

Hunstanton Coastal Defences Update

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April 2026

Borough Council of
**King's Lynn &
West Norfolk**



Coastal Trends

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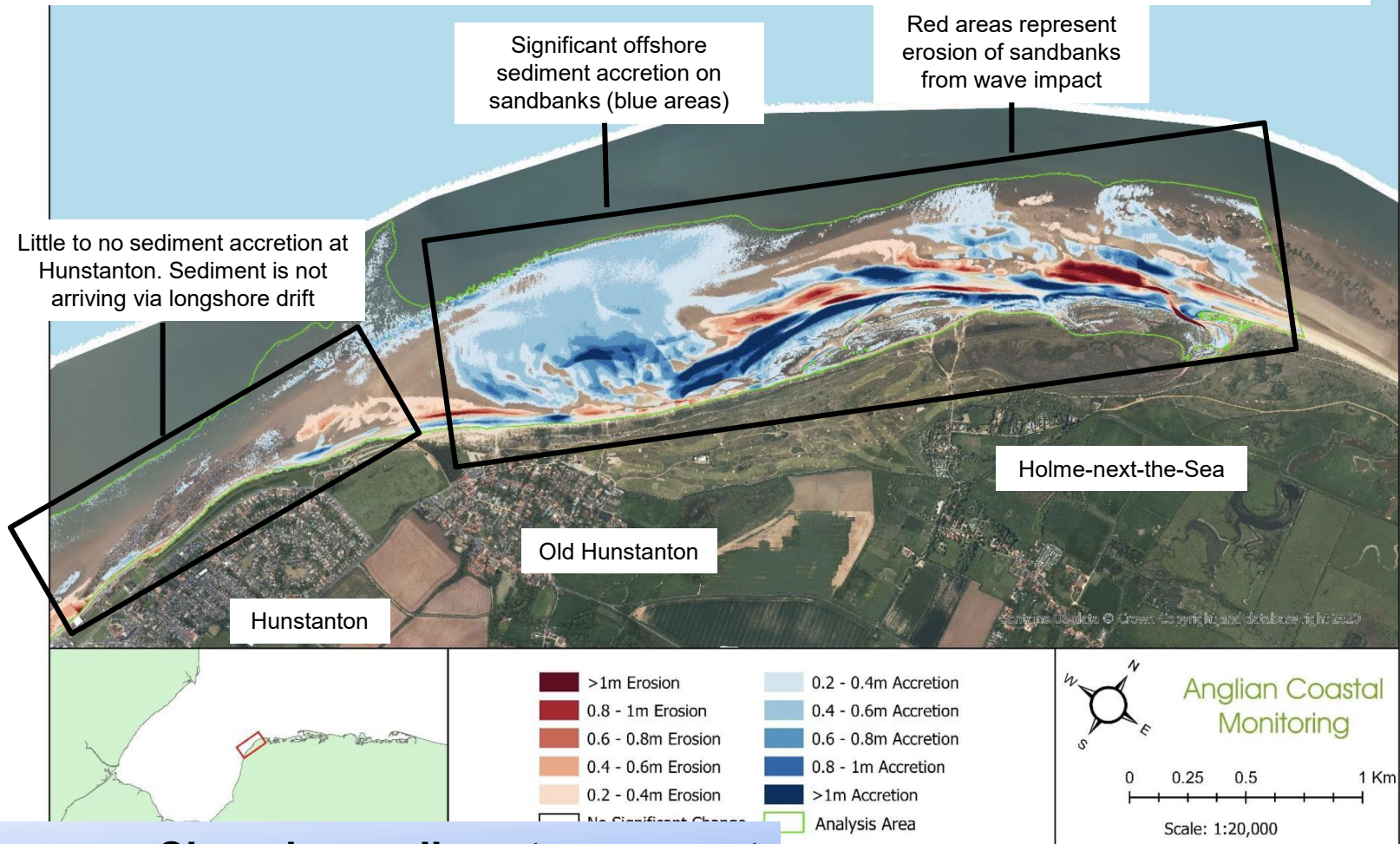


Coastal Process Changes

- There have been several queries regarding the condition of the beach and what changes have occurred
- The coastal processes at Hunstanton have changed since 2015
- Longshore drift has stopped, and this means no new beach material is entering the Wash and replenishing beach material at Hunstanton, it stays at Old Hunstanton & Holme beaches
- Cross-shore drift has replaced longshore drift, combined with near-shore currents, means erosion of the foreshore is occurring at Hunstanton
- Beach levels have reduced up to 3m in places and cross shore drift has led to the formation of new large sand banks offshore in the Wash
- This information has been previously published and is available in more detail here https://www.west-norfolk.gov.uk/info/385/coastal/988/coastal_trend_reports



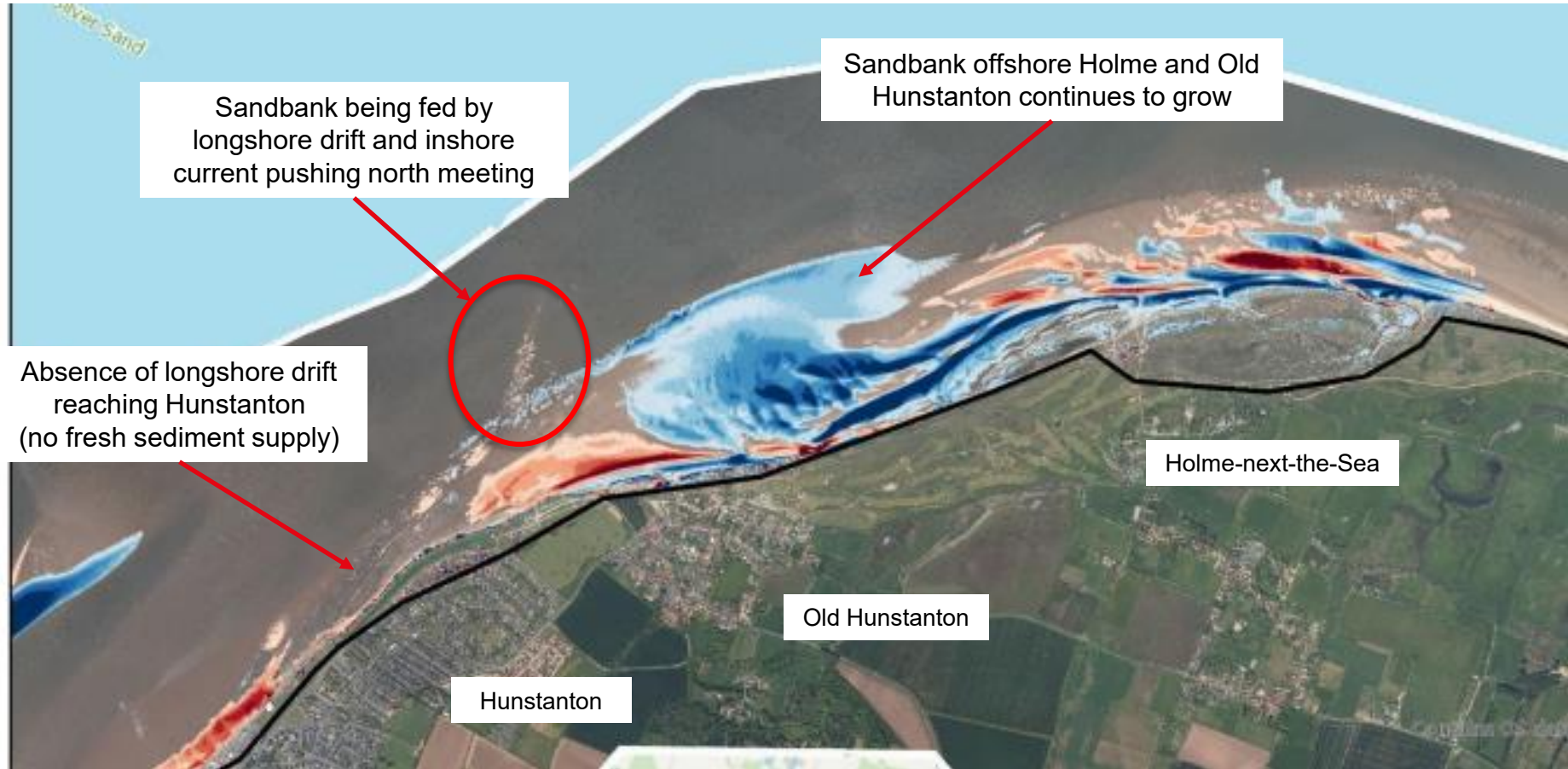
Wash Trends Report (2020) – Completed by the Anglian Coastal Monitoring Programme



Challenges...Changing sediment movement



2024 Data Outlook – Aerial LiDAR



Cause...? Near-short channel moving north

2 processes meeting and act as a blocker to sediment movement via Longshore Drift to Hunstanton



Longshore drift = sediment moved parallel to the coast

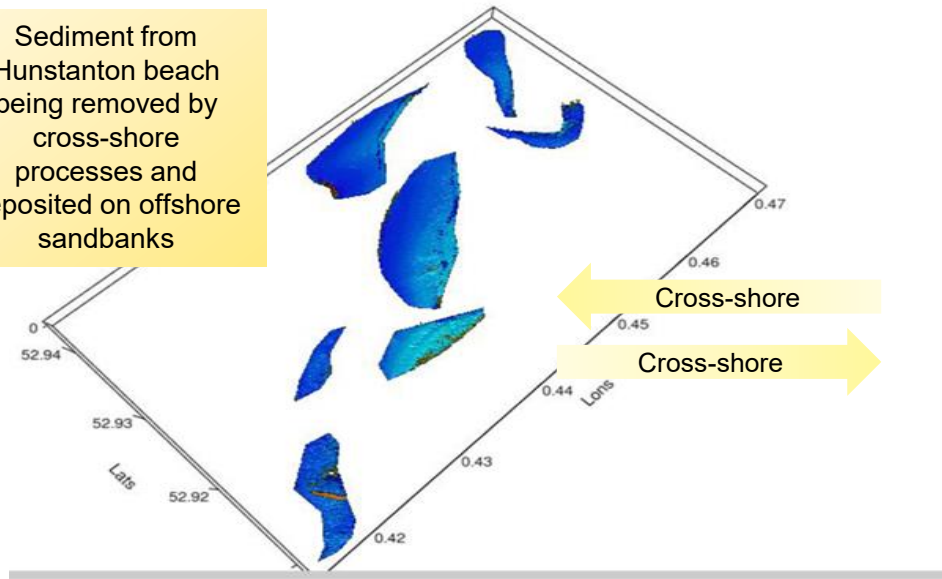
Cross-shore = sediment moved up and down the beach with incoming and outgoing tides

4D Radar Deployment

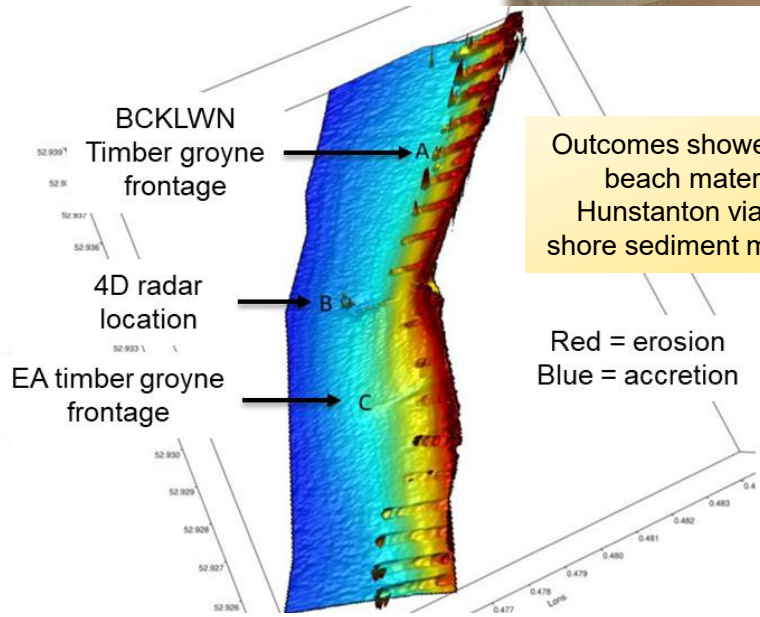
- Penetrates water to map the seabed and its features (e.g. sandbanks)
- Deployed between August and September 2021
- Outcomes supported outcomes of Wash Trends Report & Jacobs Groyne Effectiveness Reports – showing erosion of the beach and growth of sandbanks offshore from Hunstanton



Sediment from Hunstanton beach being removed by cross-shore processes and deposited on offshore sandbanks



Sandbanks offshore from Hunstanton

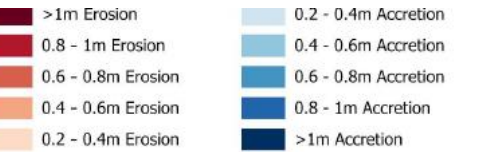


Outcomes showed loss of beach material at Hunstanton via cross-shore sediment movement

Red = erosion
Blue = accretion



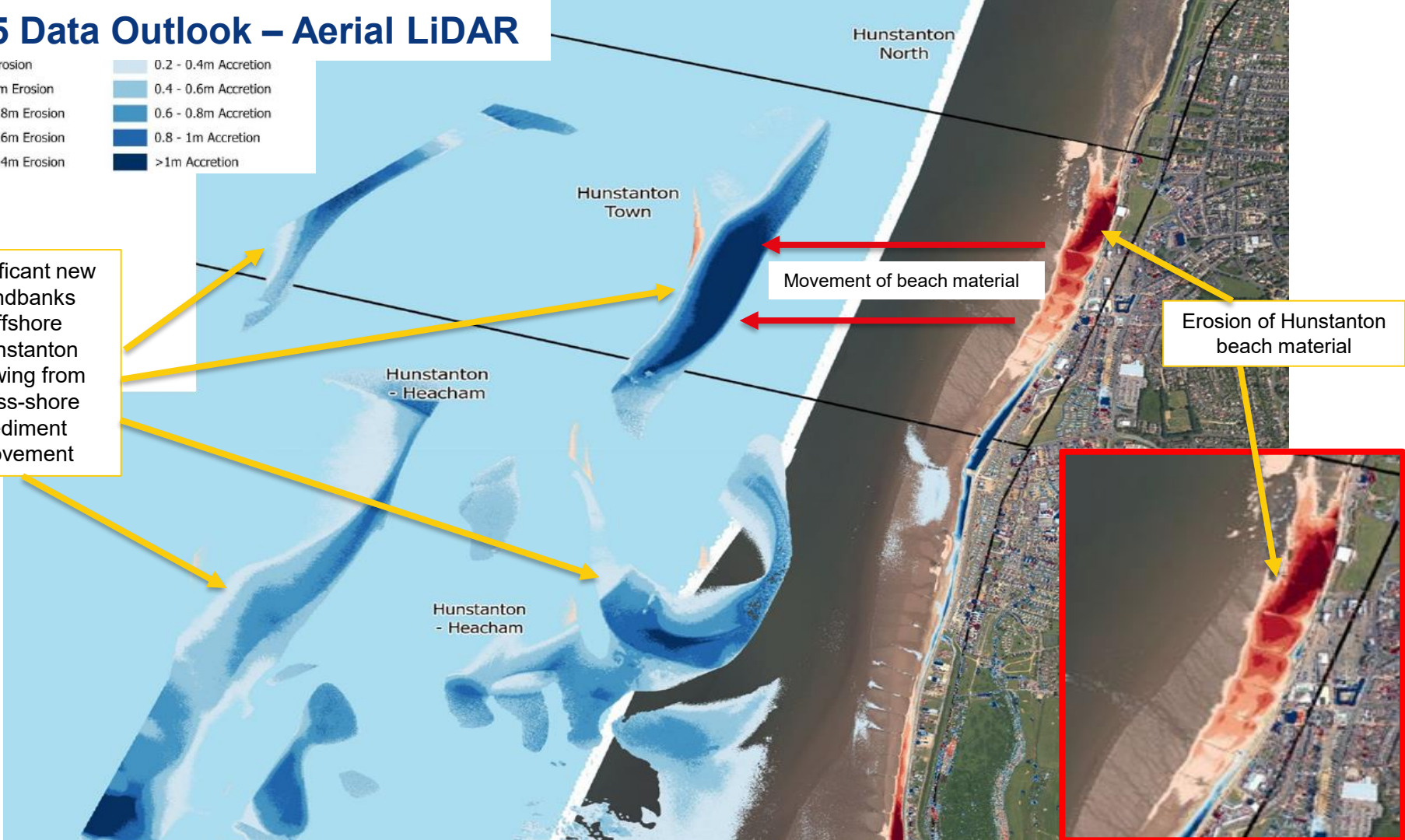
2025 Data Outlook – Aerial LiDAR



Significant new sandbanks offshore Hunstanton growing from cross-shore sediment movement

Movement of beach material

Erosion of Hunstanton beach material



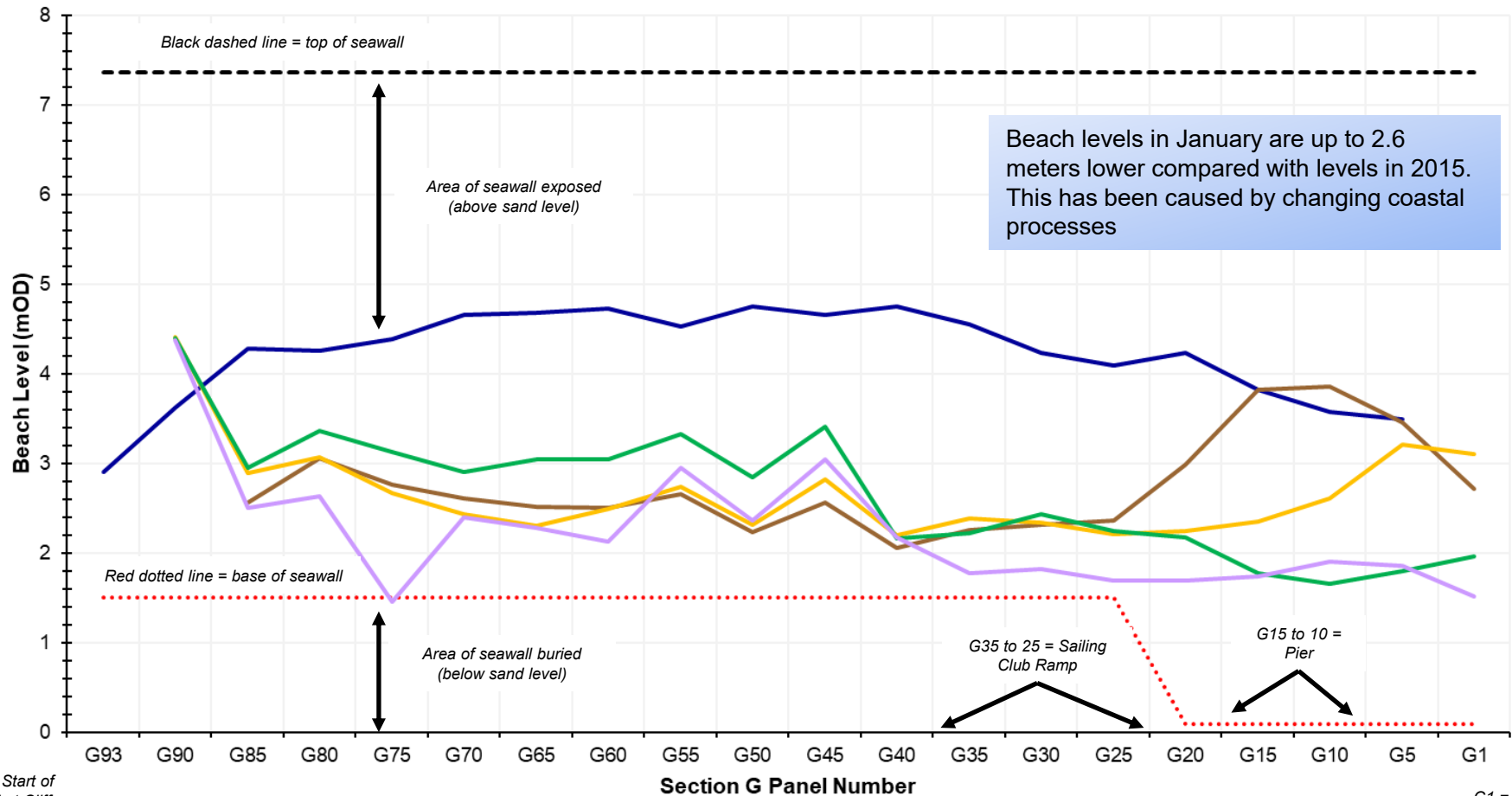
Beach Level Monitoring

- Officers regularly monitor the amount of beach material at the base of the coastal defences
- This enables us to review if further works are required
- The next slide shows the monitoring that has been completed
- Imagine standing on the beach with your back to the sea and looking at the coastal defences between the rock shop and cliffs



Section G Beach Levels

Coloured lines = Height of beach material against the base of the seawall



G93 = Start of seawall at Cliffs

G1 = End of seawall ramp

--- Seawall Crest Base of Seawall — 2015 Average — 2020 Average — 2024 Average — 2025 Average — January 2026

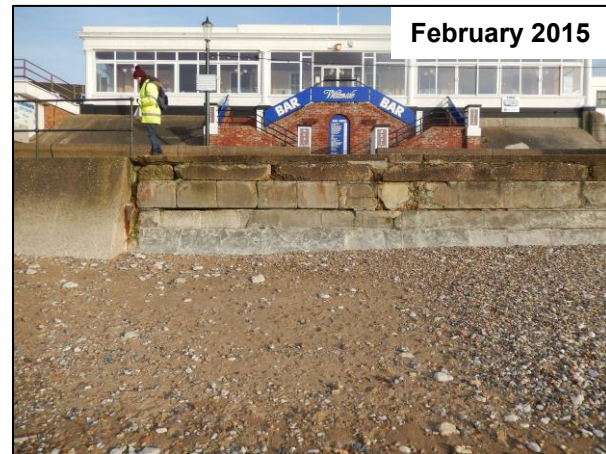
Section G (2015 vs 2026)



Section F (2015 vs 2026)



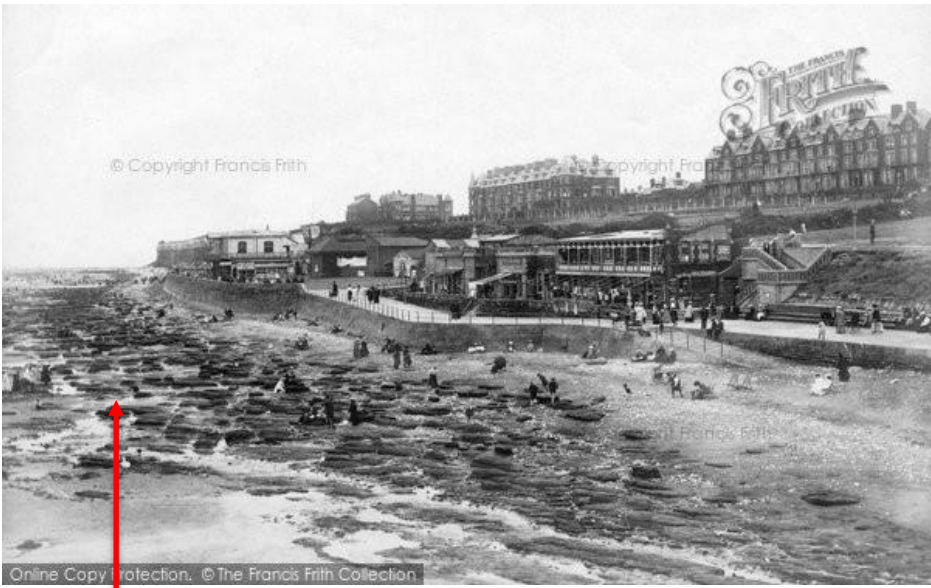
Section E (2015 vs 2026)



Hunstanton in 1893 & 1907 – Similar beach conditions to today



Hunstanton in 1893



Hunstanton in 1907

Widespread Carstone exposure and limited beach cover is evident

Beach conditions between 1893-1907 look very similar to today

Groyne Effectiveness Report

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Purpose of Assessment

- Joint assessment by the Environment Agency & Borough Council
- Assessment completed by independent coastal engineers and reviewed how changes in coastal processes impacts the effectiveness of the groynes between Hunstanton and Heacham at retaining beach material
- Outcomes of report designed to inform the most appropriate future investment and management of the groyne fields
- Final report received December 2021, details found here https://www.west-norfolk.gov.uk/info/385/coastal/988/coastal_trend_reports



Report Outcomes

- Groynes are designed to trap beach sediment moved via longshore drift which is no longer active at Hunstanton
- Groynes cannot trap beach sediment moved via cross-shore processes
- Without longshore drift groynes are ineffective, and further investment in maintenance or replacement of the groynes will not improve beach levels. Therefore, groynes should be maintained from a health and safety perspective going forwards
- For groynes to be effective at Hunstanton, another change in coastal processes (e.g. longshore drift resumes) would need to occur
- Current monitoring of sediment movement shows offshore sandbanks continue to grow, and no fresh sediment is arriving at Hunstanton via longshore drift



Current management of groynes

- Following completion of the groyne assessment, we have been maintaining the timber and concrete groynes from a health and safety perspective
- Regular inspections are undertaken to inform works required including:
 - Cutting pointed timber stakes flat when they develop a pointed end (see right)
 - Securing loose timber groyne elements, and where this is no longer possible, removing them
 - Removal of concrete groynes when they are at risk of falling over or undermined (see below)



Hunstanton Emergency Repair Works

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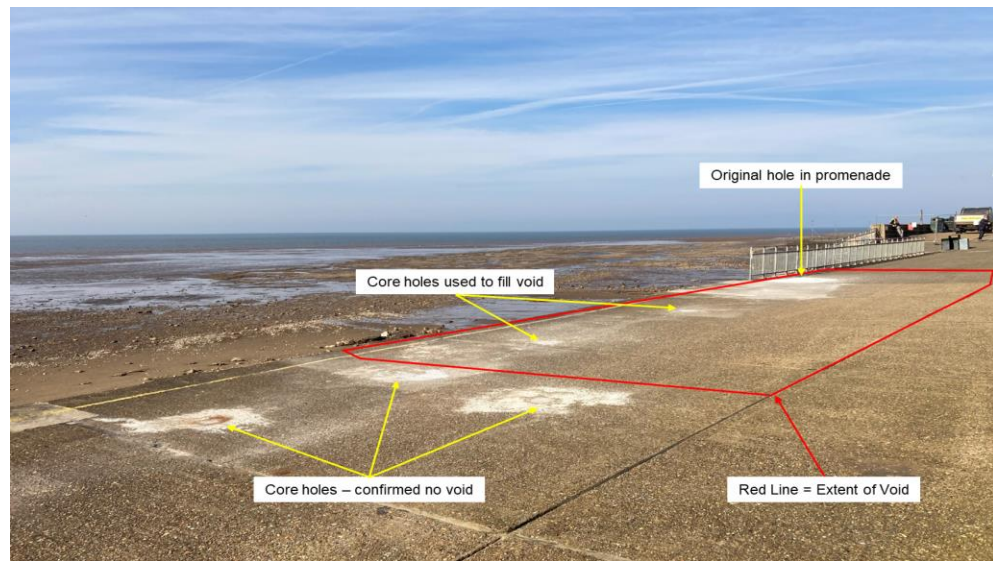
What Happened?

- High tides combined with strong winds between the 4th – 5th February caused around 20-30cm of beach material to be eroded.
- Waves travelled beneath the base of the seawall, washing out internal fill leading to a void forming.
- The void resulted in a lack of structural support to the promenade, and a hole formed at the surface.



How large was the void?

- While the hole in the asphalt promenade was approximately 1.5m long x 1.5m wide, the void beneath was much larger
- The final estimated size of the void was 26.5m long, 3.5m deep and 4m wide



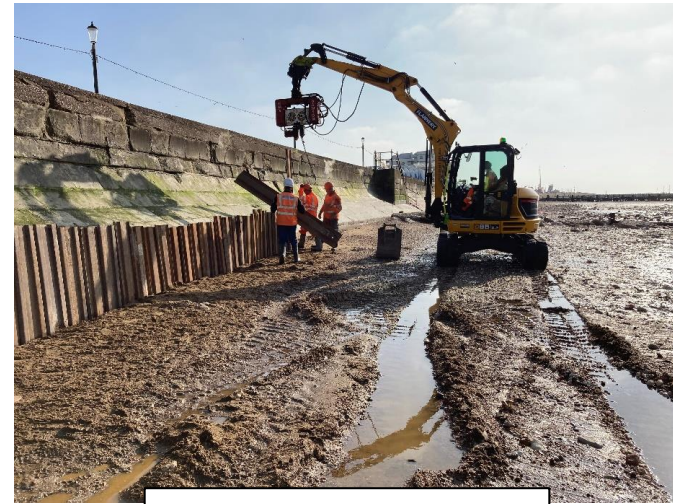
Emergency Works

Once agreement with multiple agencies was reached regarding emergency works, preparation works were completed between the 2nd and 17th March including:

- Coring holes through promenade to confirm void size and to facilitate pouring of concrete to fill the void
- Filling any gaps in seawall joints to prevent concrete from seeping out
- Installation of steel trench piles at the base of the seawall in-front of the void to prevent concrete seeping out and further undermining



Coring of promenade



Installation of steel trench piles



Core Access Hole cut through Prom

1950's concrete
deck

Compressed
aggregate fill
between slabs

1920's
concrete deck

Compressed
aggregate
below 1920's
deck – no void
at this location

Sheet piles being
installed at foot
of seawall.



Emergency Works

- Between the 11th to 16th March, pouring of concrete to fill the void took place
- A total of 136.5m³ of concrete was poured into the void (22 concrete wagons)



Finished concrete pour at prom surface



Pouring of concrete



Pouring of concrete using concrete pump





Concrete pump for access to
fill void

Underside of Prom Deck

Picture taken using
Go Pro camera
through core
access hole

Section E Seawall reverse side

First pours of
concrete

Looking north

Concrete pour covering base of void
and undermined wall

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Costs

Engineering works (inc. waste disposal)	£97,212.21
Support costs (traffic management, fencing, sweeper)	£1,875.28
Structural stability survey	£1,495.00
Structural engineering assessment	£16,250
Replacement waste bins	£6,289.43
Replacement electrical supply for kiosks	£19,999.77
Replacement water supply for kiosks	£10,068
TOTAL	£153,189.69



Hunstanton Capital Works

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Geotechnical Investigation

- Excavation of 25 trial pits along the base of the seawall to expose the conditions seawall foundations which are normally buried beneath beach material.
- A ground penetrating radar survey to assess the internal condition of the promenade deck
- A falling weight deflectometer to test the material strength of the concrete promenade deck
- On site investigations were completed in Autumn 2024, and a final report of outcomes received in July 2025



Geotechnical Investigations – Outcomes

Final report received on the 31st July 2025.

Outcomes: -

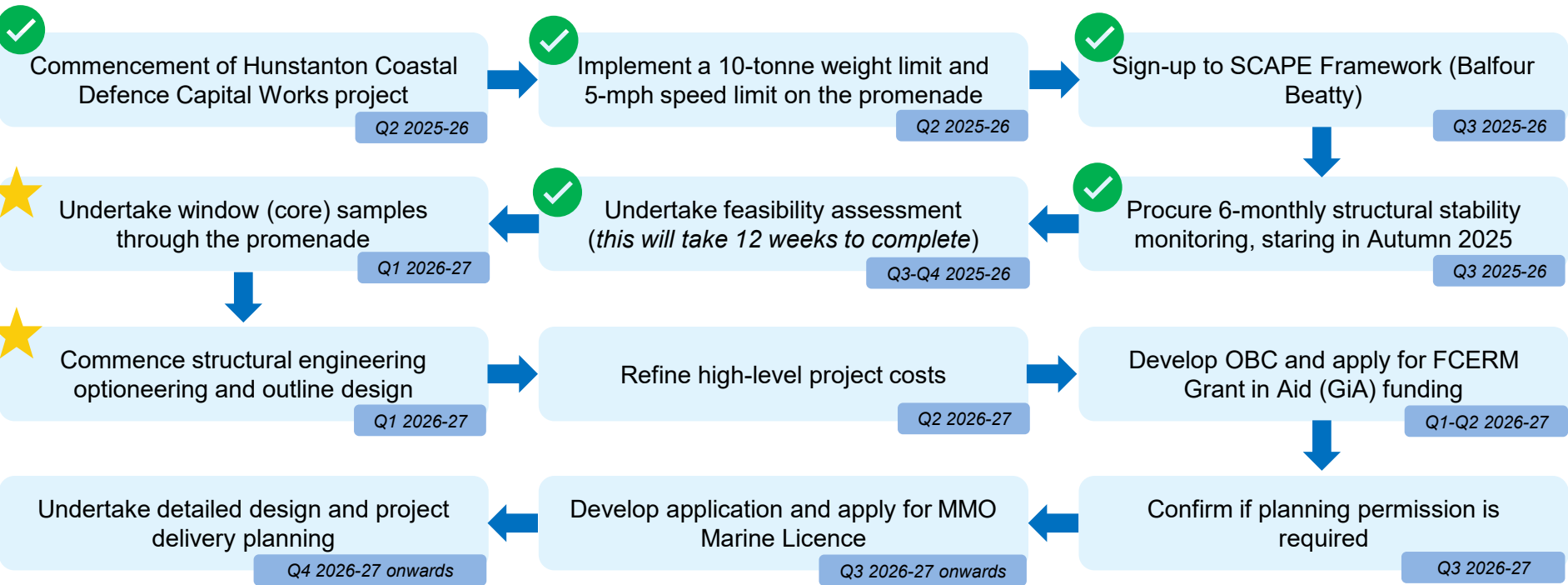
- The concrete promenade deck has poor structural condition and voids beneath it and requires replacement
- Seawall Section E is at risk of undermining if beach levels lower further and requires toe protection (sheet pile) installation and a seawall reface to mitigate future risk of undermining failure.
- Seawall Sections F and G are at risk of structural failure if beach levels lower further and require toe protection (sheet pile) installation and a seawall reface to mitigate future risk of structural failure.

We now need to move away from a ‘patch and mend’ approach to a capital works rebuild of aspects of the coastal defences. This is to ensure they continue to provide their intended standard of protection.



Project Planning – Next Steps & Timeline

The project planning phase is anticipated to take 12-18 months to complete and will include the following steps: -



Engagement with stakeholders and promenade traders will take place as we work through the above steps.

Once these stages are complete, a multi-year build can commence.

Completed Ongoing

Works Since September 2025

- Following outputs of Geotechnical Investigations and their recommendations in summer 2025, a capital works project to rebuild aspects of the Coastal Defences has commenced
- Since the WECMS Stakeholder Forum last met in September 2025 works completed include: -
 - ✓ Balfour Beatty completed a high-level feasibility assessment
 - ✓ Entered contract with Balfour Beatty & commenced undertaking initial works
 - ✓ Submitted an application for RFCC Local Levy funding to support preliminary works
 - ✓ Started economic assessments to support funding business case
 - ✓ Procured and undertaken structural stability monitoring (Dec-25 & Mar-26)
 - ✓ Undertaken a repeat GPR survey of promenade between Sailing Club and Oasis
 - ✓ Undertaken procurement of window sampling investigations



Works going forwards (next 6-months)

- Over the next 6-months we will continue working on developing the capital works project.
- Key activities planned include: -
 - ✓ Undertake window (core) sampling of the promenade
 - ✓ Continue 3-monthly structural stability monitoring
 - ✓ Undertake repeat GPR survey of all 1.5km of promenade
 - ✓ Procure a design team
 - ✓ Complete economic assessments to support an OBC
 - ✓ Confirm new funding rule changes from April 2026
 - ✓ Begin design optioneering, outline design and OBC development
 - ✓ Stakeholder engagement

