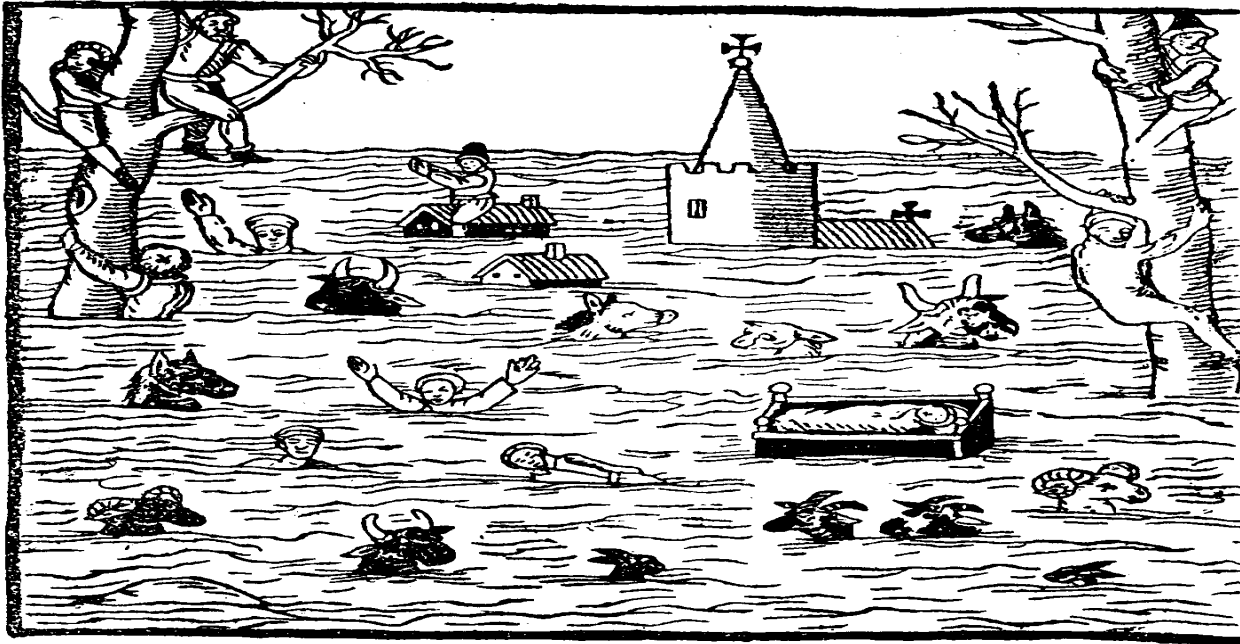


West Somerset Coastline

flood and erosion risks

1607.

A true report of certaine wonderfull overflowinges
of Waters, now lately in Summerset-shire, Norfolk, and other
places of England: destroying many thousands of men, women,
and children, overthrowing and bearing downe
whole townes and villages, and drowning
infinite numbers of sheepe and
other Cattle.



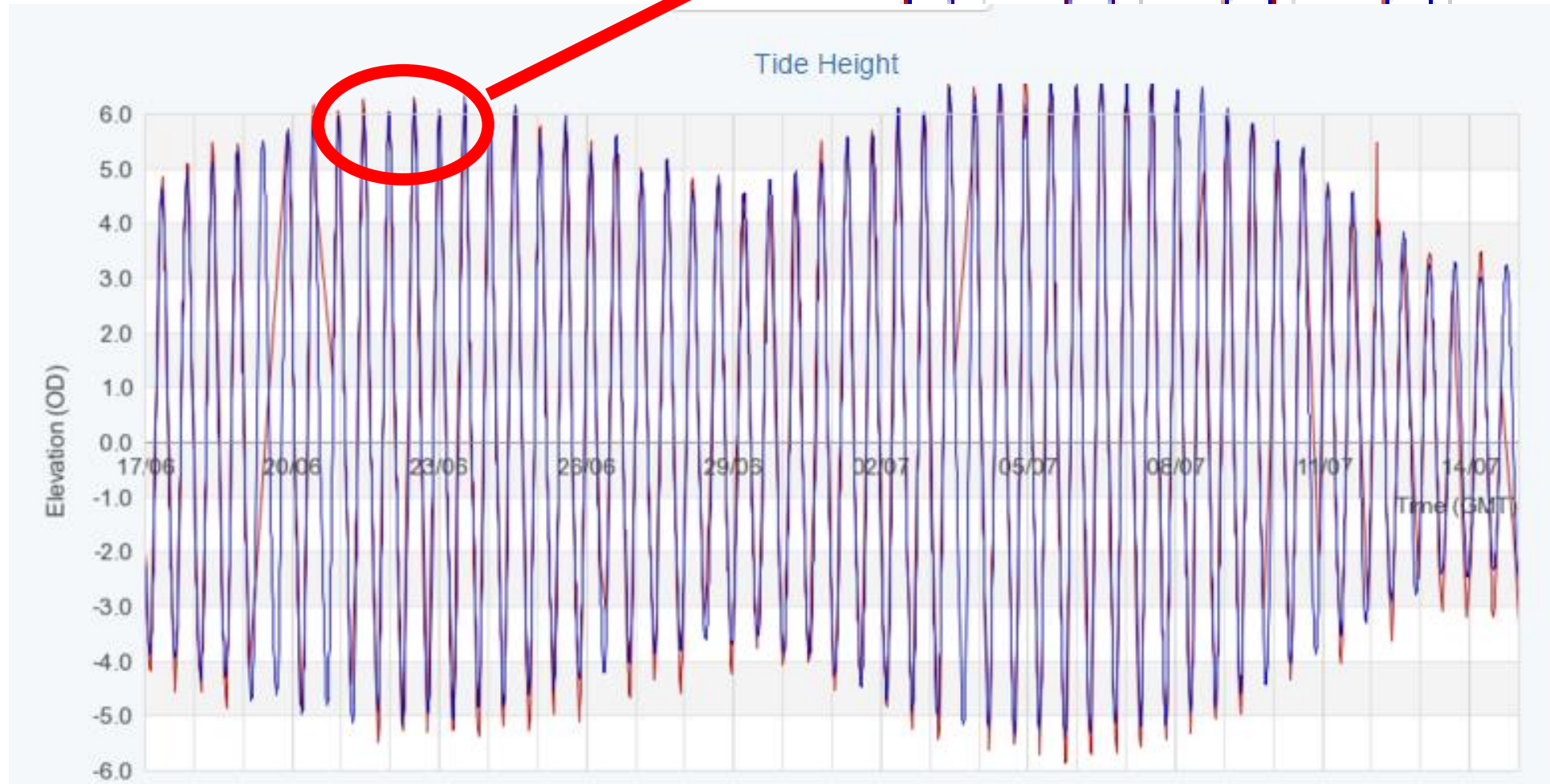
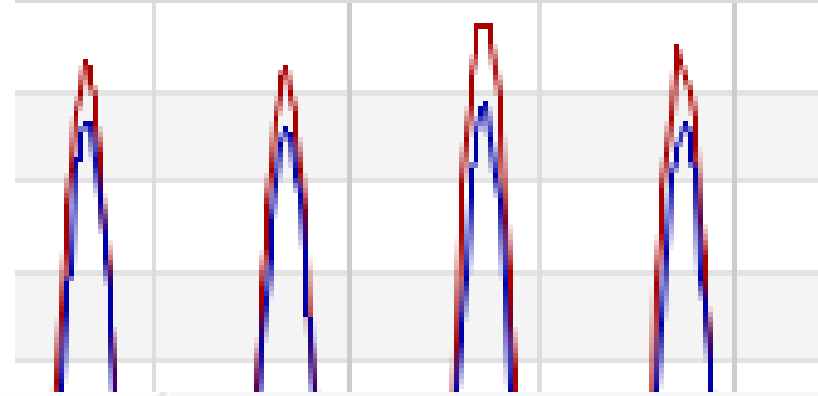
Printed at London by W. I. for Edward White and are to be sold
at the Gunne at the North doore of Pauls.

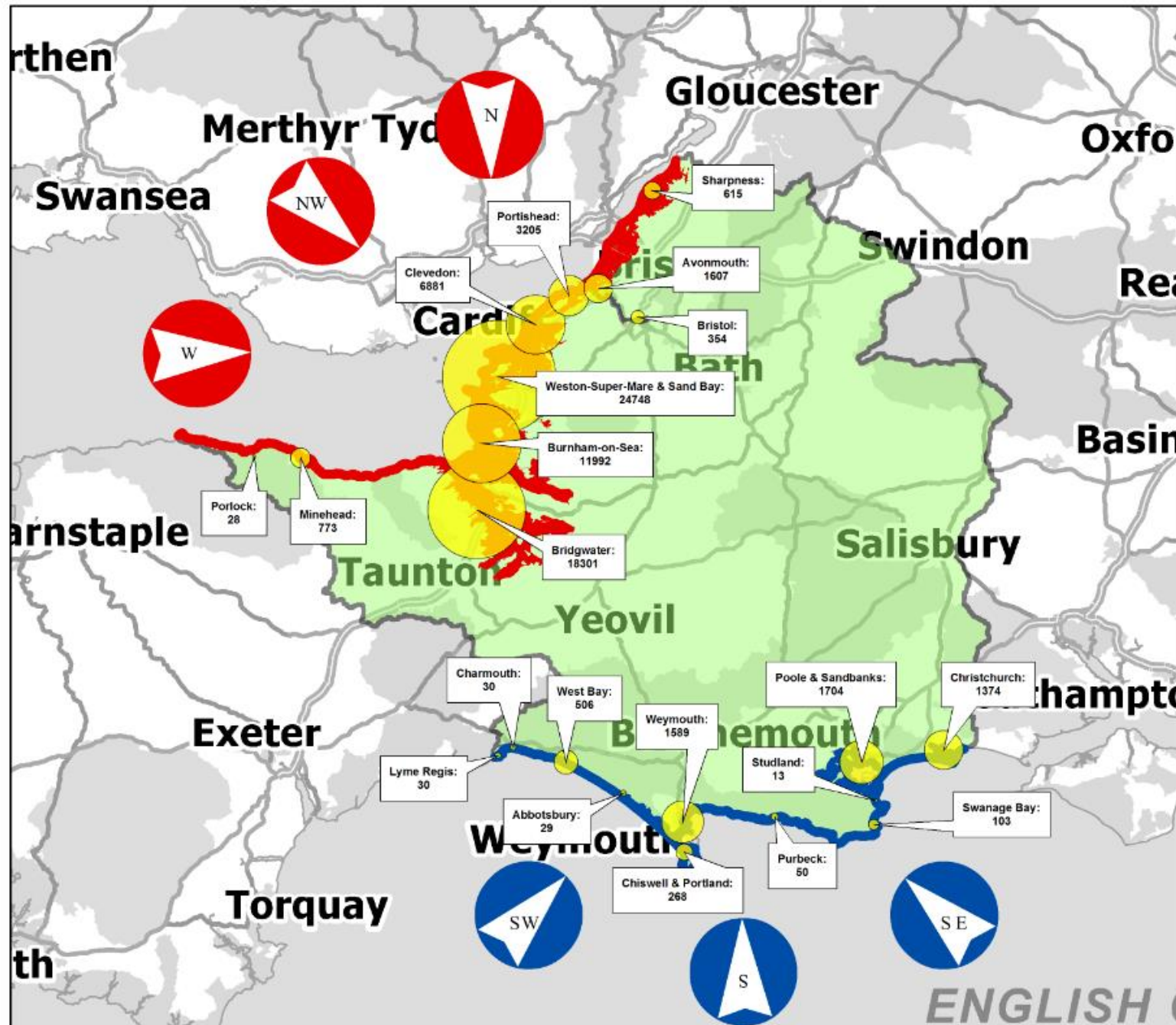


John Buttivant
Coastal Engineer



Severn Bridge Tide





Wessex Worst Case Coastal: North Coast and South Coast Events

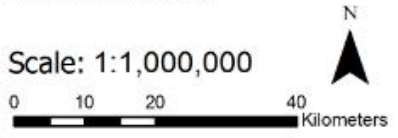
This map shows the worst case North Coast scenario in red, with high tides exacerbated by strong winds from the North and West. The worst case South Coast scenario is in blue, with high tides exacerbated by strong winds from Southerly directions

Legend

- Properties At Risk**
 - 10,000
 - 10
- Wessex North Coast
- Wessex South Coast
- Coastal Flood Risk NWessex
- Coastal Flood Risk SWessex
- Wessex Area
- Worst Case Wind Direction**
 - Red: North Coast
 - Blue: South Coast



Wessex Location map



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ENGLISH

Wake up call from Eunice

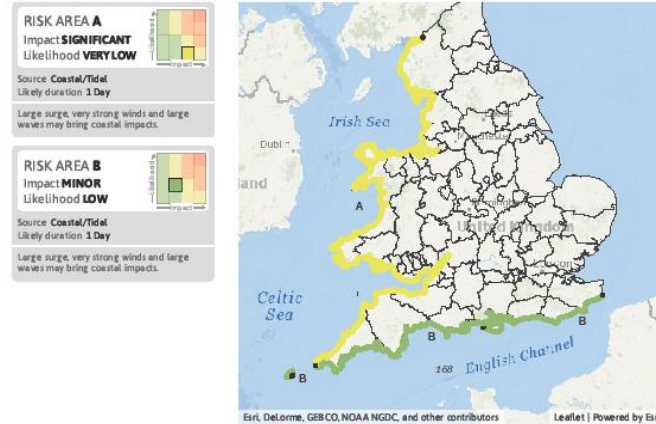
Flood Guidance Statement
10:30hrs Monday 14 February 2022

FLOODFORECASTINGCENTRE
Met Office



Significant coastal flooding impacts are possible but not expected for Wales and the west coast of England on Friday. The overall flood risk is LOW.

Specific Areas of Concern Map 1: Friday 18 February 2022.



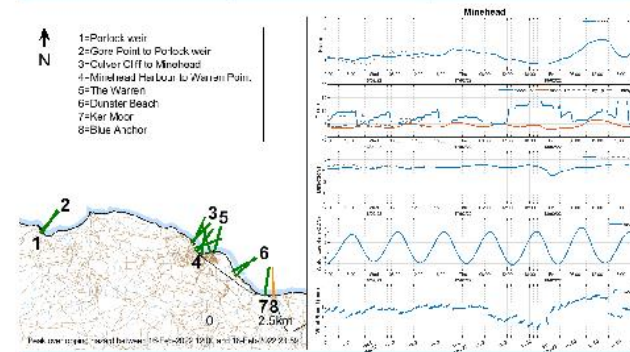
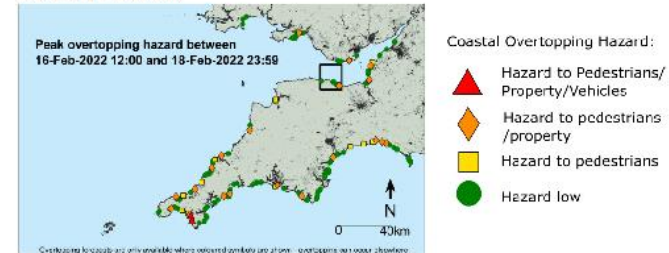
Property no.s	Scenario
16.02.2022	66070 Worst case
	3382 Best estimate
	3621 Operational
17.02.2022	11am
	12094 Worst case
	3278 Best estimate
	3698 Operational
17.02.2022	12.30pm
	4362 Worst case
	2606 Best estimate
	3698 Operational

OWWL
Operational Wave & Water Level Model

sweep
UNIVERSITY OF PLYMOUTH

Coastal Overtopping Forecast

Generated: 16:53 16 Feb 2022



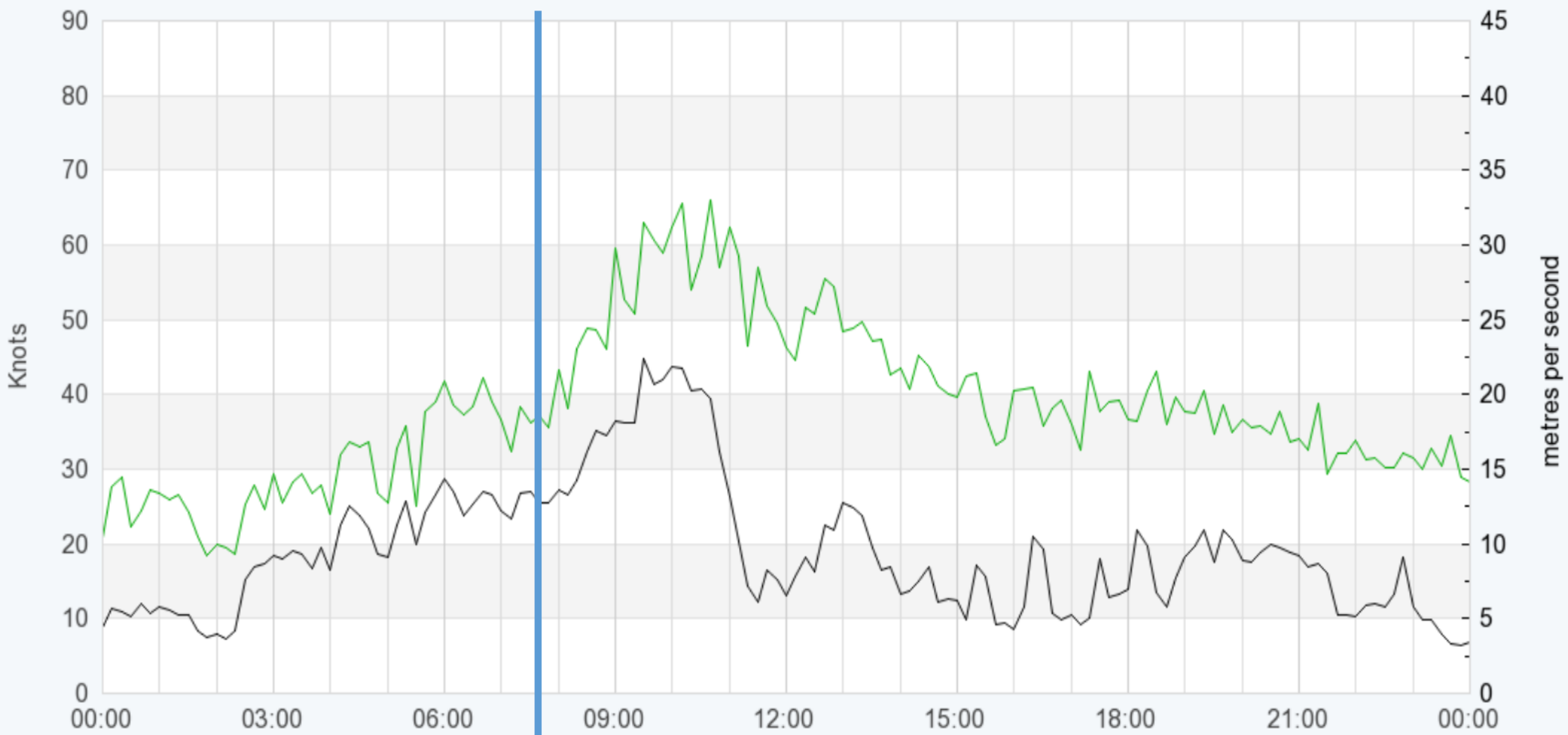
Acknowledgement: Boundary forcing data provided by Met Office



Previous

Wind Speed

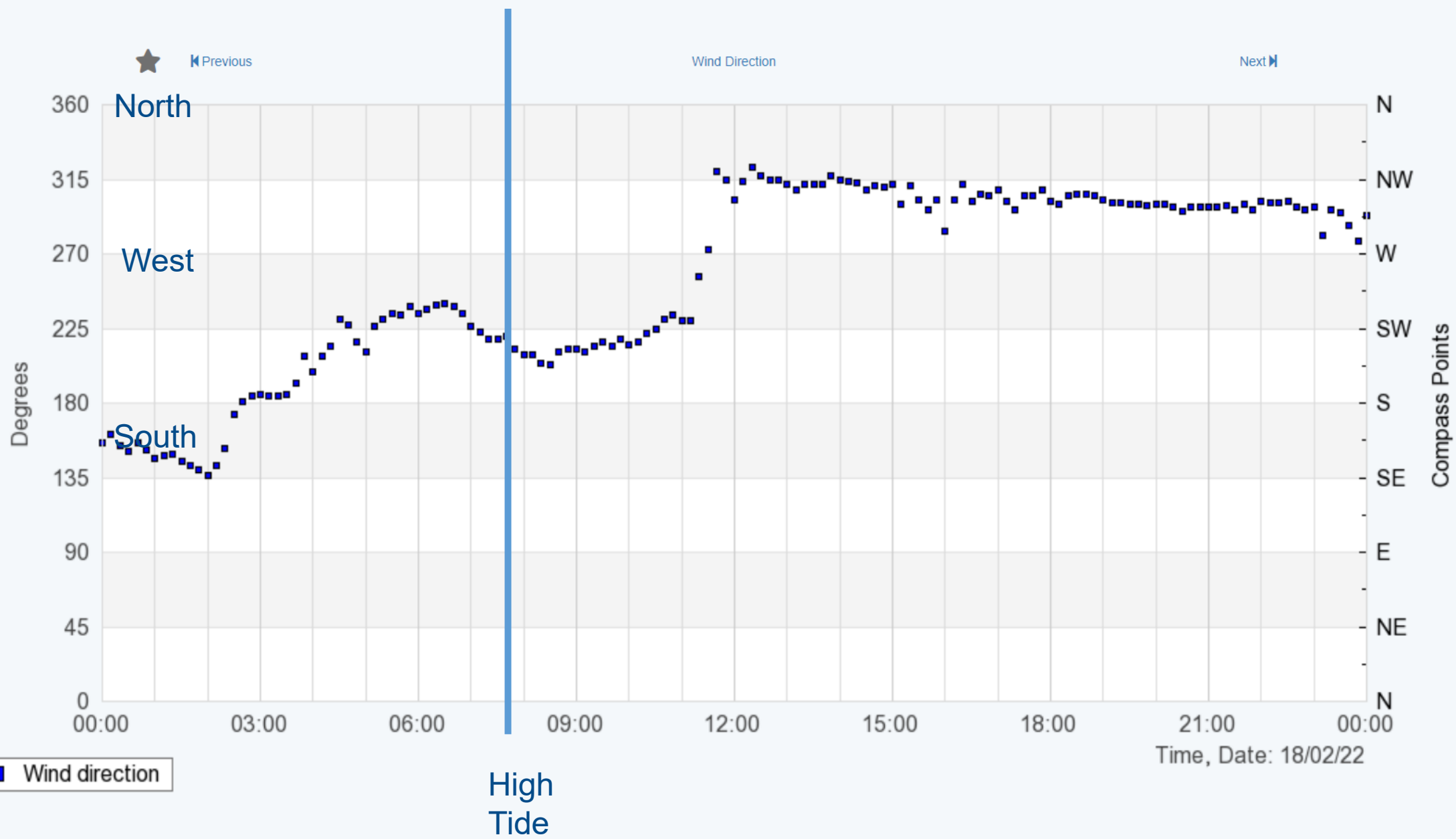
Next



— Wind speed — Gust speed

High Tide

Time, Date: 18/02/22



Eunice – Waves

E Warwick-Champion

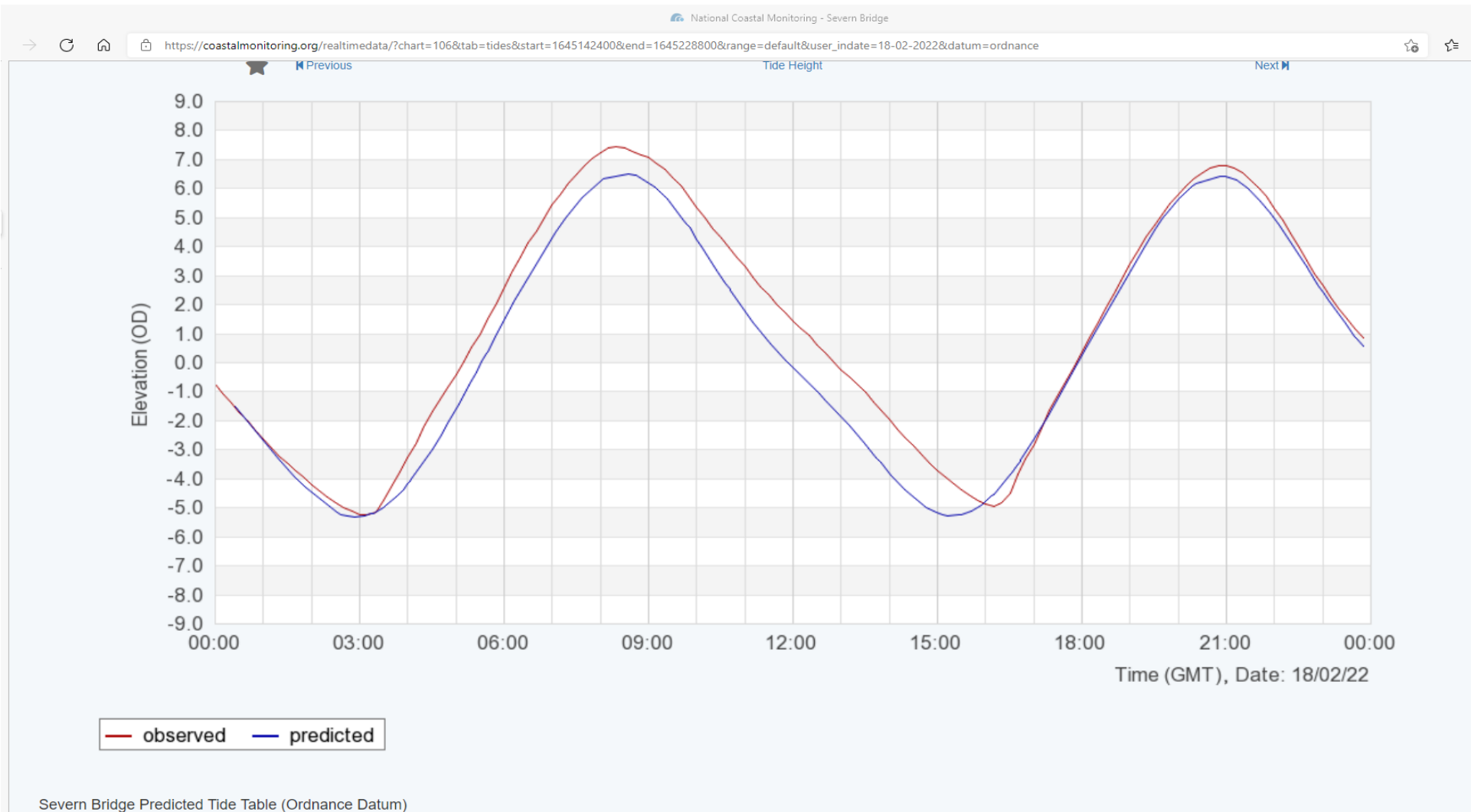
Channel Coastal Observatory



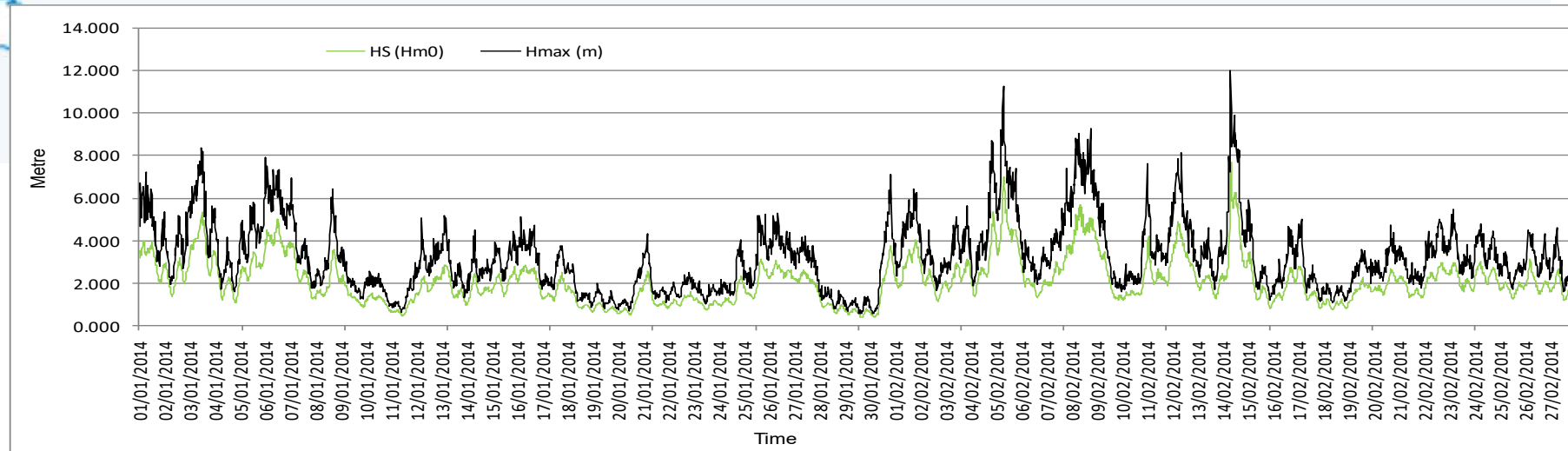
North Cornwall – Storms Eunice and Franklin (18-Feb-2022 to 20/21-Feb-2022)

18 Feb 2022 (Eunice)						
Site	SMS	Sci	Bdf*	Scw	Mhd*	Wst
Max Hs Timestamp	18-Feb-2022 07:30:00	18-Feb-2022 11:00:00	18-Feb-2022 16:00:00	18-Feb-2022 12:00:00	18-Feb-2022 11:30:00	18-Feb-2022 11:30:00
Max Hs (m)	4.97	11.48	~ 6.57	5.42	~ 3.08	3.02
RP	> 1 in 1	> 1 in 2	> 1 in 10	> 1 in 1	> 1 in 100	1 in 100
Storm Duration (hours)	1.0	10	10	10	6	5
Water level (m OD)	0.63	-1.83	~ -1.00	~ -3.30	~ -0.35	~ -0.35
Water level (m CD)	4.54	1.08	~ 3.80	~ 1.50	~ 5.55	~ 5.55
Tidal stage	HW+2	HW+5	HW-4	HW+5	HW+4	HW+4
Tidal surge (m)	~ 0.05	~ 0.05	~ -0.3	~ -0.1	~ 0.75	~ 0.75
JRP	-	-	-	-	> 1 in 100	> 1 in 100
*Breaking waves						
20/21 Feb 2022 (Franklin)						
Site	SMS	Sci	Bdf*	Scw	Mhd	Wst
Max Hs Timestamp	-	21-Feb-2022 05:00:00	21-Feb-2022 06:30:00	20-Feb-2022 19:00:00	20-Feb-2022 23:00:00	20-Feb-2022 20:00:00
Max Hs	-	10.28	~ 5.61	5.01	3.00	2.32
RP	-	> 1 in 1	> 1 in 0.25	> 1 in 0.25	> 1 in 20	> 1 in 0.25
Storm Duration	-	10.5	17	6.5	11	6.5
Water level (OD)	-	0.49	~ 1.30	~ 3.00	~ 3.40	~ 4.20
Water level (CD)	-	3.40	~ 6.10	~ 7.80	~ 9.30	~ 10.10
Tidal stage	-	HW-2	HW-2	HW-2	HW+2	HW-1
Tidal surge	-	~ -0.1	~ -0.2	~ 0.3	~ -0.1	~ 0.1
JRP	-	-	-	-	1 in 100	> 1 in 5

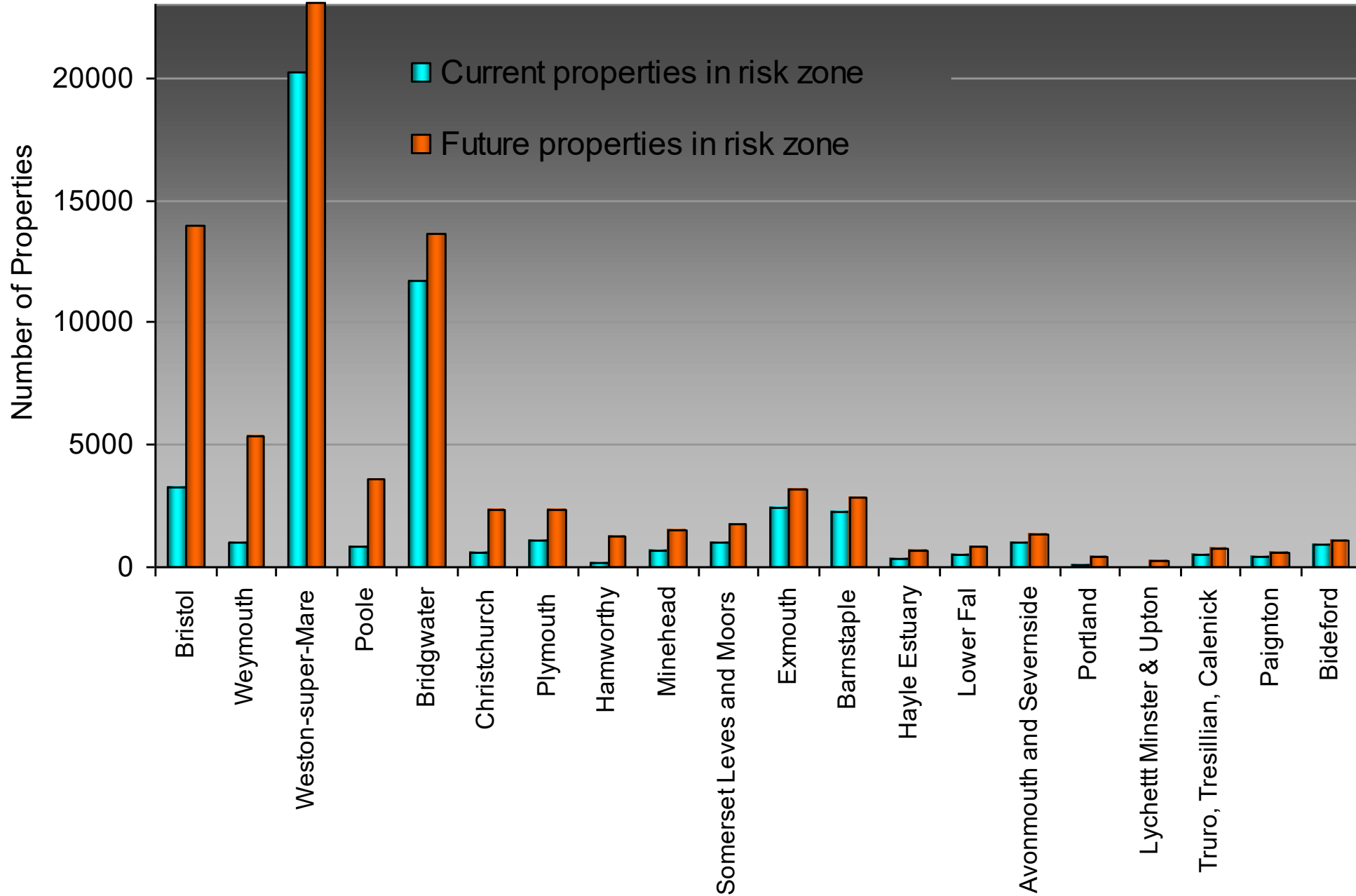
Eunice – Severn Bridge Tide Gauge



Coastal monitoring wave & tide network



Current and Future property at risk



Managing the risks

- ➔ Responsibilities
 - ➔ EA
 - ➔ Local Authorities
 - ➔ Water Companies
 - ➔ IDBs
 - ➔ Others
- ➔ Coastal Groups
 - ➔ SECG
 - ➔ SWCG



- ➔ Maintenance
- ➔ Inspection
- ➔ Shoreline Management Plans
- ➔ Local Plan
- ➔ SFRA
- ➔ Severn Estuary Strategy
- ➔ Emergency Plans
- ➔ Beach Management Plans
- ➔ CCMA's
- ➔ DWMP's



3 Wembury Point to Devil's Point (policy units 6c27 to 6c30)
 This stretch of coastline encompasses the large urban settlement of Plymouth, the protection of which is a key policy driver. An additional consideration in this section is the need to protect areas of active former landfill and potentially contaminated land from increasing rates of erosion and flooding. As such, the policy for the majority of this section is to continue to 'Hold the Line'.

The cliffs along the eastern side of Plymouth Sound are of outstanding landscape and geological value and a policy of 'No Active Intervention' in this area would ensure that these features remain in the future.

2 Tamar Estuary (policy units 6c31 to 6c40)
 The Tamar Estuary contains both a number of developed areas as well as large areas of natural, undefended estuary. Policies aim to hold the existing defences where they occur and undertake no intervention in the undefended areas of the estuary.

In areas where there is potential for 'Managed Realignment', opportunities for the expansion of existing wetland areas can be explored through targeting environmental schemes such as stewardship. There are also opportunities for new areas of wetland habitat creation through the design of appropriate managed realignment schemes. Within these areas, the aim of managed realignment is to both create habitat and reduce flood risk in other parts of the estuary. As such, areas where there are existing defences would be maintained under this policy. However, it is not envisaged that new defences will be constructed in currently undefended areas under this policy.

1 Mount Edg (policy units)
 This coastline is cliffs, which experience cliff falls can occur. Sediment linkage tend to be confined to the coast which, due to the significant loss of At Kingsand and risk of flooding at maintaining and enclose these beach squares would if areas were defen

South Devon & Dorset Shoreline Management Plan Review

South Devon and Dorset Coastal Advisory Group
 www.sdadcag.org

Summary

Teignbridge DISTRICT COUNCIL SOUTH DEVON

ENVIRONMENT AGENCY

Beach Management Plan

Authority Scheme Reference

AIMS Asset Number

Promoting Authority

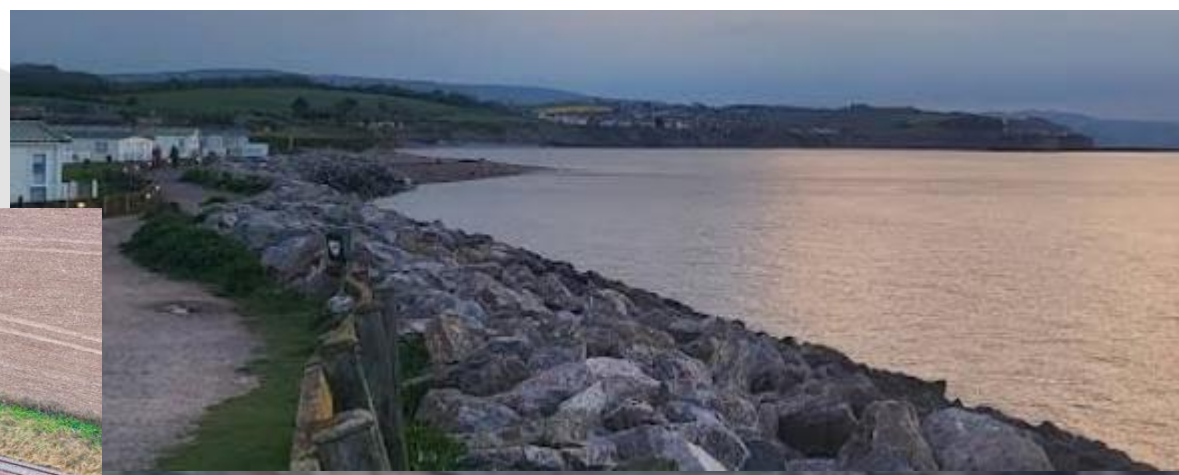
Scheme Name

Looking south-west from Overcombe Corner along Preston Beach on 2nd October 2020 (courtesy A. Frampton)

Date

Version

Doniford



Watchet

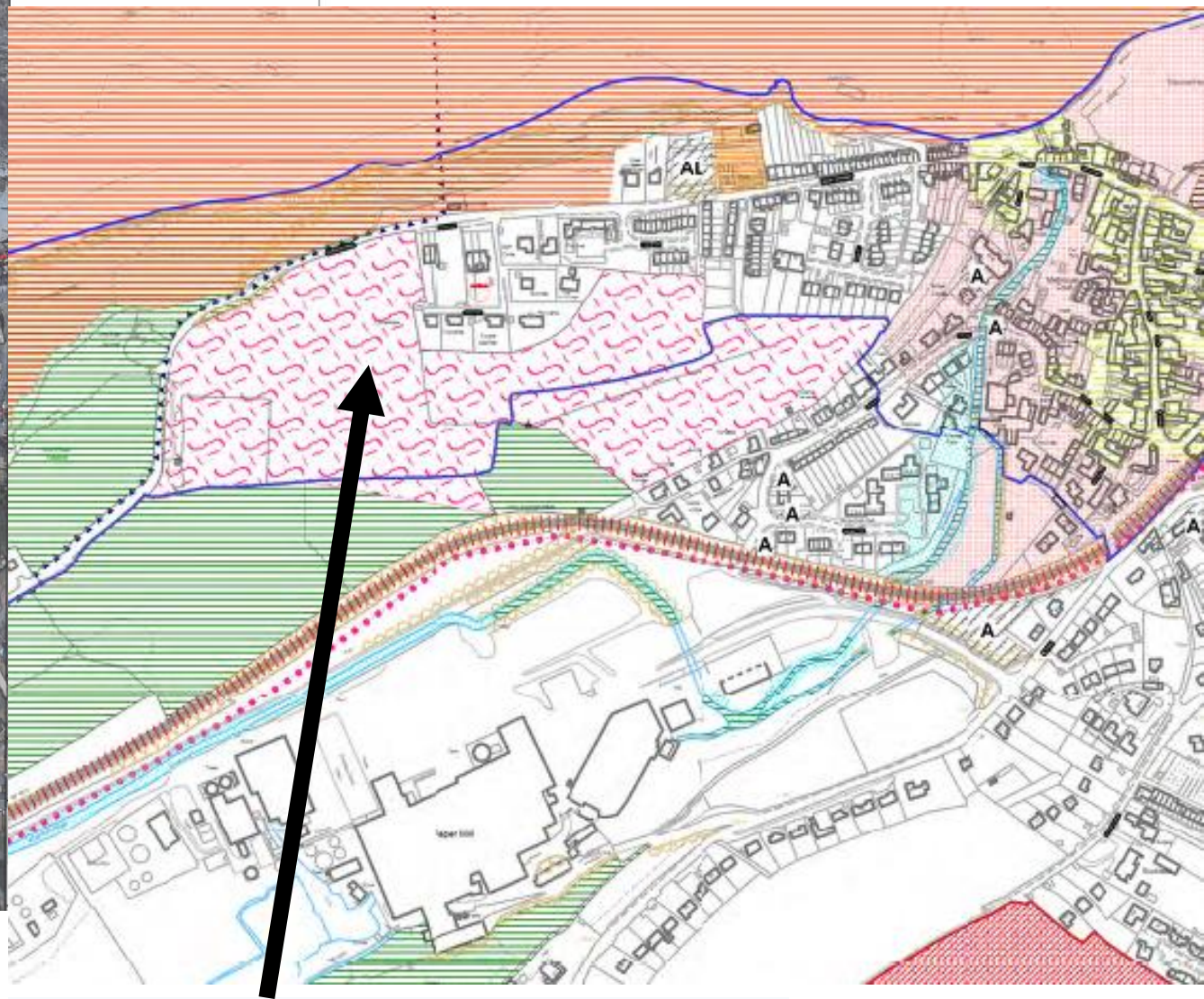








2120 Middle-Limit Cliff Top
2120 Upper-Limit Cliff Top
Coastal Unit Boundary



Long term Strategic Allocation (mixed use) Post 2026

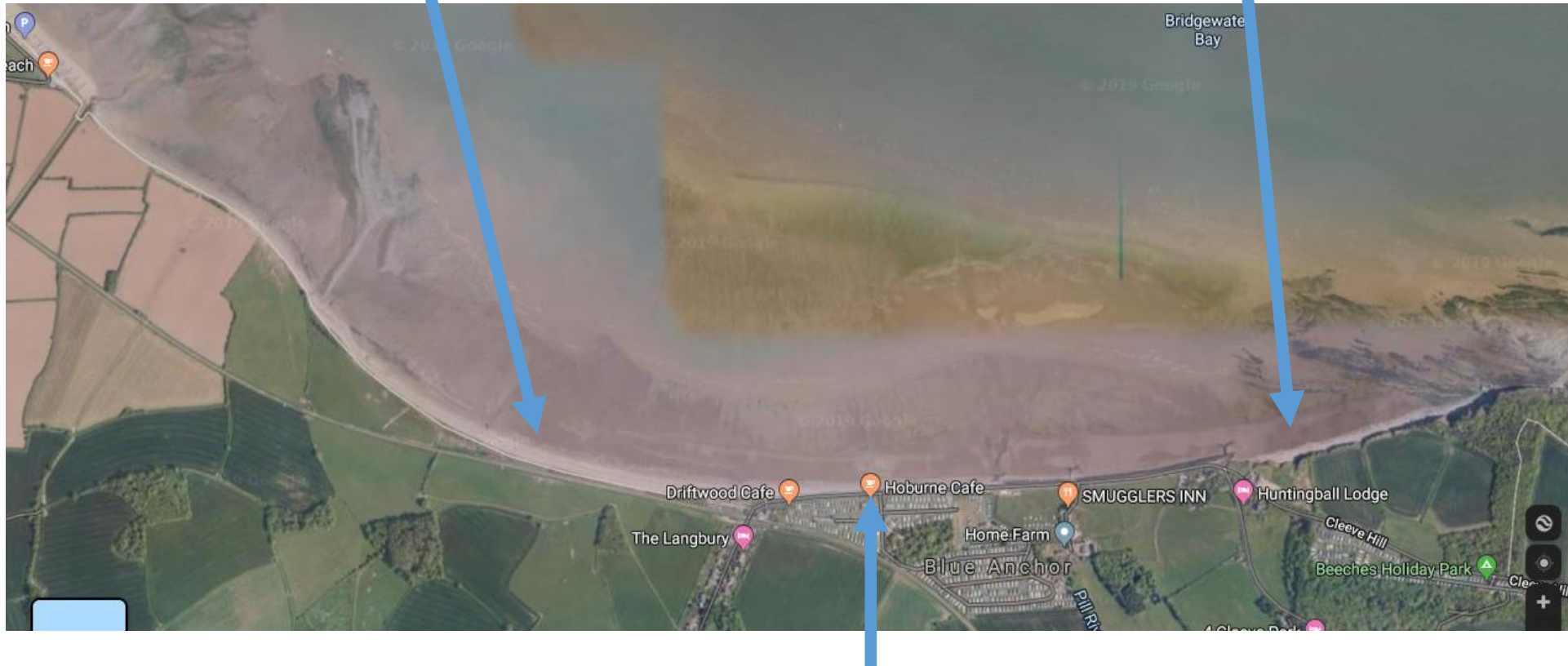


THE tide breaks over the seafront at Blue Anchor. The road soon flooded.

Blue Anchor

Coastline eroding back towards railway

Coastline eroding back into soft cliffs



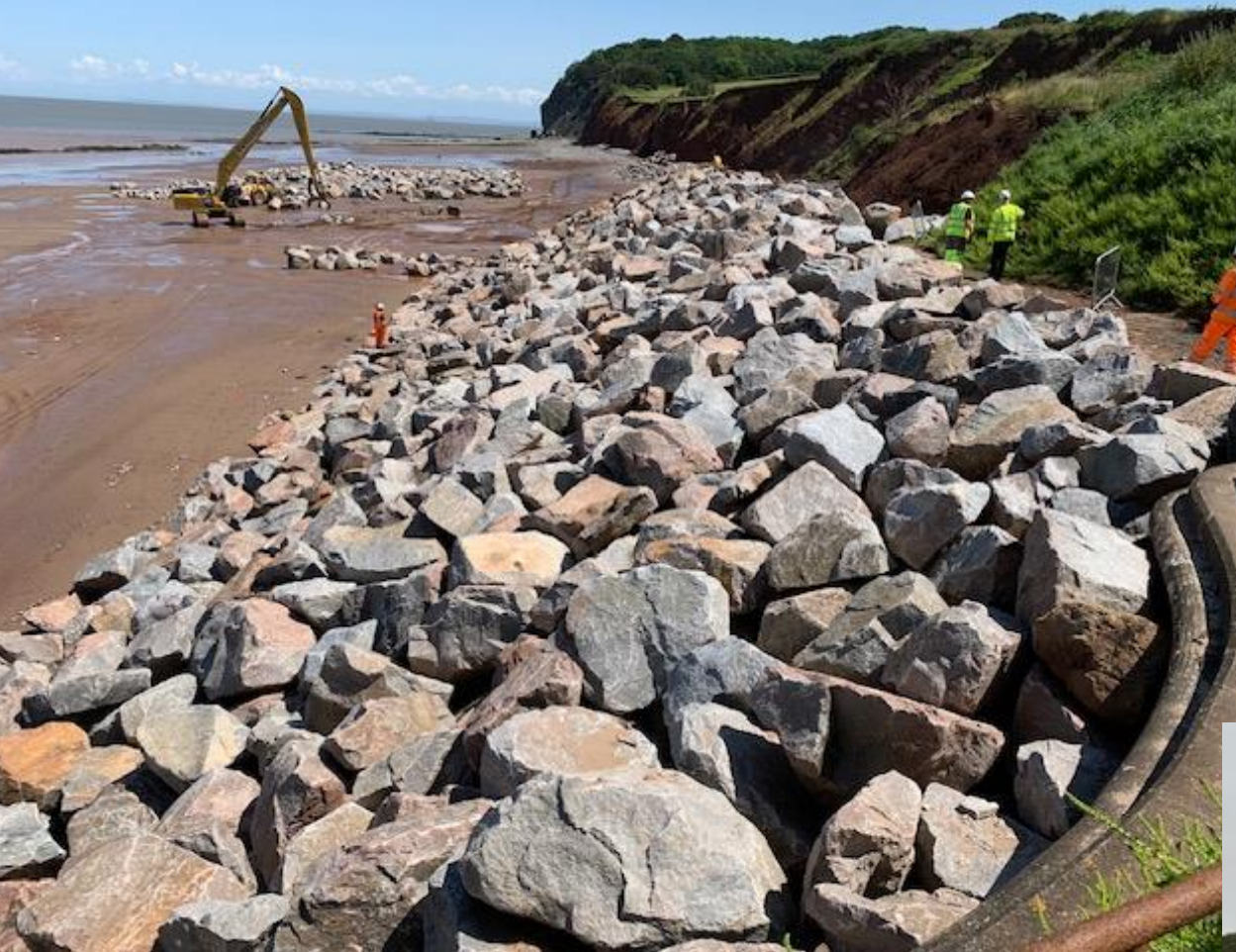
Highway Sea Wall – hard structure stopping roll-back of coastline and preventing evolution of natural bay



Coastal erosion, Blue Anchor, West Somerset



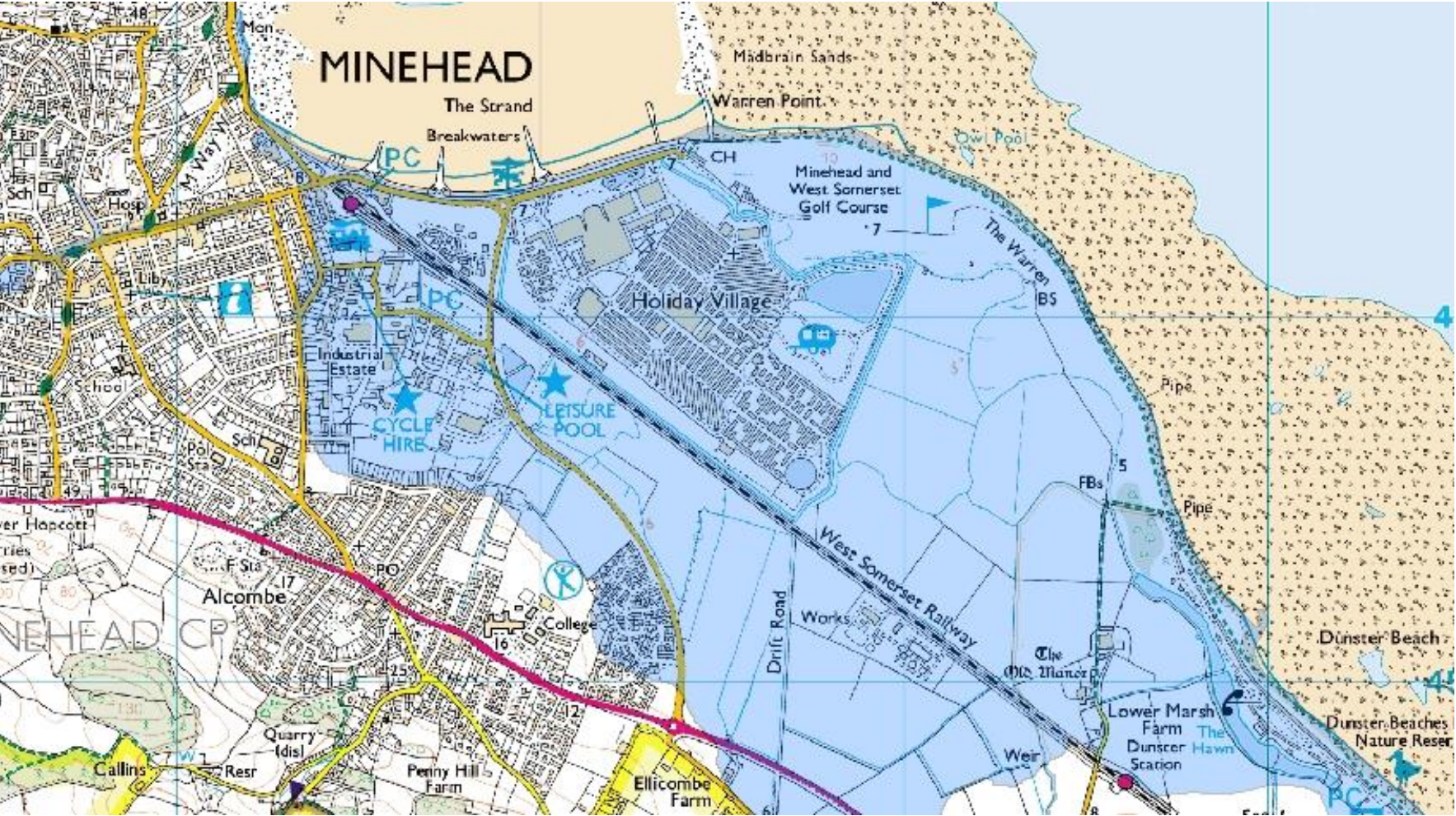




Dunster Beach



Tidal flood Zone 3 – 634 properties + Butlins, W Somerset Railway etc





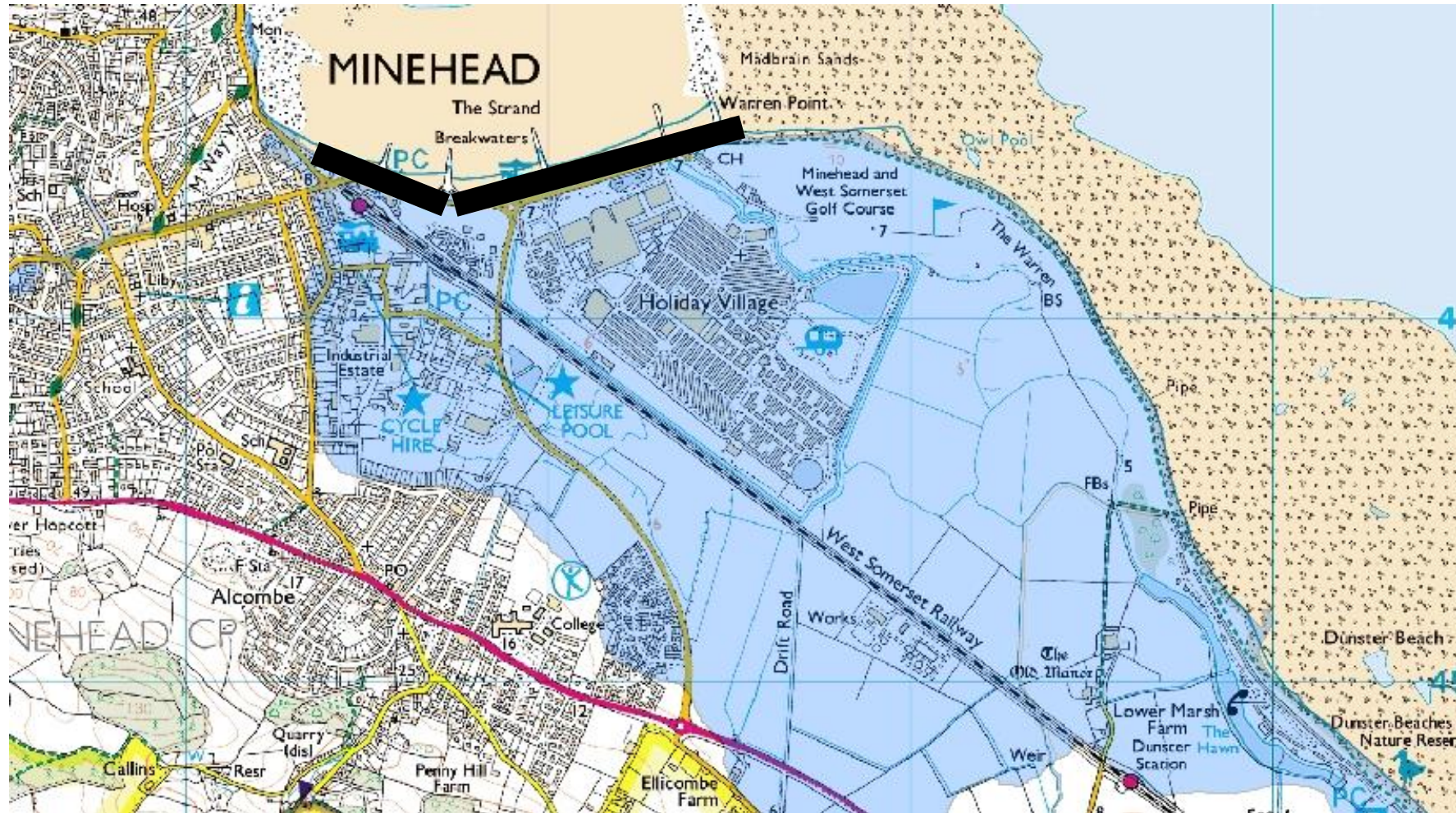
SHINGLE covers the road outside Minehead's Golf Club as the beach moved landwards.



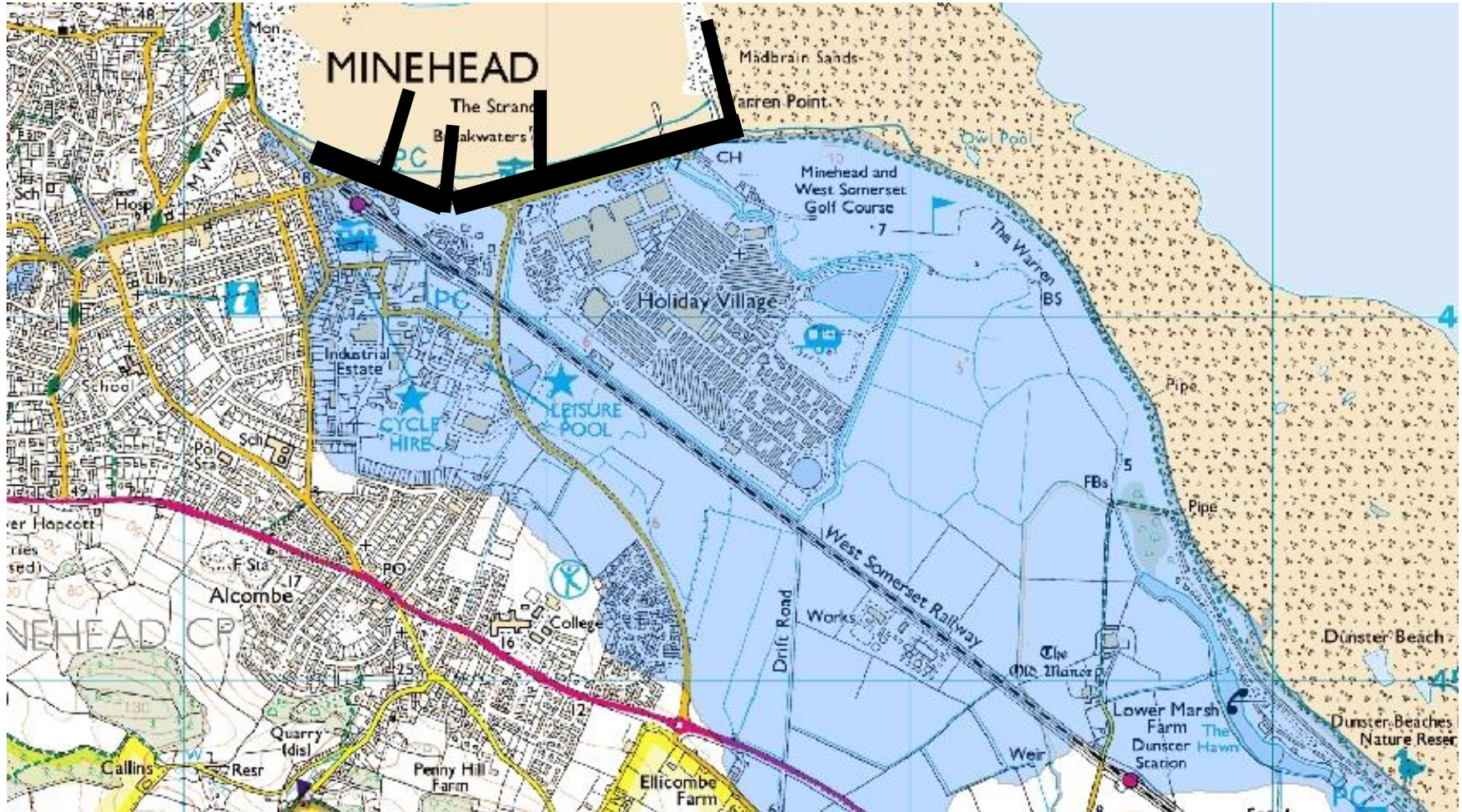
DUCKS, not birdies, are the order of the day at the 18th hole on the golf course at Minehead.

'Force of water smashed through everything'

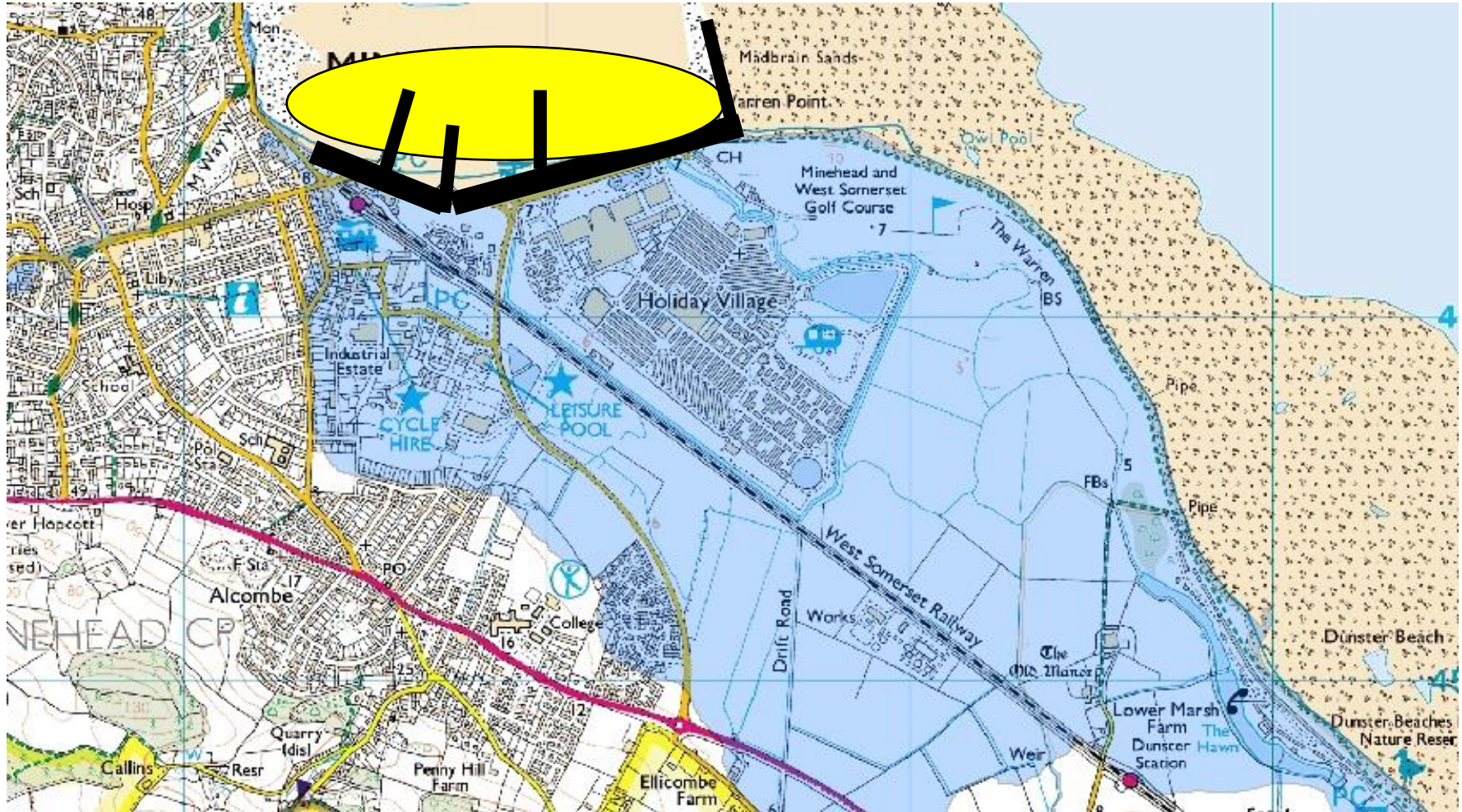
1997 Scheme – Wave Return Wall



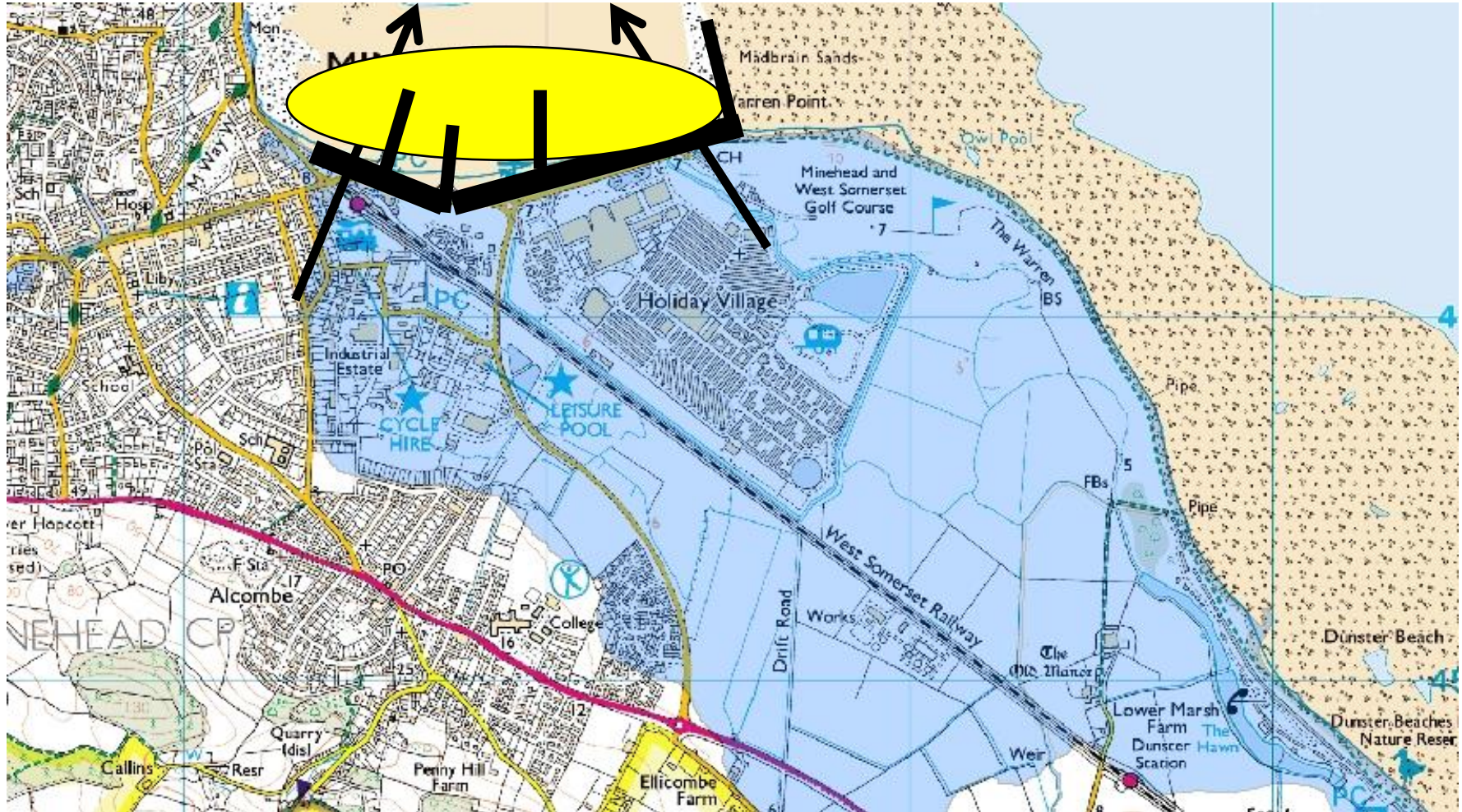
1997 Scheme - Groynes



1997 Scheme – Beach Recharge

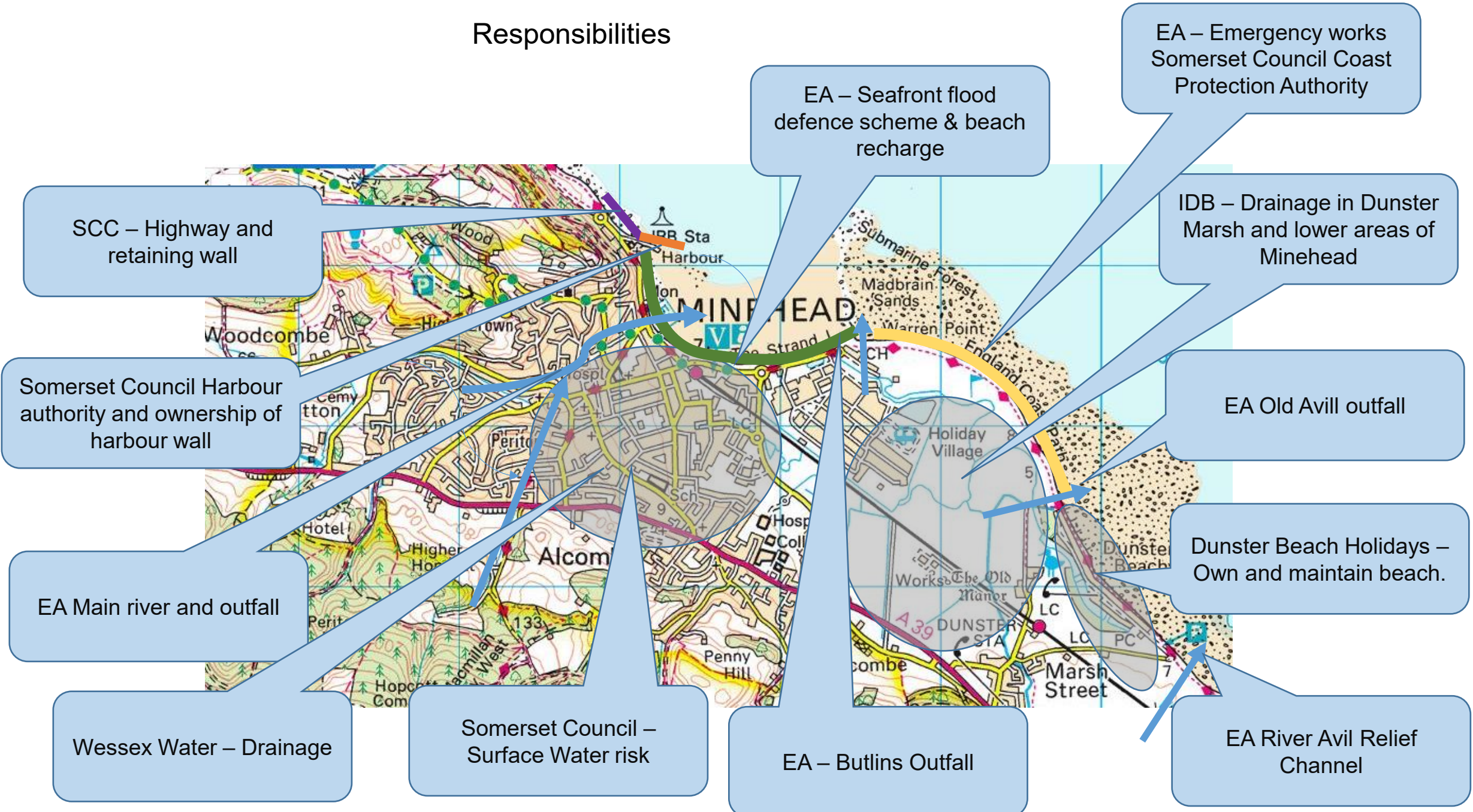


1997 Scheme - Outfalls





Responsibilities



EA – Emergency works
Somerset Council Coast
Protection Authority

IDB – Drainage in Dunster
Marsh and lower areas of
Minehead

EA – Seafront flood
defence scheme & beach
recharge

EA Old Avill outfall

Dunster Beach Holidays –
Own and maintain beach.

EA River Avil Relief
Channel

EA – Butlins Outfall

Somerset Council –
Surface Water risk

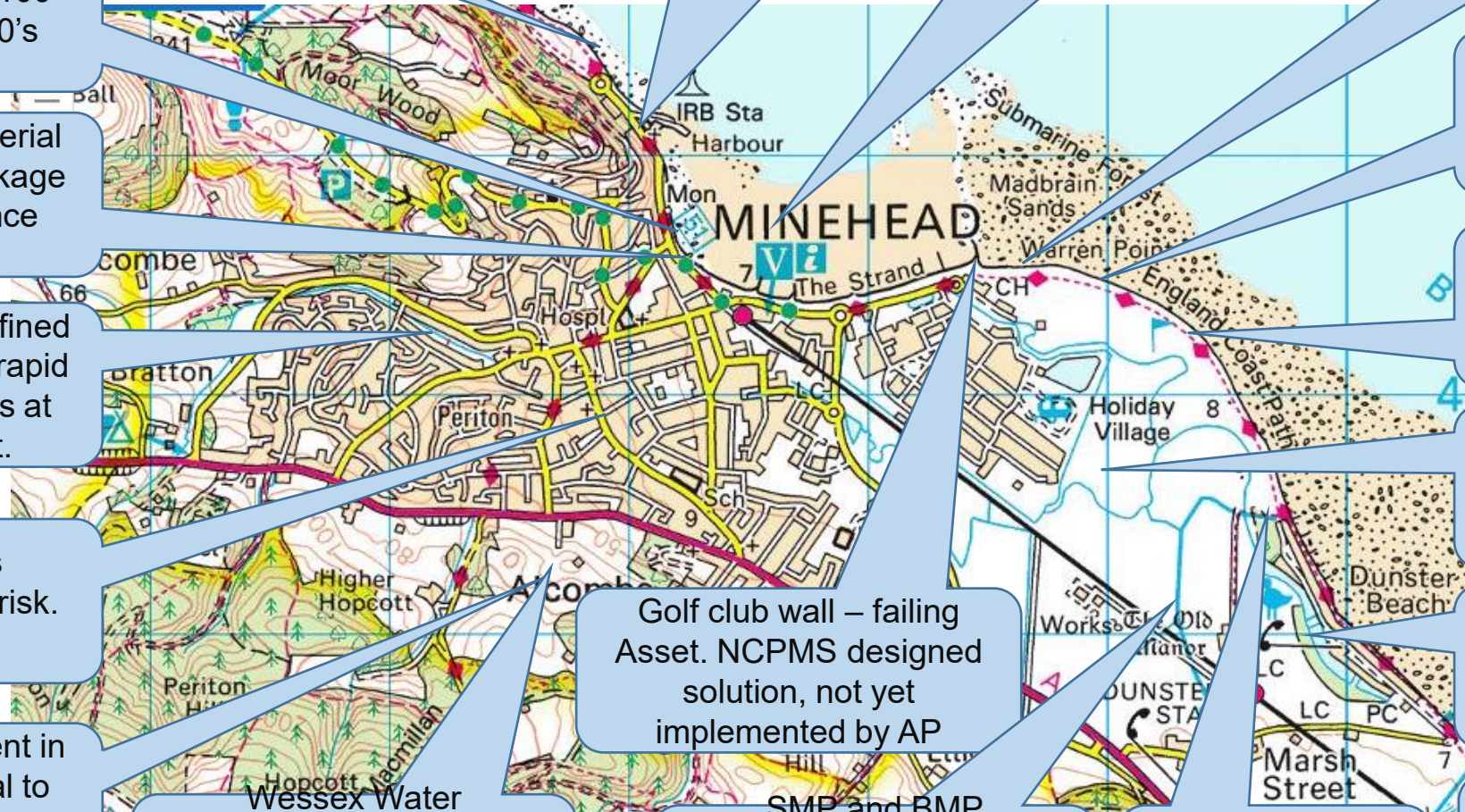
Wessex Water – Drainage

EA Main river and outfall

Somerset Council Harbour
authority and ownership of
harbour wall

SCC – Highway and
retaining wall

FCRM Issues



Erosion of beach material exposes toe of wall risking loss of road.

Seafront scheme 1:100 when built in mid 90's

Accumulation of material around outfall – blockage risk and maintenance issue

Main river – very confined channel. Steep and rapid response. Properties at risk. Models exist.

SWMP identifies substantial areas at risk. Needs updating

Allocated development in local plan – potential to impact on risk lower in catchment.

Low spot on road risks outflanking of defences. TDDP in place.

Beach requires recharge twice a year. Changes recommended in BMP not yet implemented by AP

Emergency works carried out in 2012

Erosion threatening footpath and defence integrity. BMP recommends localised rock armour – funding?

Defence is natural relic dune system. Not on AIMS as FCRM asset, therefore no funding

IDB area provides drainage for Minehead town and flood storage

Dunster Beach Holidays. 250 chalets. Private defences maintained and improved. Sea level rise challenges.

Erosion affecting Avill outfall – replace? Move? Defend?

Wessex Water infrastructure inadequate for development. Modelling funded by SRA in progress.

Golf club wall – failing Asset. NCPMS designed solution, not yet implemented by AP

SMP and BMP recommend construction of setback defences. Where? Funding? Existing line?

Old Avil Outfall – EA Asset, What is future plan

Emergency works 2011

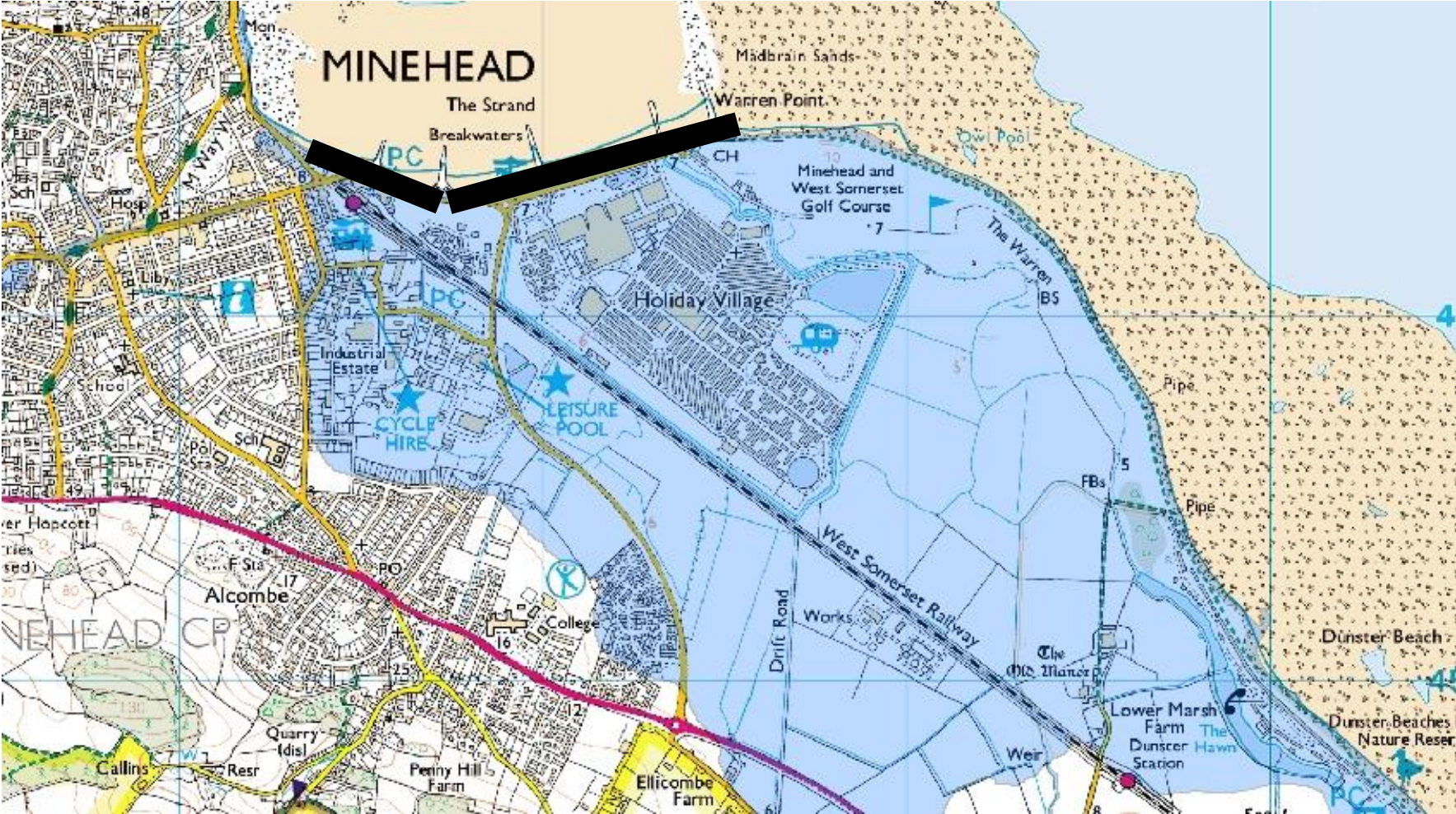


Minehead Emergency Works 2023

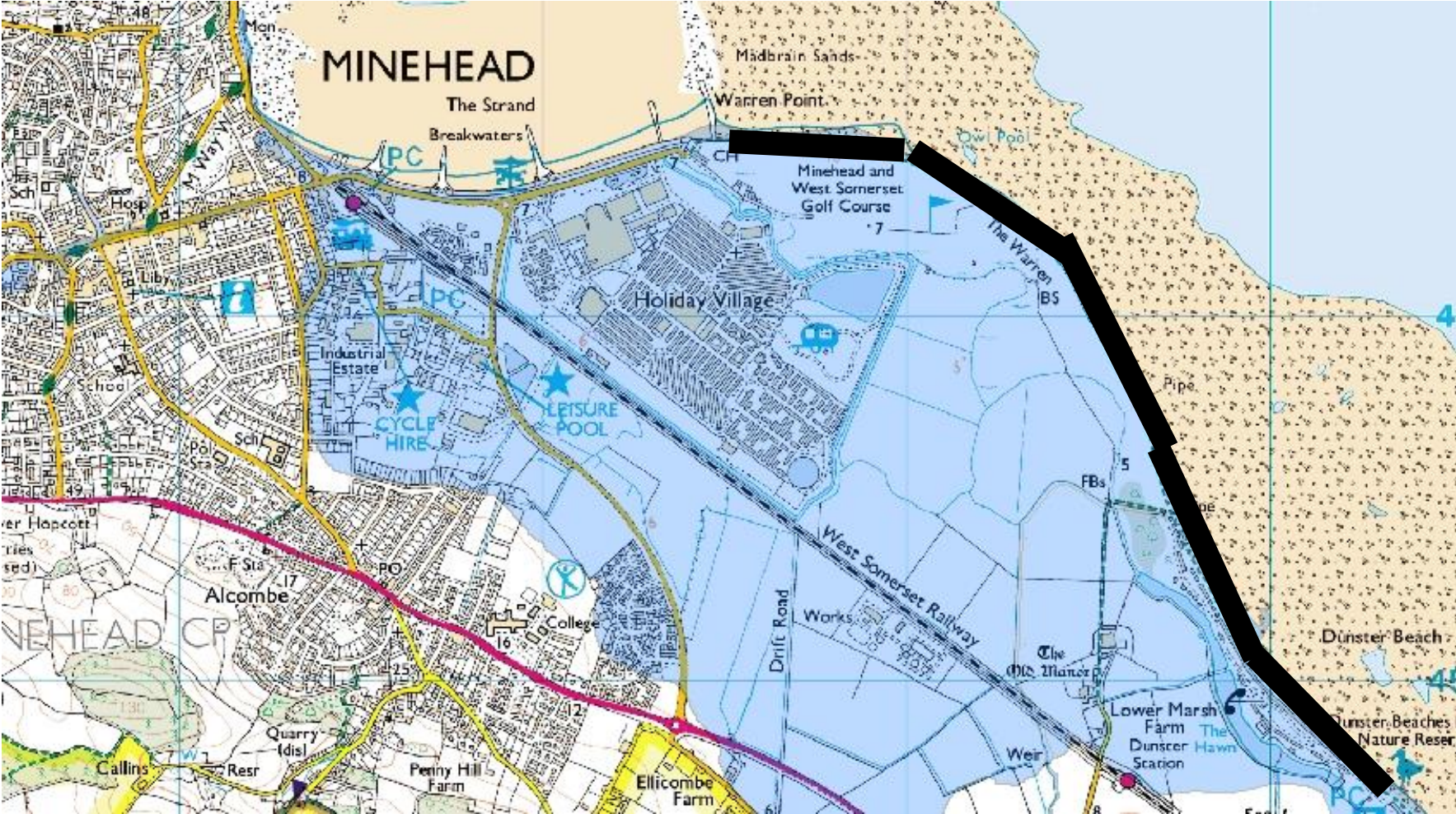




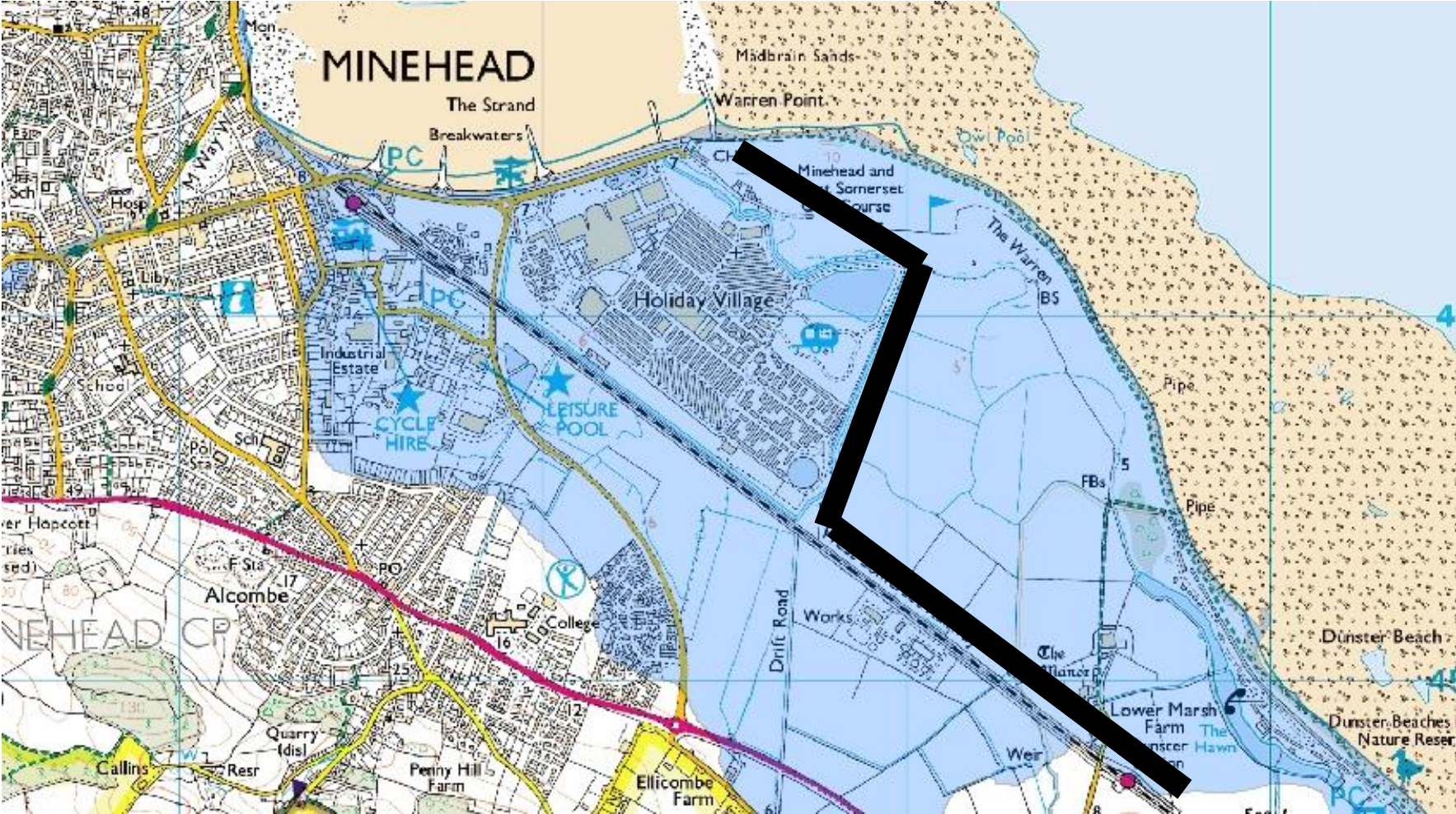
2115 – What would you do?



2115 – What would you do?



2115 – What would you do?



Somerset: Unprotected by Sea Defences

