	3	7
Kings Lynn	7	8	15
Snettisham	0	13	13
Thornham Common	0	2	2
Burnham Deepdale	0	1	1
Burnham Overy Staithe	0	12	12
Total	52	218	270

Recovery

- ➔ Recovery begins as storm begins
- ➔ Huge financial pressure on Local Authorities because of the cost of evacuation, the cost of emergency housing and the cost of clearing up the mess
- ➔ Bellwin Fund triggered
- ➔ Emergency repairs take place immediately
- ➔ Larger schemes are subject to proper scrutiny

Undertaking repairs

Friday/ Saturday/
Sunday

Temporary Repairs (e.g.
Burnham Norton)

Monday onwards
Permanent repairs



VIPs and media



Post 2013 Norfolk Major Schemes

- ➔ Blakeney repairs
- ➔ Bacton Sand Engine
- ➔ Great Yarmouth epoch 2
- ➔ Cromer
- ➔ Eccles to Winterton

2013: Reflections 10 years on

- ➔ A bigger flood than 1953 with much lower impacts and no loss of life.
- ➔ Forecasting and warning systems allowed all emergency services to move towards the coast in an organised manner.
- ➔ Still significant flooding with major impact on individuals
- ➔ The need for constant vigilance

Property Flooded Numbers – Summary

County	Commercial	Residential	Total
Norfolk	52	218	270
Suffolk	117	114	231
Essex	33	5	38
Total	202	337	539

Correct as of 1st February 2014

