

Managing Flood and Coastal Erosion Risk in the Severn Estuary

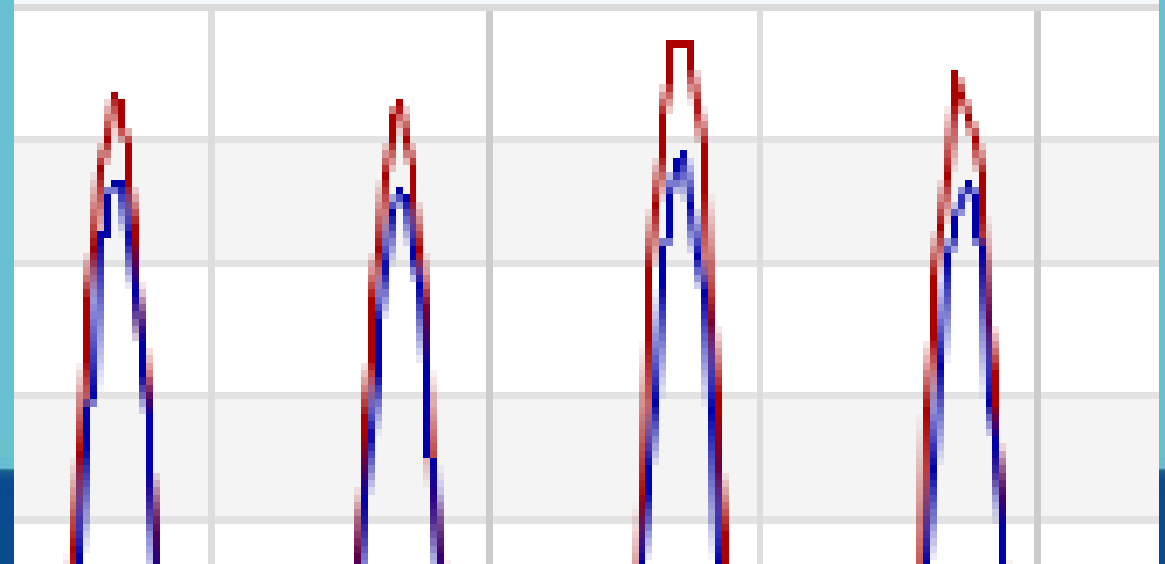
John Buttivant

Coastal Engineer – Environment Agency

Chair – Severn Estuary Coastal Group



Severn Bridge Tide



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Minehead

Waves Wave Spectra 1Hz Data Latest Information Statis

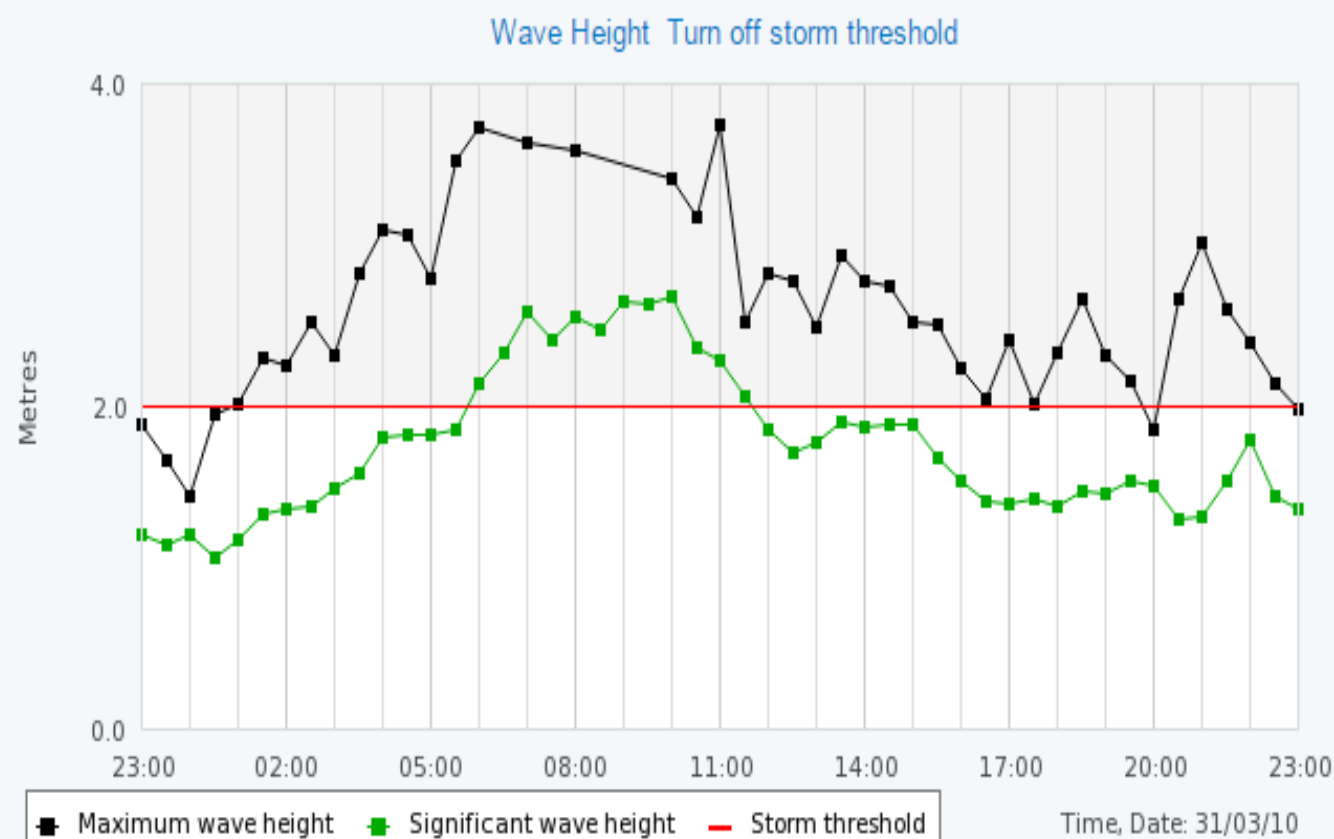
Display to date: Prev Range

Go Day ▾

Latest Waves Data:

Time (GMT)	Latitude	Longitude	Wave Height (m)	Max Wave Height (m)	Tpeak (s)	Tz (s)	Mean
14-05-2015 11:00	51.22698	-3.46801	0.36	0.72	3.9	2.9	

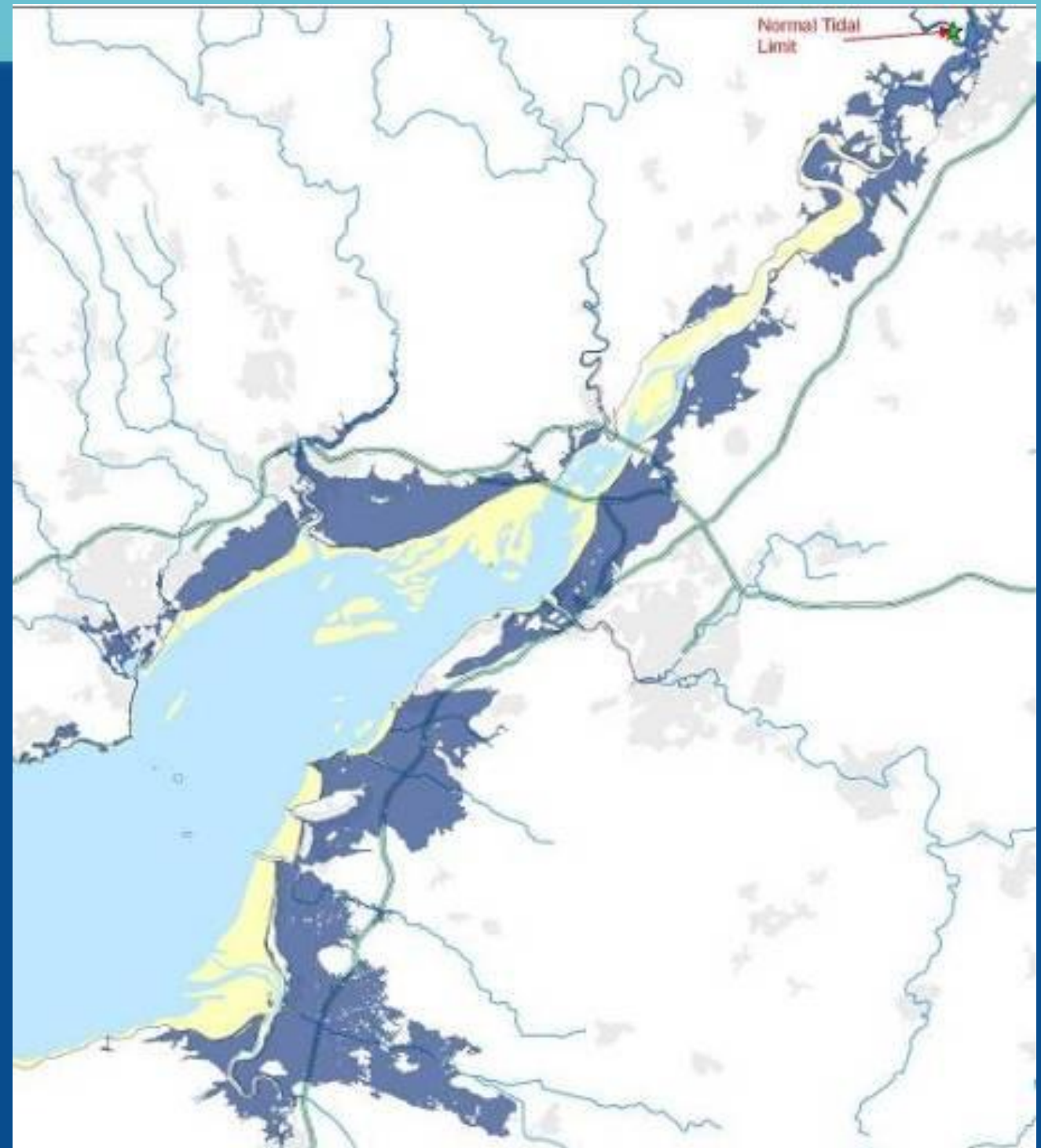
Date	Highest Hs 2015
30-01	2.7m

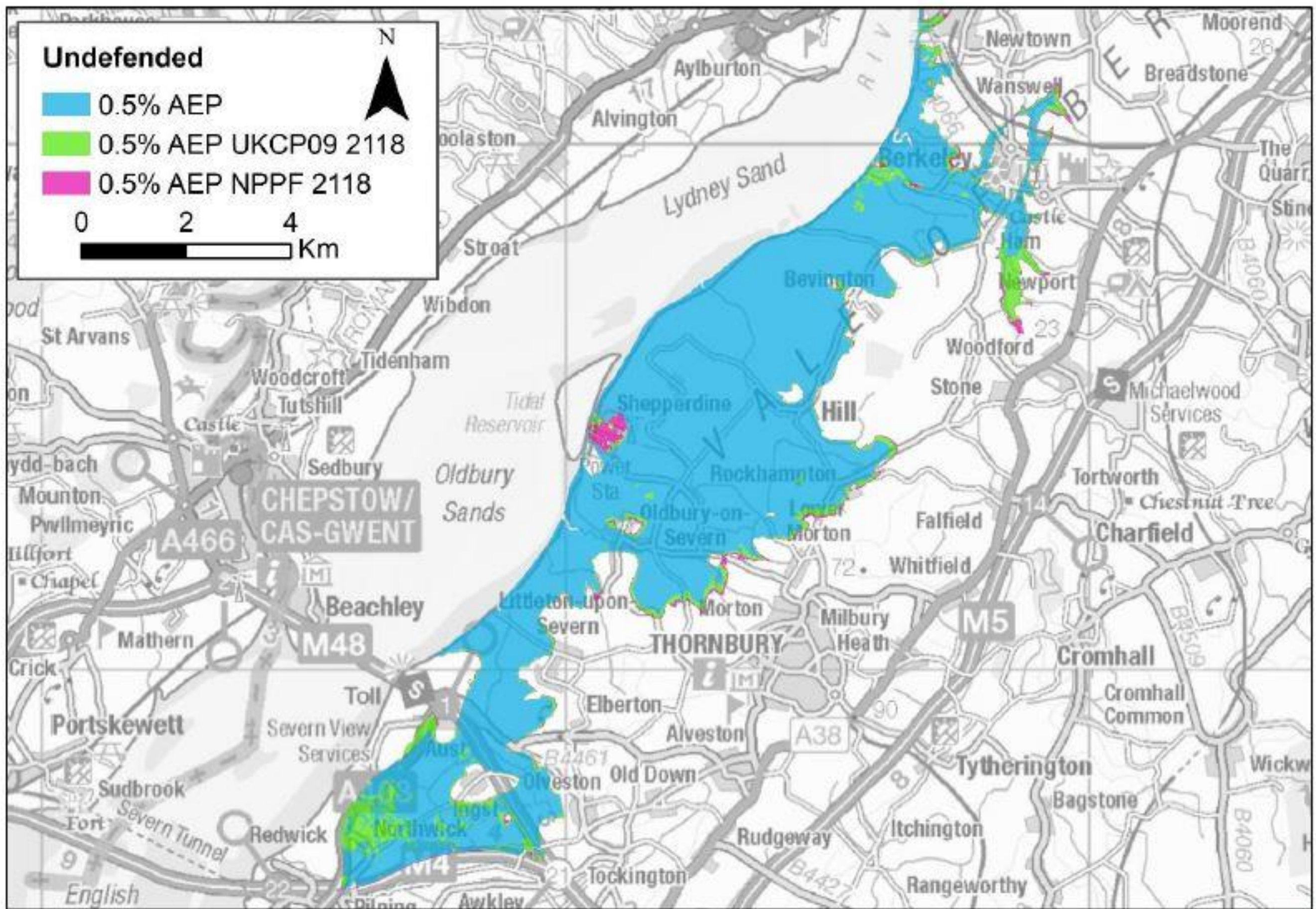


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Current Situation

**Tidal Floodplain
without sea level rise**







Legend

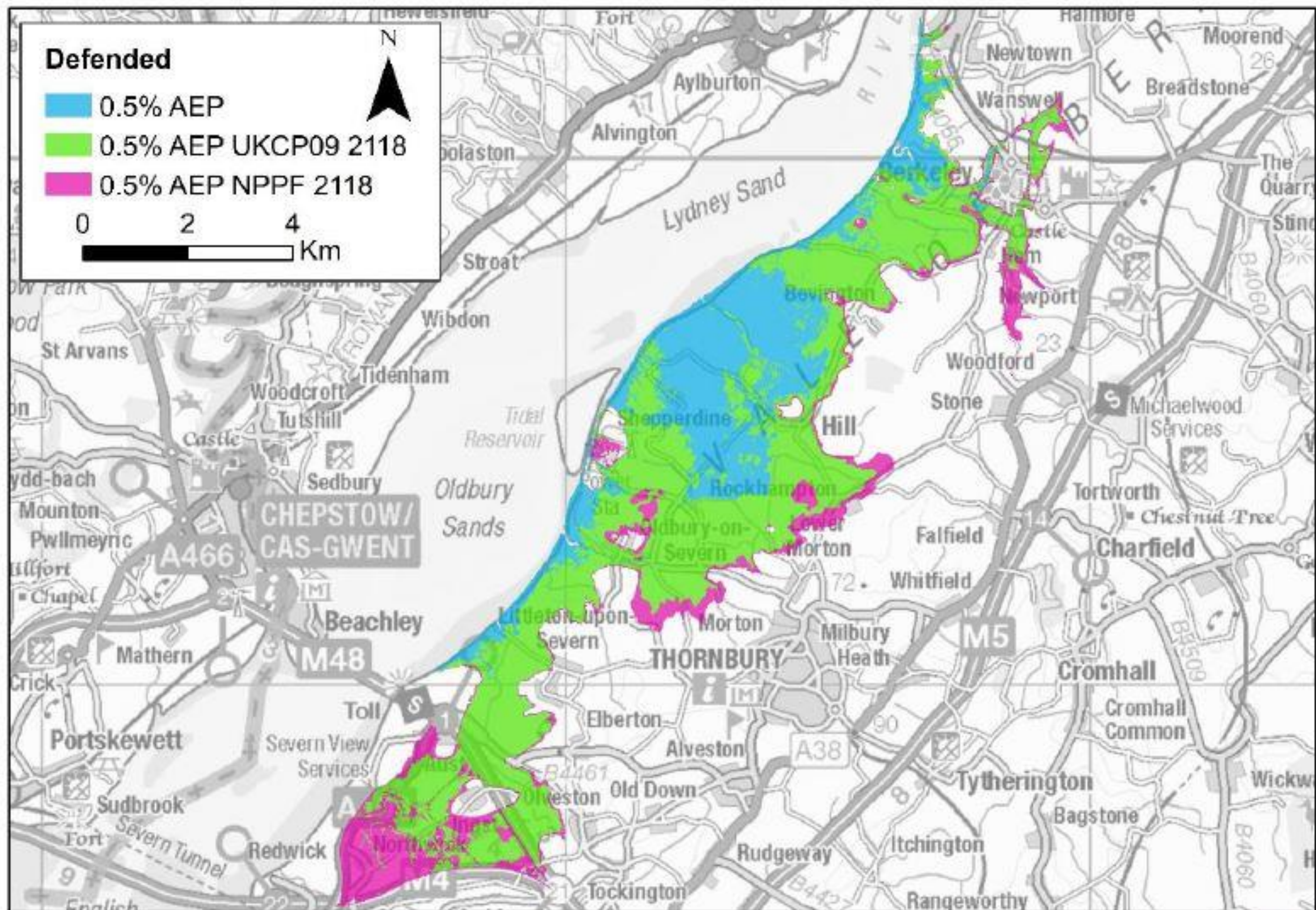
 Defence (Man-Made)

Flood Zone 2 (1000yr)

TYPE

 Fluvial / Tidal

 Tidal



Coastal Defence Planning

SMP

Identifies general policies and implementation requirements



Coastal Defence Strategy

Identifies nature and type of work to be undertaken



Scheme

Design, construction and maintenance of defences



What does it mean in practice?



Shoreline Management Plan (SMP)

- Identifies Policies to Manage Coastal Erosion and Flood Risk
- Evidence based decisions considering coastal processes and economic justification
- Sustainable defences
- Natural environment
- Built environment
- Comply with Legislation

www.defra.gov.uk

Shoreline management plan guidance
Volume 1: Aims and requirements

March 2006



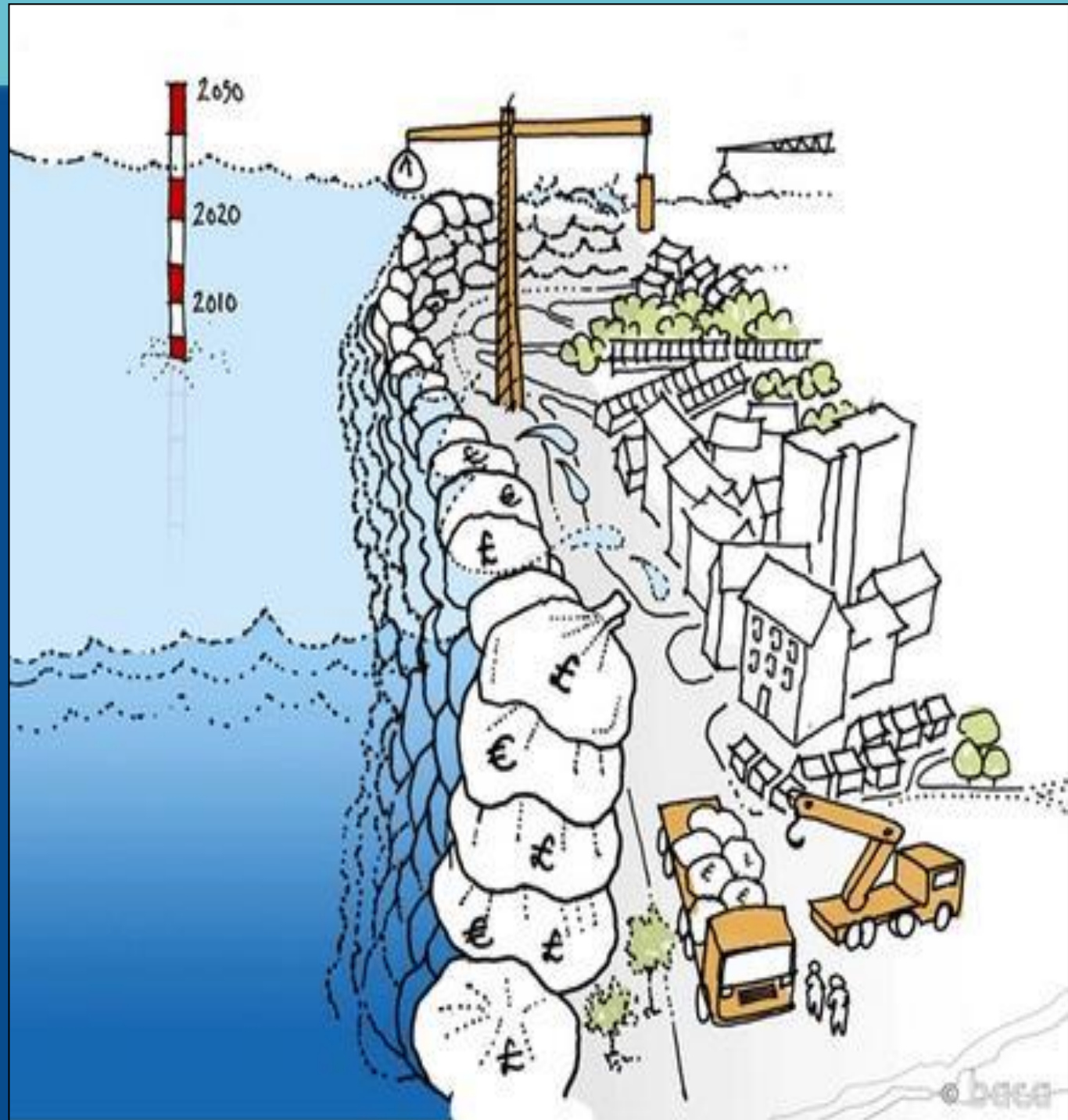
Policy options available

1. Hold the existing defence line
 2. Advance the existing defence line
 3. Managed realignment
 4. No active intervention
- 0 – 20 years
 - 20 – 50 years
 - 50 – 100 years



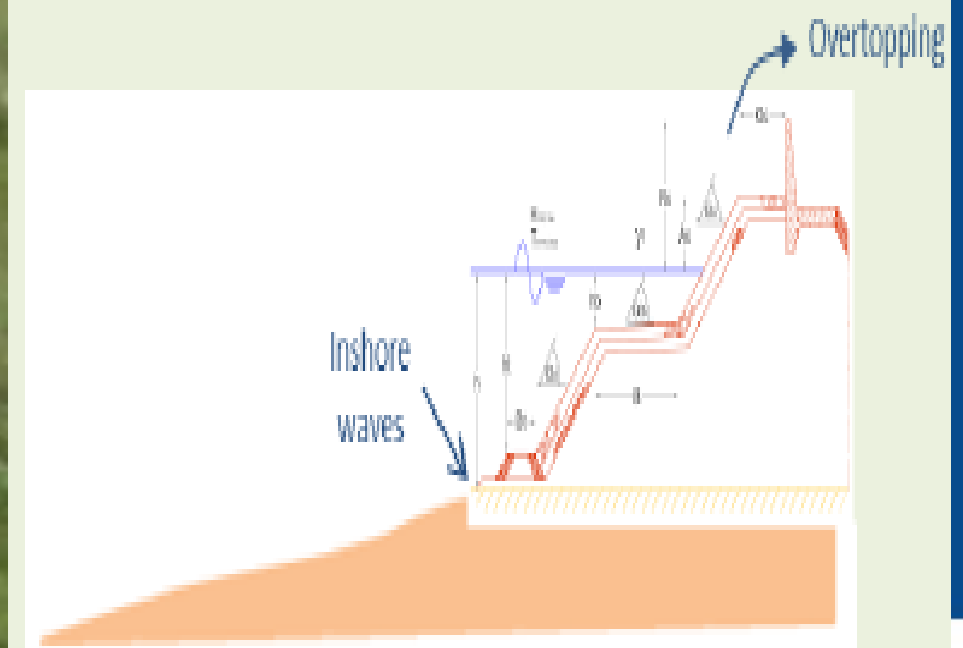
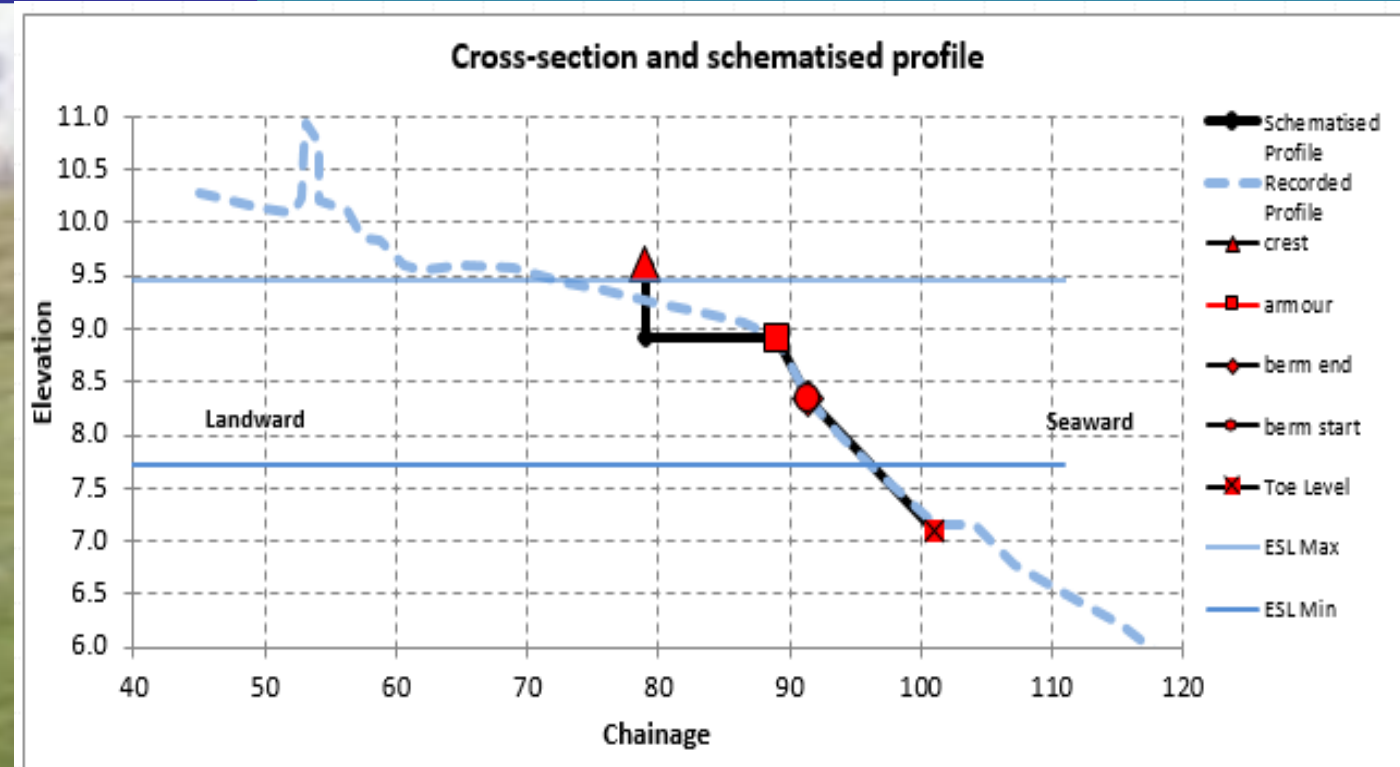
A few considerations...

- Natural Environment
- Natural Processes
- Limited Funding
- Costs/Benefits for National Prioritisation
- Community requirements
- Local Businesses
- External funding
- Adaptation



IS THIS THE ONLY SOLUTION?

Maintenance, inspection and monitoring





Environment
Agency

Woodlands Outfall

Easimap2 Incidents

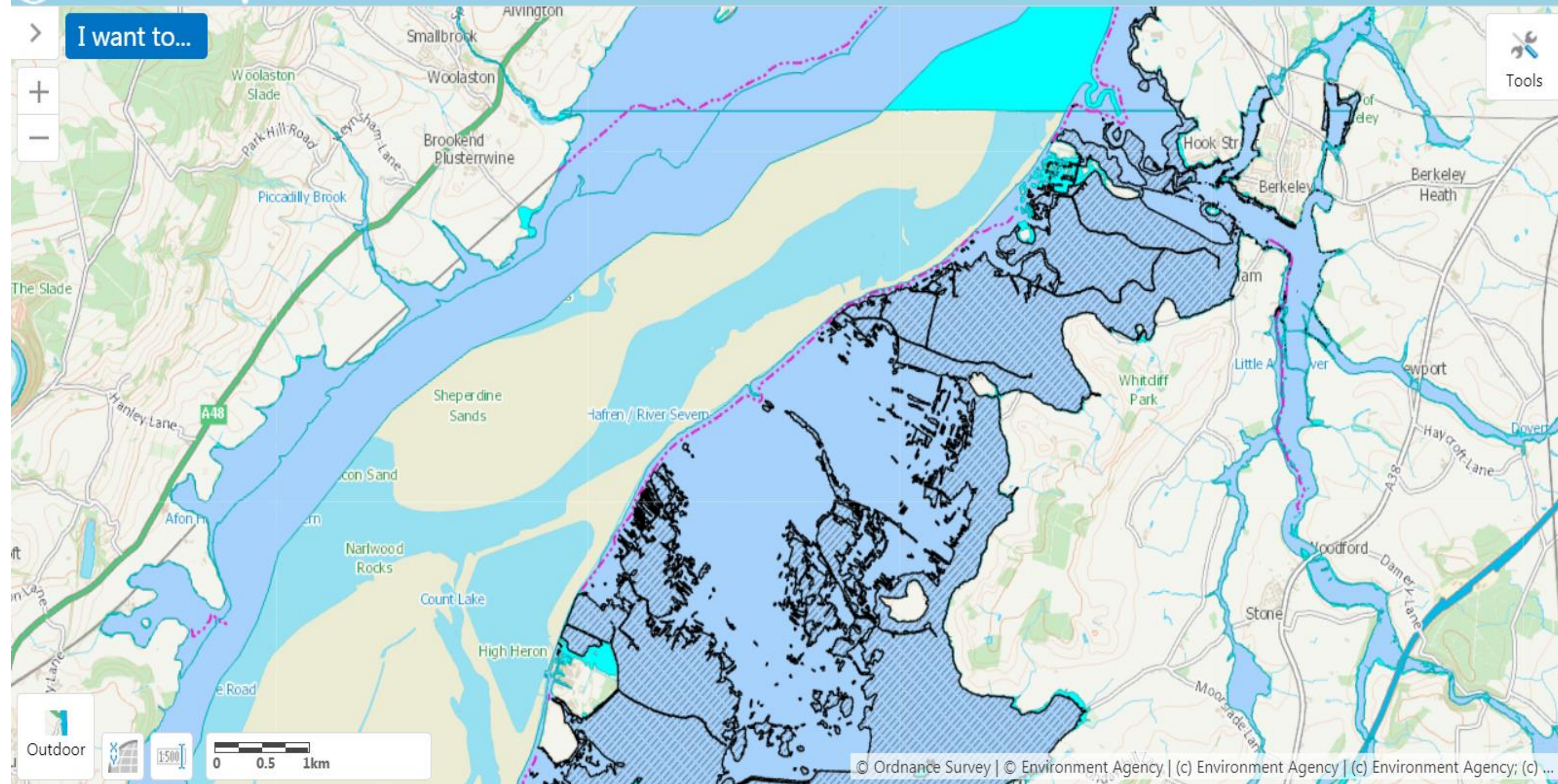
Search...



I want to...



Tools



Outdoor



1:500

0 0.5 1km

© Ordnance Survey | © Environment Agency | (c) Environment Agency | (c) Environment Agency; (c) ...

Problem and Solution...



Fig 6 Woodlands tidal outfall on Thurs 2 Sept 2021 – left photo headwall now disintegrating and right photo blocked cul



Fig 8 Woodlands tidal outfall – emergency works

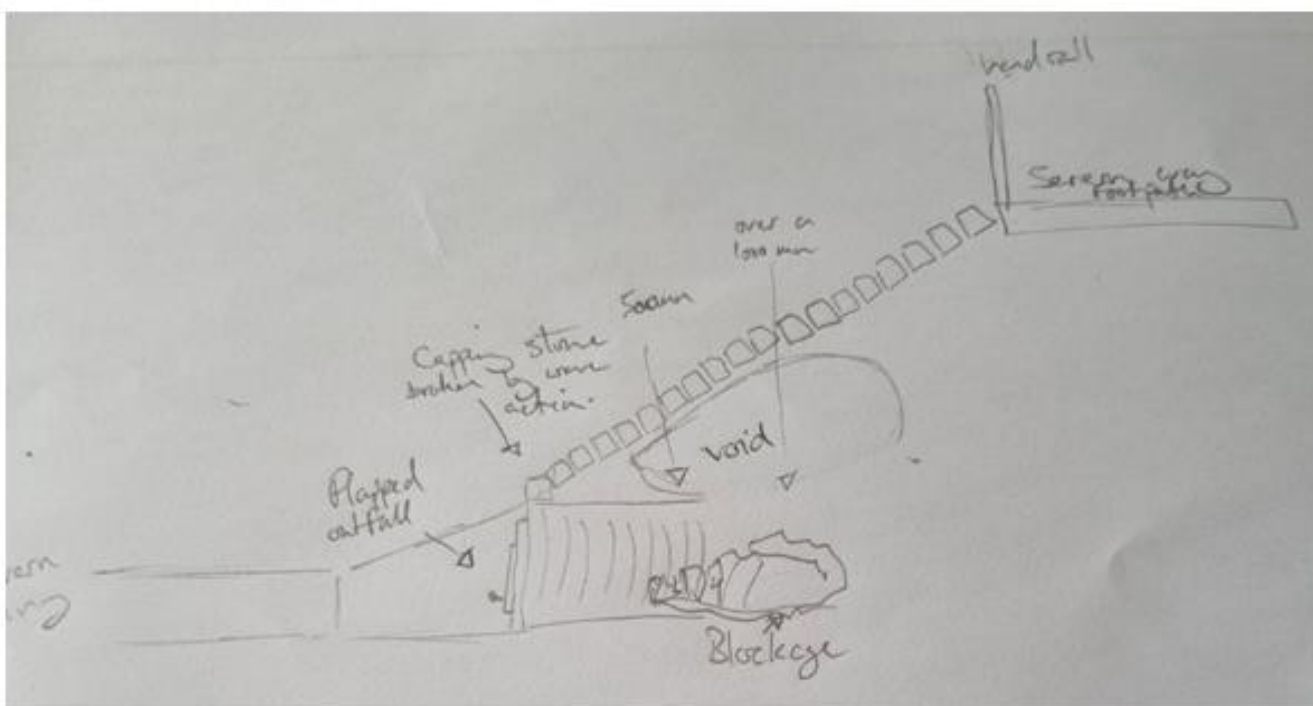
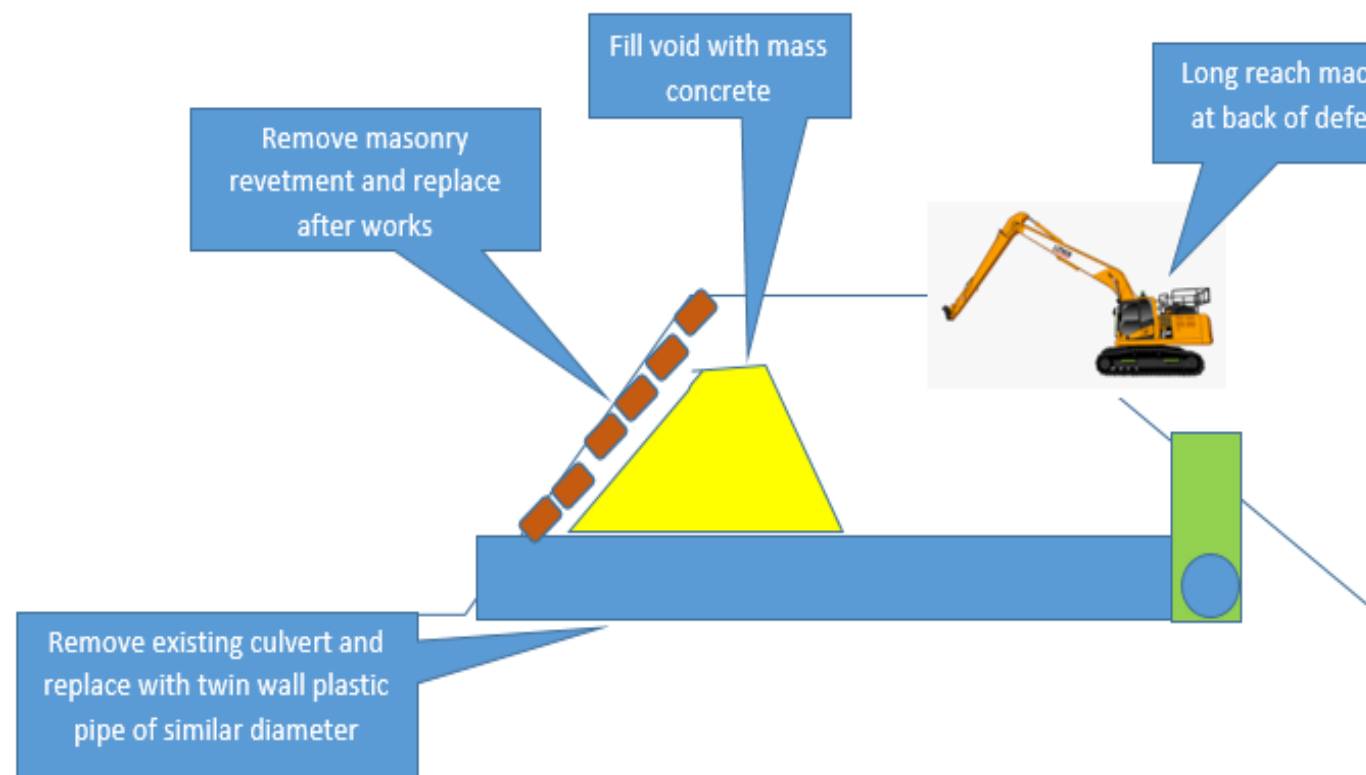


Fig 7 Woodlands tidal outfall on Thurs 2 Sept 2021 – section through outfall with suggested void under revetment

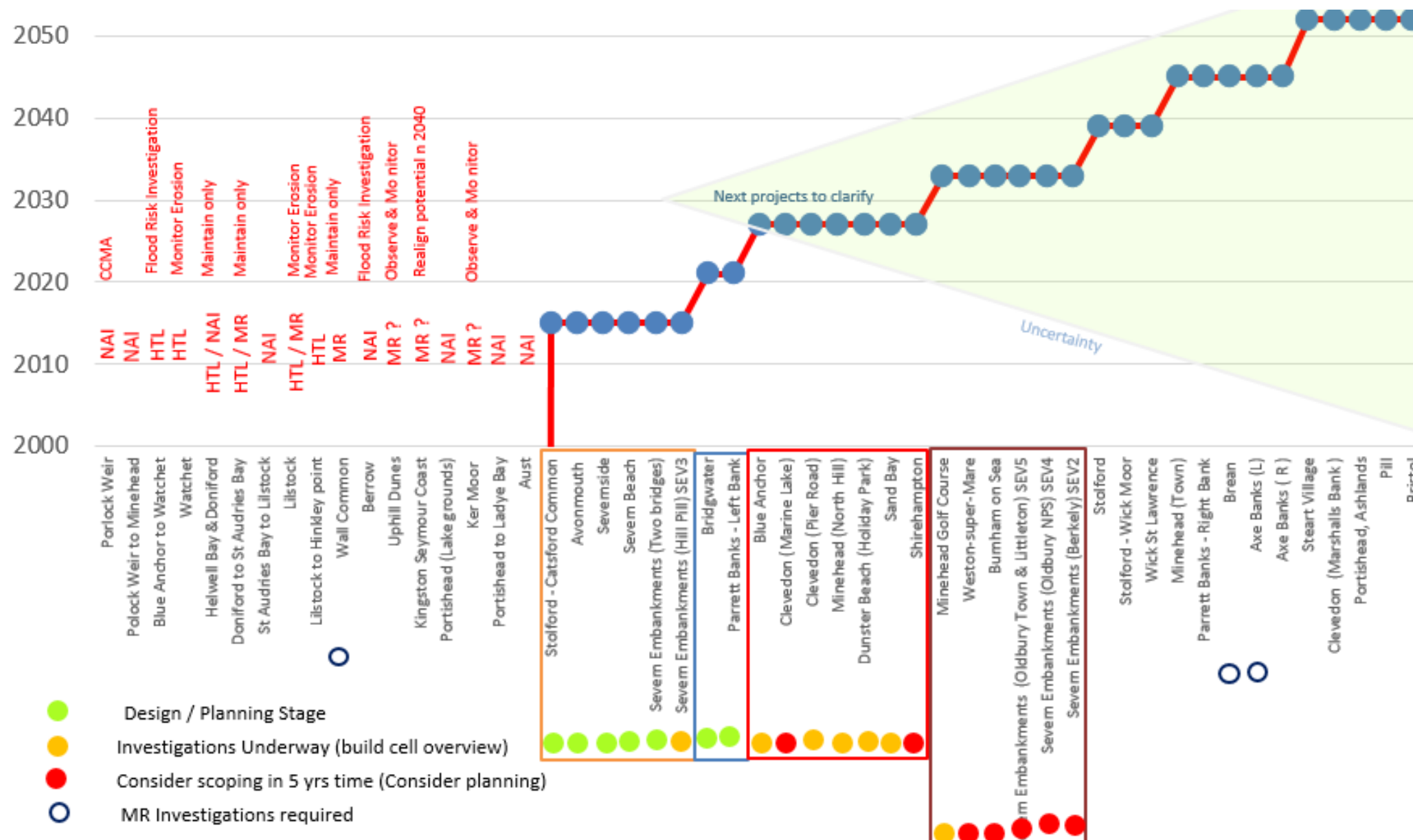


Capital Schemes

- Evidence
- Risk
- Benefits
- Funding
- Design
- Costs
- Approvals



Coastal Strategy – Severn Estuary



Any Questions?

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