



IPReM

Greater Caribbean 2023

IDENTIFICATION | PROTECTION | RESTORATION | MANAGEMENT

JUNE 28th-30th, PANAMA

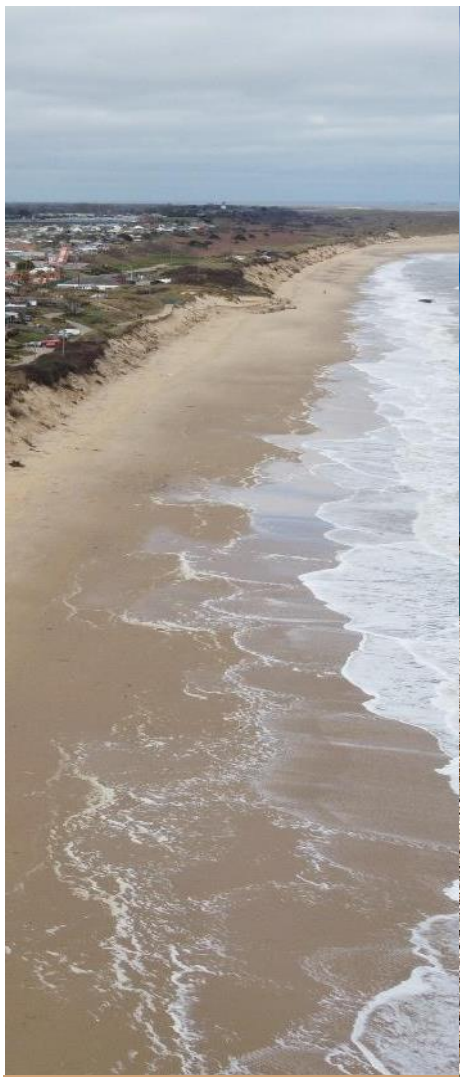
*Science and technology for sustainable beaches
in a climate change scenario*



Delivering more through adaptation in a changing climate: a UK perspective

*Samantha Box, Coastal
Partners*





Sand



Shingle



Cliffs



Rocky Coasts



Estuaries



Harbours

Urban

Heritage

Habitats

Beaches

Recreation

Commercial

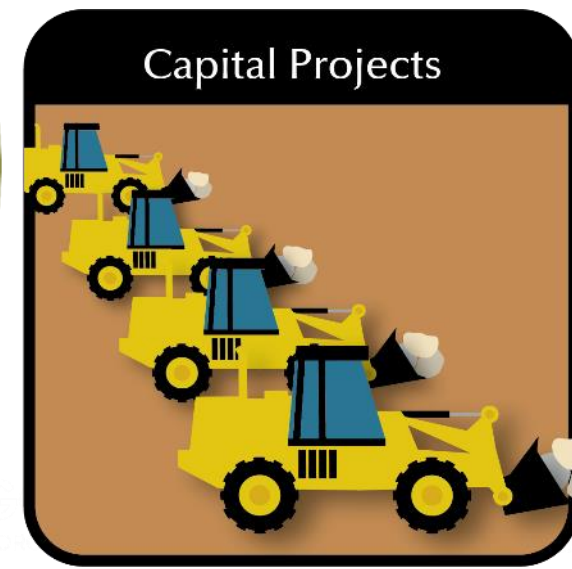
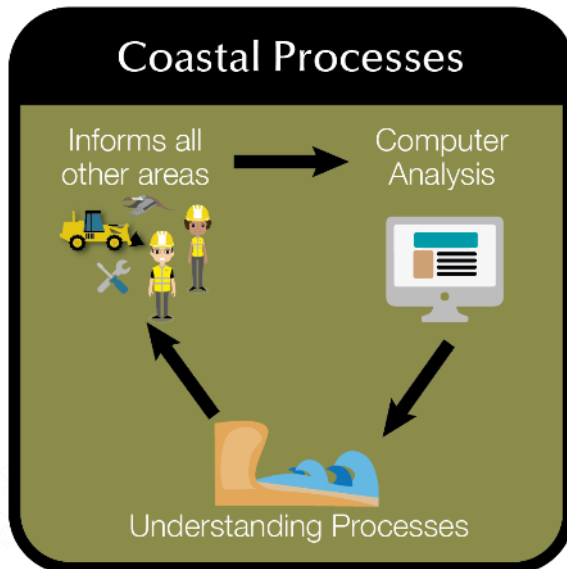
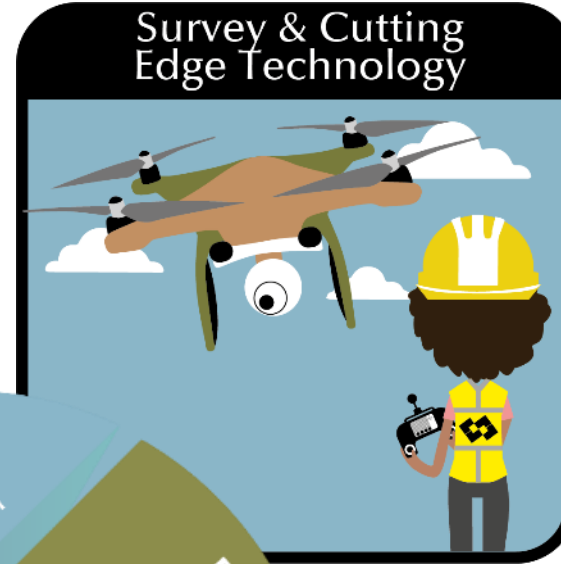
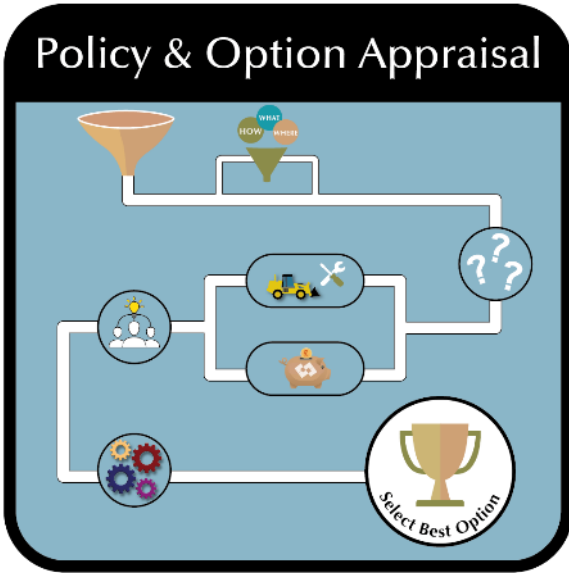
Coastal risks



In 2020 there are **5.2 million**
homes and businesses at risk of
FLOODING

Up to **1.15m**
SEA LEVEL RISE
by 2100

210,000 properties
In England at risk of being lost to
COASTAL EROSION
by 2080



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ICZM Roles and responsibilities in England



Department for Environment, Food and Rural Affairs

Overall responsibility for flood and coastal erosion risk management policy in England & provide main source of funding



The Environment Agency

Strategic Oversight Role and Risk Management Authority, has permissive powers to carry out works to protect against coastal flooding and erosion - not a legal obligation.



Risk Management Authorities

have permissive powers to carry out works to protect against coastal flooding and erosion - not a legal obligation.



Private landowners

are responsible for flood and erosion protection on their own land. Must act within statutory planning regulations and other applicable legislation.

ICZM Legislation and Policy

- Coast Protection Act (1949)
- Water Resources Act (1991)
- Land Drainage Act (1991)
- Environment Act (1995)
- Flood and Water Management Act (2010)
- Flood and Coastal Erosion Risk Management Policy Statement (2020)
- **National Flood and Coastal Erosion Risk management Strategy (2020)** - a nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100



Climate resilient places



Today's growth and infrastructure resilient to tomorrow's climate



A nation ready to respond and adapt to flooding and coastal change

Funding

- Flood and Coastal Erosion Risk Management (FCERM) **Grant in Aid (GiA)**
- Outcomes approach, bid based
- **Partnership Funding**
- **£5.2 billion** allocated between 2021 and 2027
- **No** funding from government is guaranteed

Between 2015 and 2021

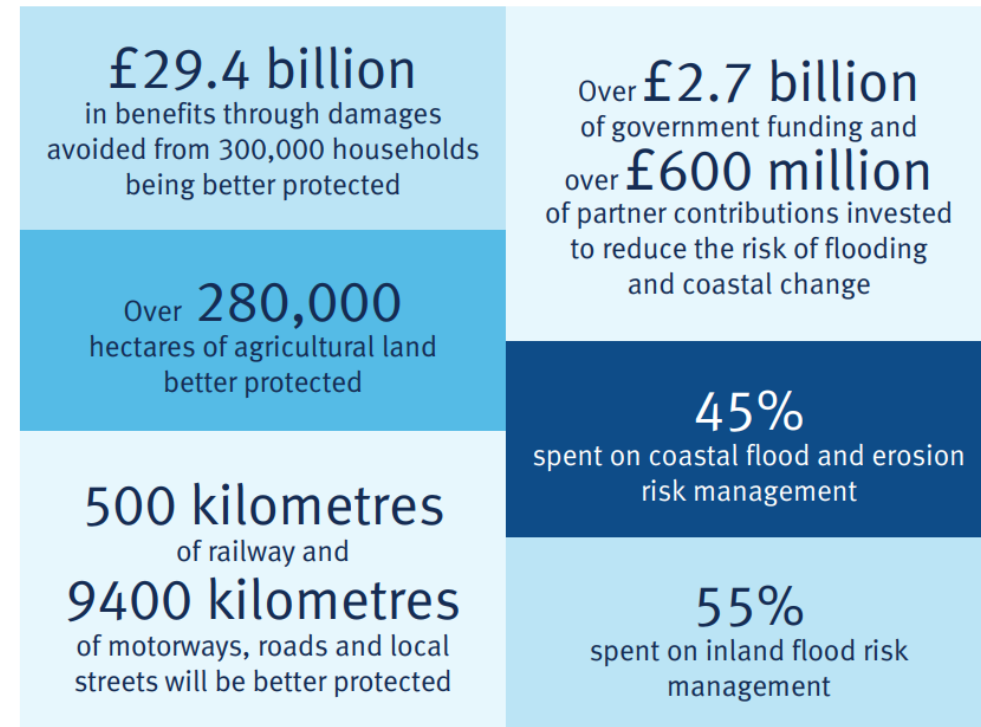


Figure 2: Existing activity to manage flooding and coastal change in England (Environment Agency, 2019).

Strategic Regional Coastal Monitoring Programmes

www.coastmonitoring.org

5,670 km of English coast monitored

North West Regional Monitoring

North East Coastal Observatory

CMAC WCMC

Anglian Coastal Monitoring

PLYMOUTH COASTAL OBSERVATORY

Channel Coastal Observatory

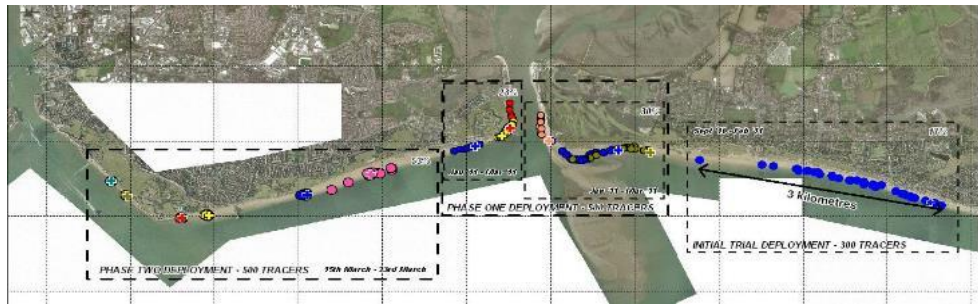
Data is available free to all users

Risk based approach

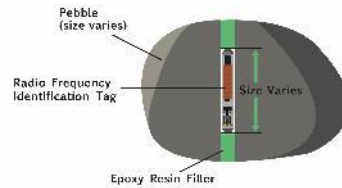


Consistency

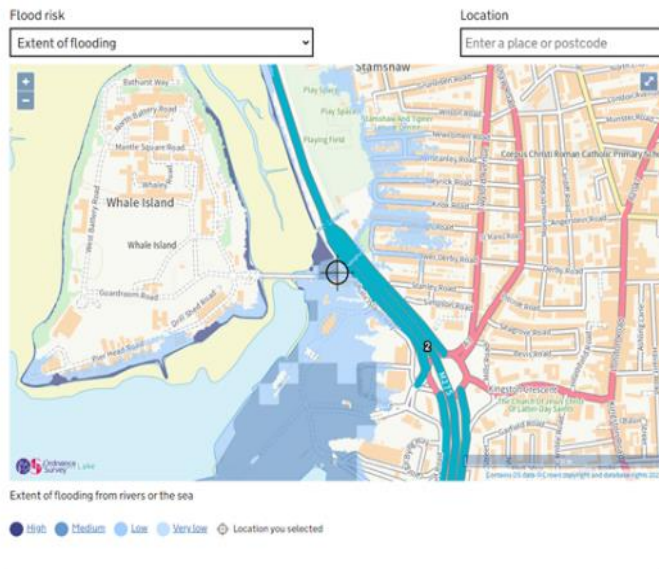




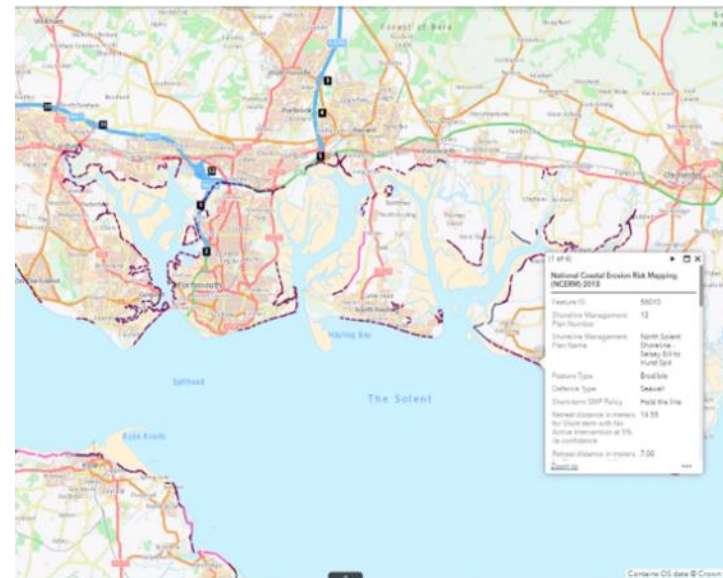
Tracer Pebble



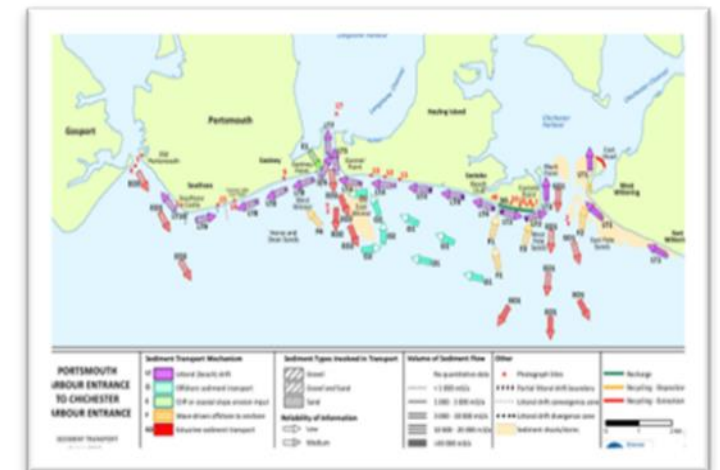
National & regional datasets



National Flood Risk Assessment NAFRA2

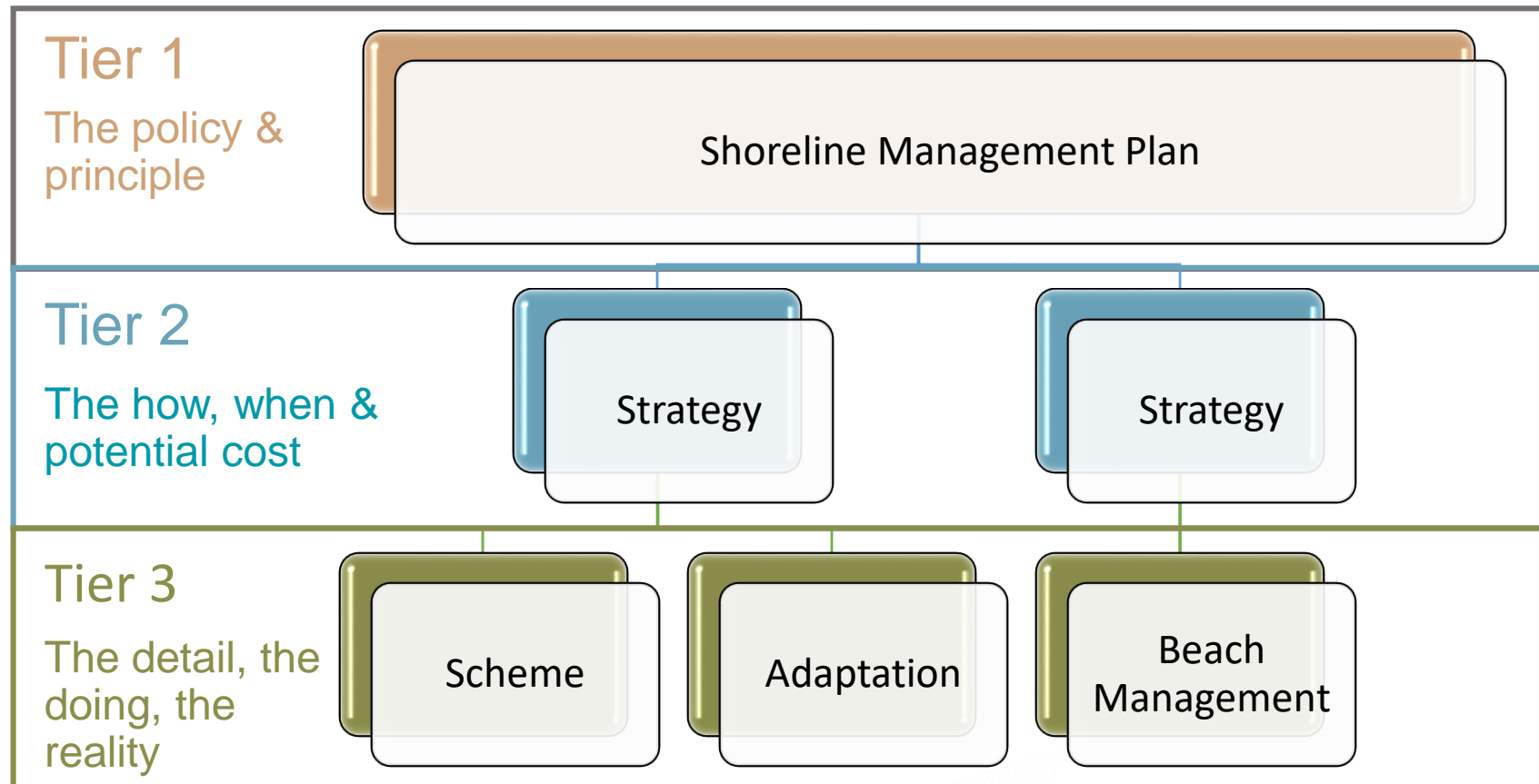


National Coastal Erosion Risk Mapping NCERM2



Sediment Transport Study

UK Coastal Management Framework



Shoreline Management Plans

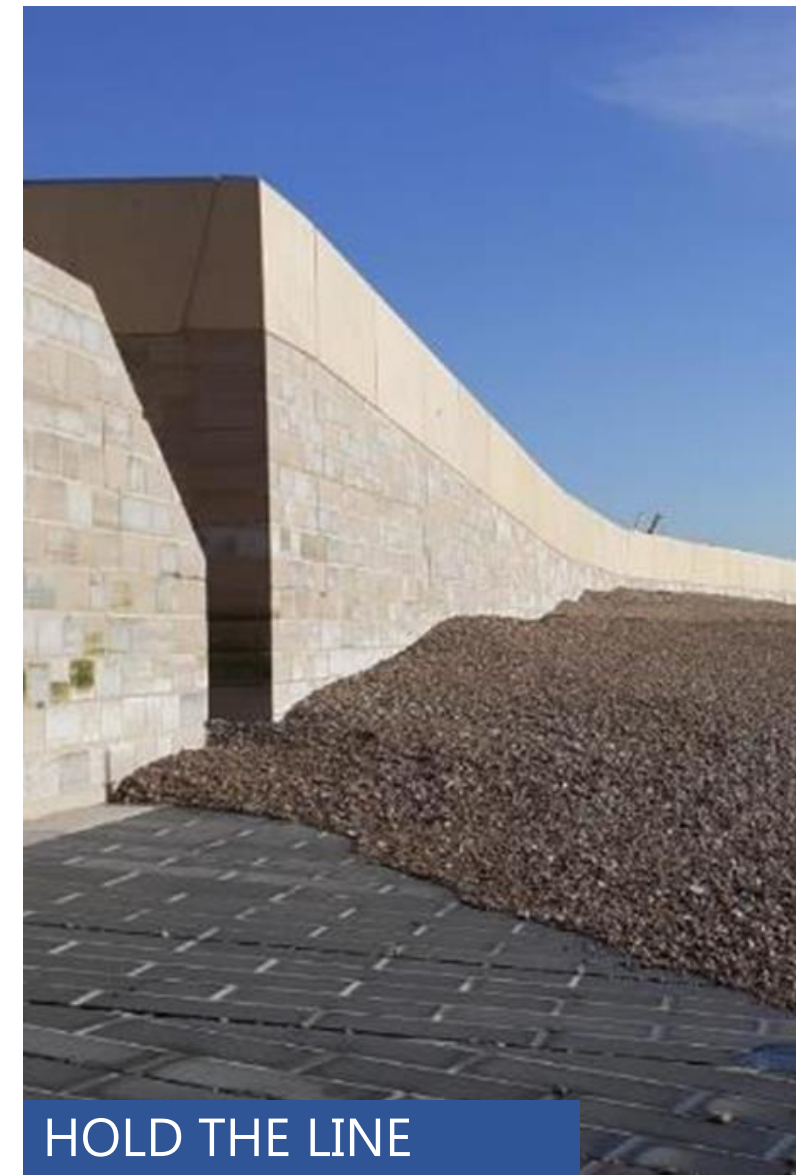
Aim To identify policies to manage risks

Delivers A wide ranging assessment of risks, opportunities & areas of uncertainty

Output Policies & a broad explanation of how this will be achieved

Outcome Improved management for the coast over the long term

SMP Policies....



HOLD THE LINE

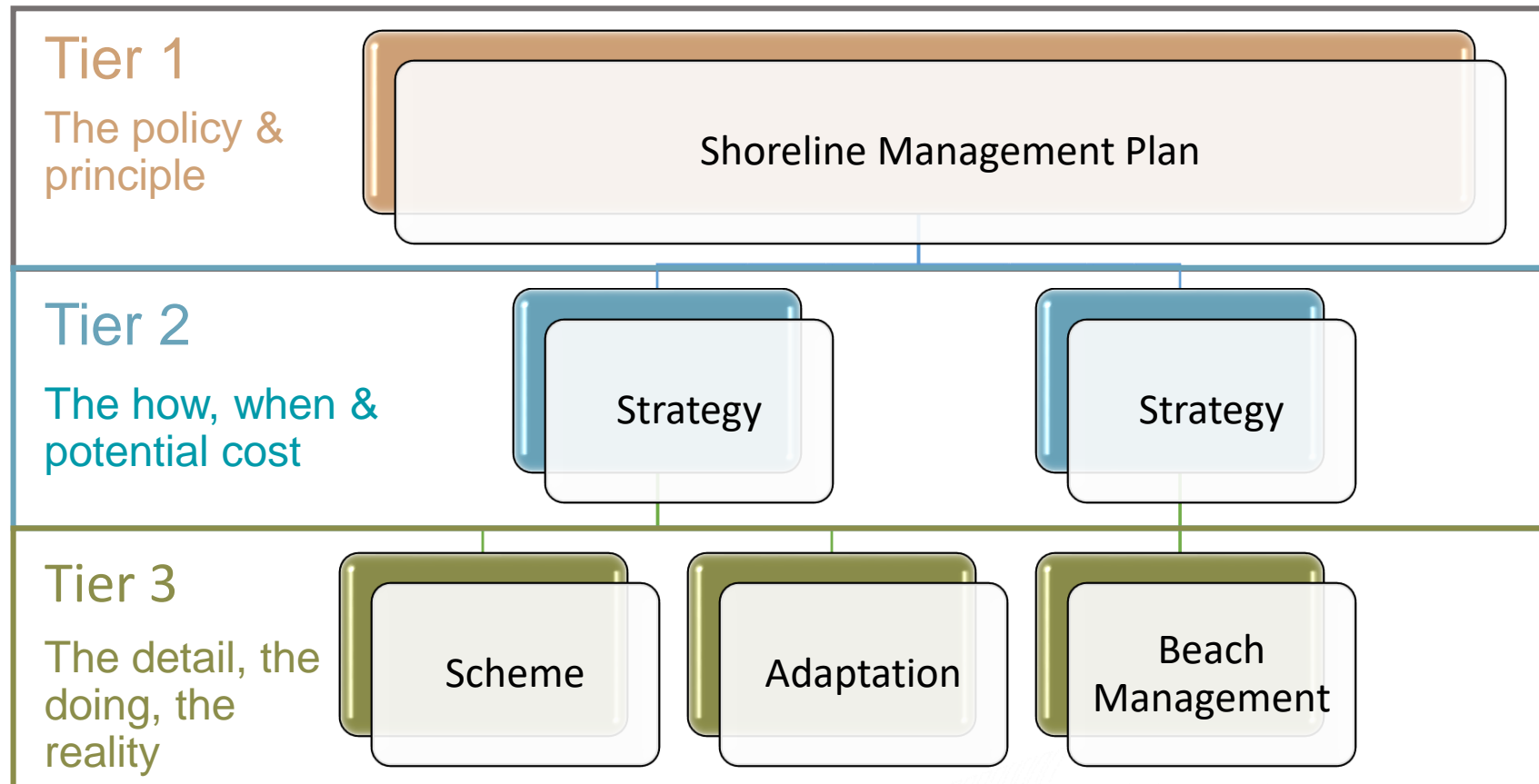


NO ACTIVE
INTERVENTION



MANAGED
REALIGNMENT

UK Coastal Management Framework



Coastal Management Strategy

Sets the preferred approaches to deliver the SMP policies



Aim To identify appropriate schemes to put policies into practice

Delivers Preferred approach including economic & environmental decisions

Output Type of scheme

Outcome Management measures that will provide the best approach to managing coastal flood and

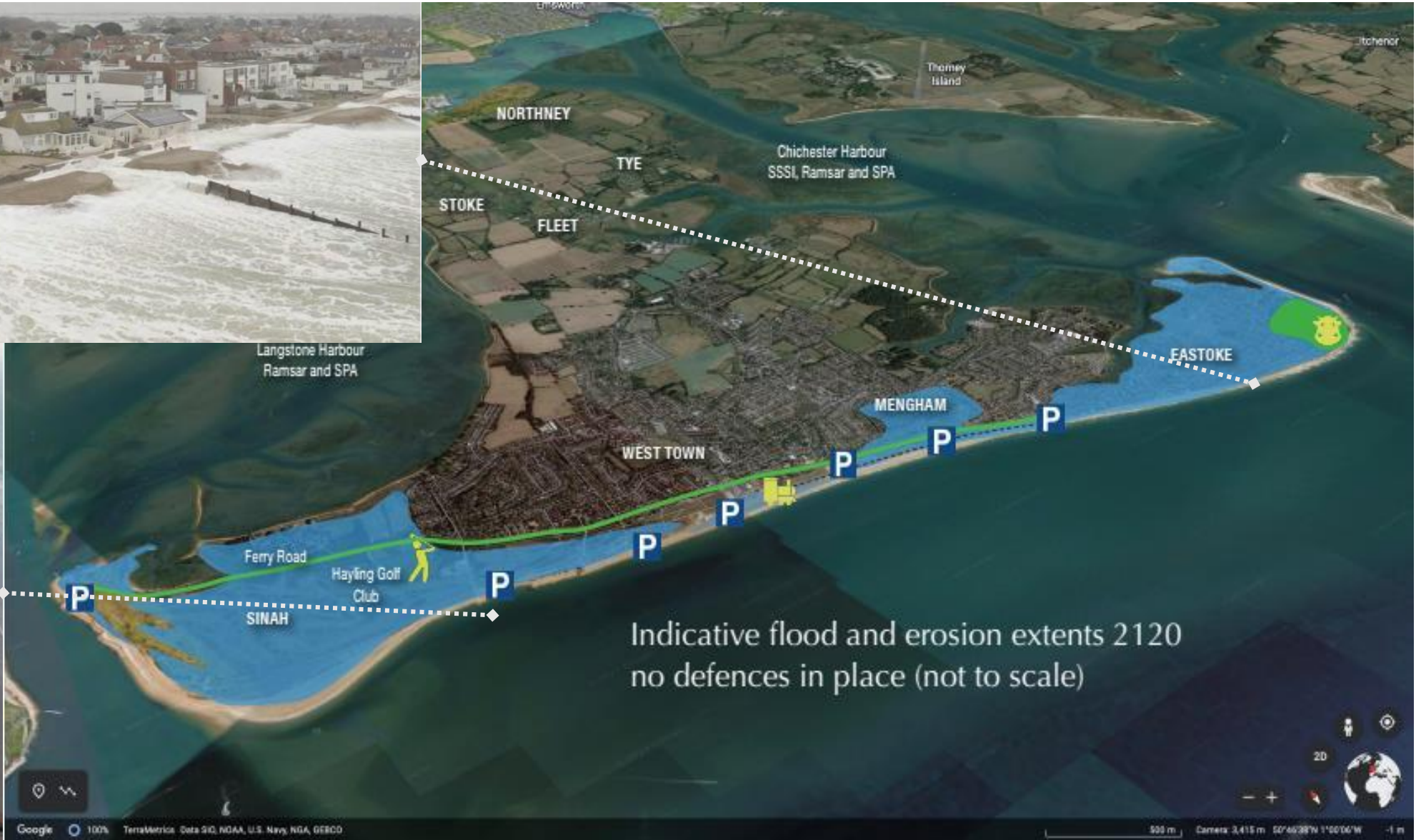
Hayling Island Coastal Management Strategy

A coast under pressure



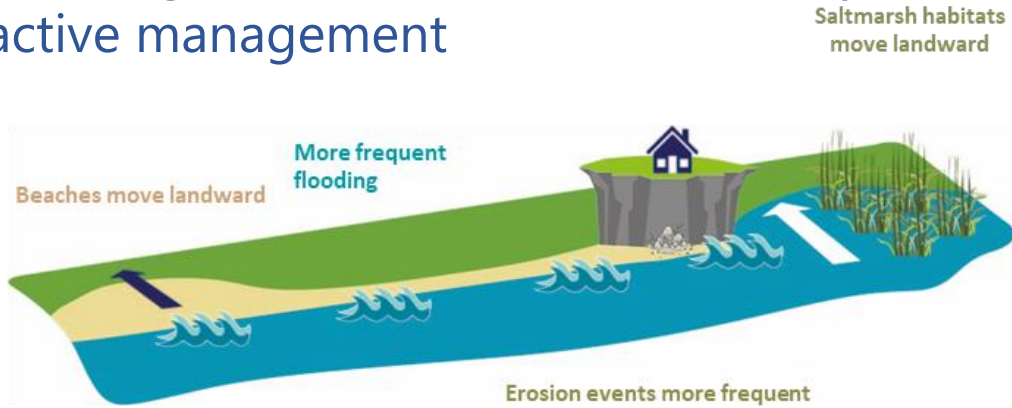


Langstone Harbour
Ramsar and SPA



Accepting the tide

Allowing the coast to evolve naturally, no active management



Adapting to the tide

Adapting to a changing environment



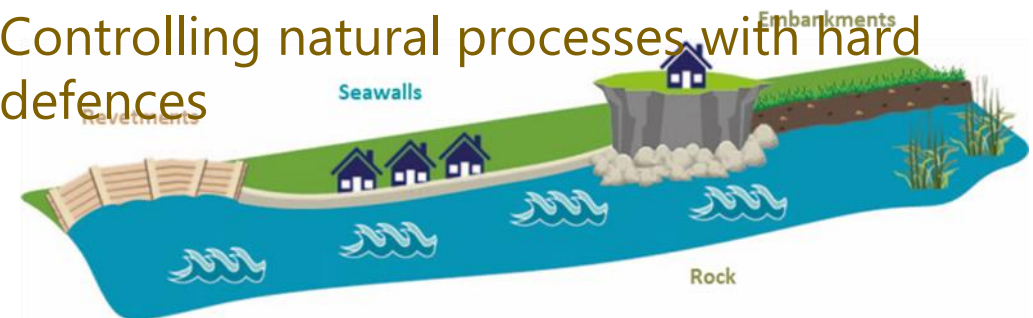
Working with the tide

Working with natural processes and reinstating natural defences



Reducing the impacts of the tide

Controlling natural processes with hard defences



Incorporating adaptation at a strategic level



AVIOD



- Identify future 'no-build areas'
- Use risk informed land-use planning to prevent new development in areas at risk now or in the future

ACCOMMODATE



- Change land use
- Make property resilient to flooding
- Raise community awareness.
- Community support groups
- Flood warning

RETREAT



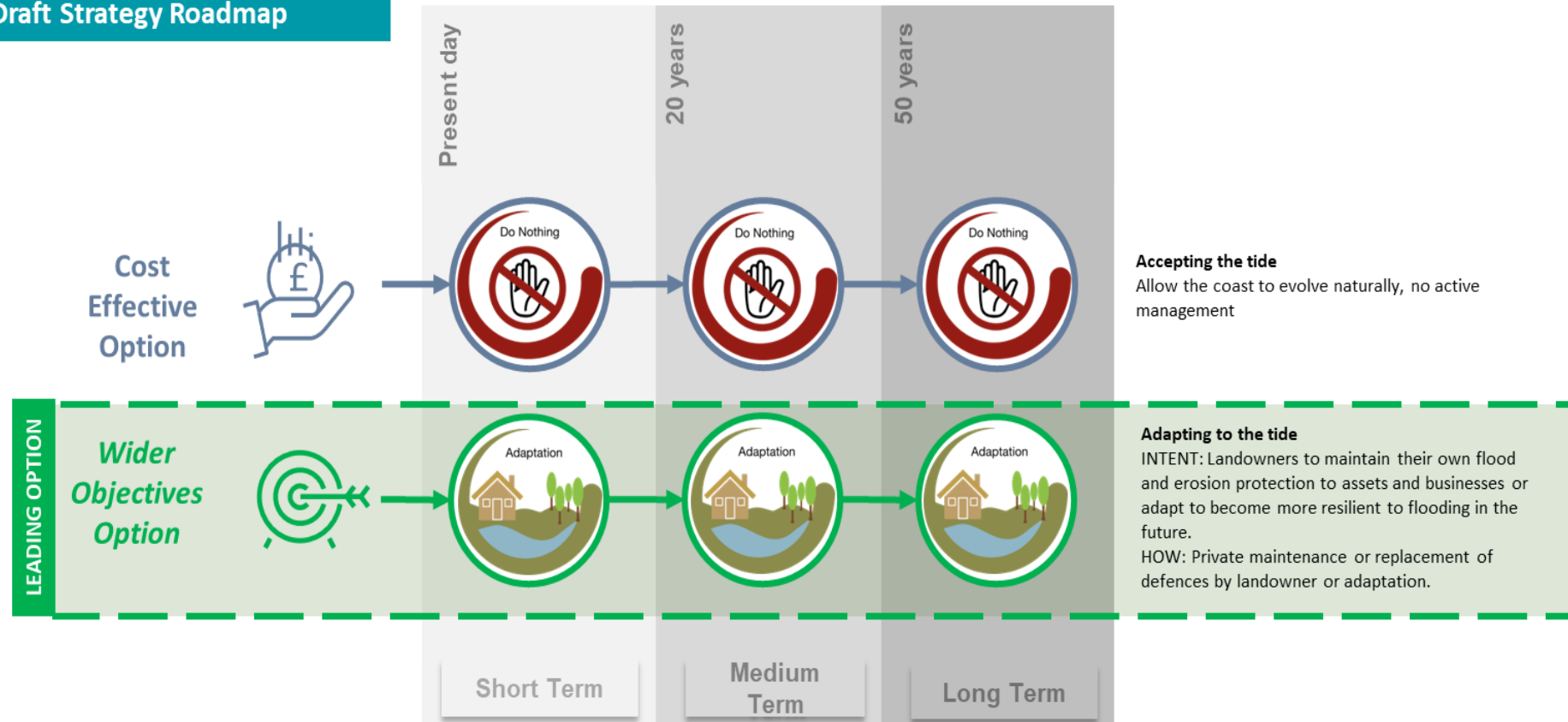
- Withdraw, relocate or abandon assets that are at risk
- Habitats are able to move landward as sea levels rise



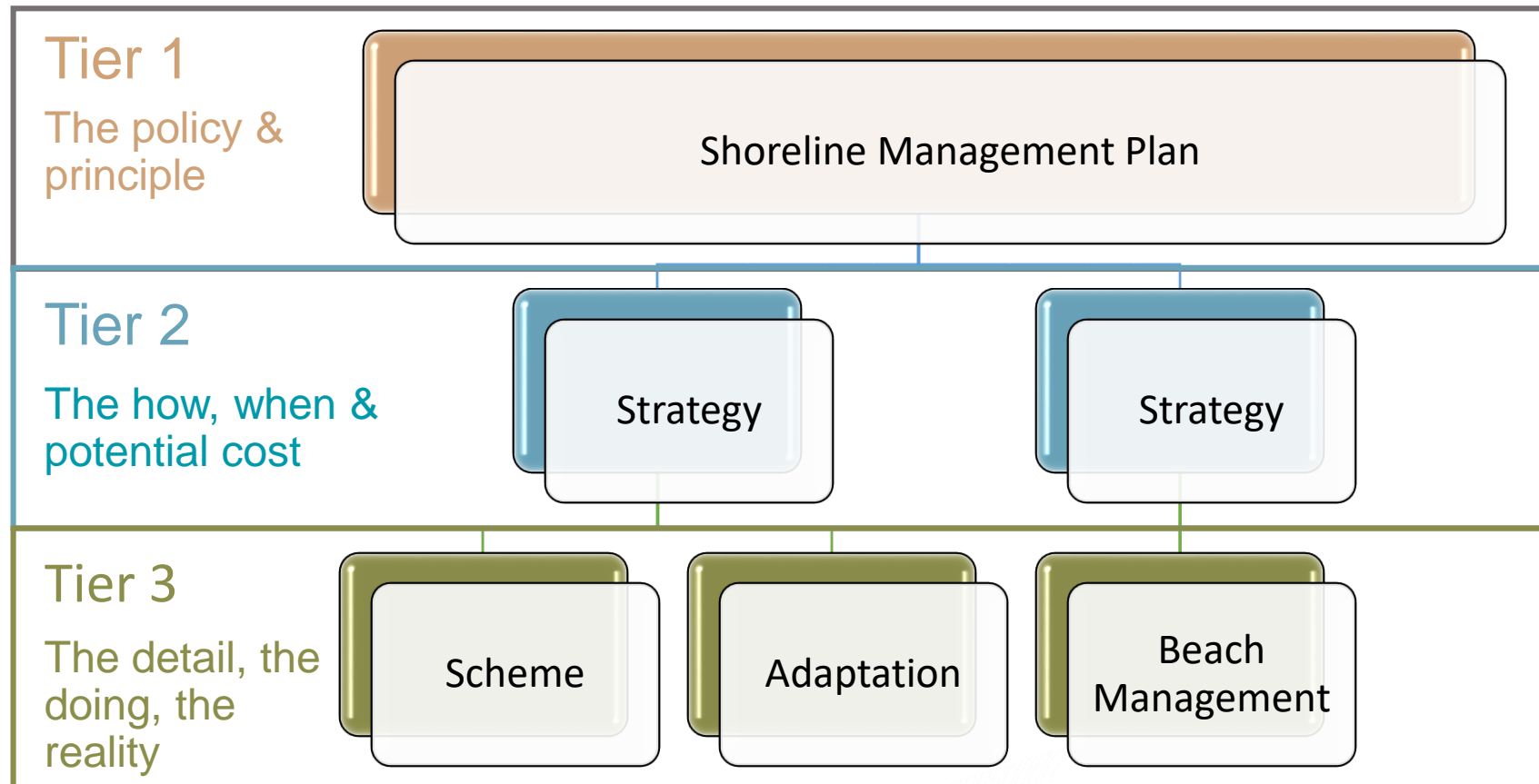
Adaptation pathways

ODU 2: Northney Marina

Draft Strategy Roadmap



UK Coastal Management Framework





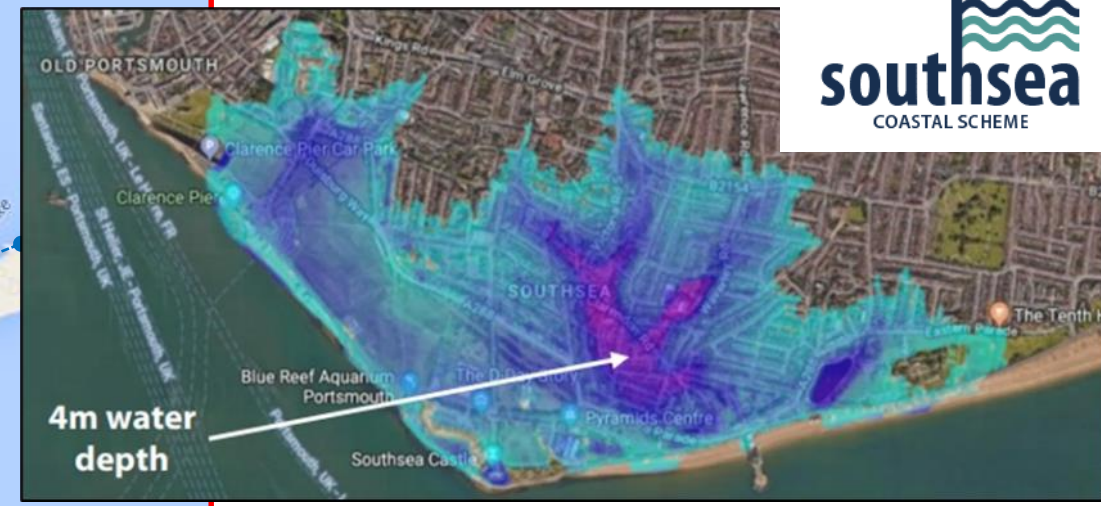
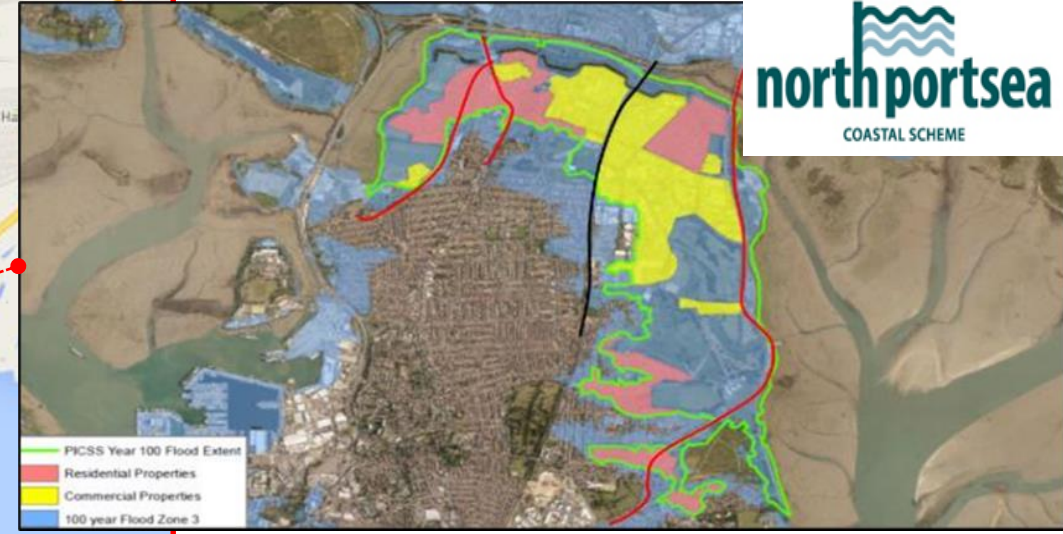
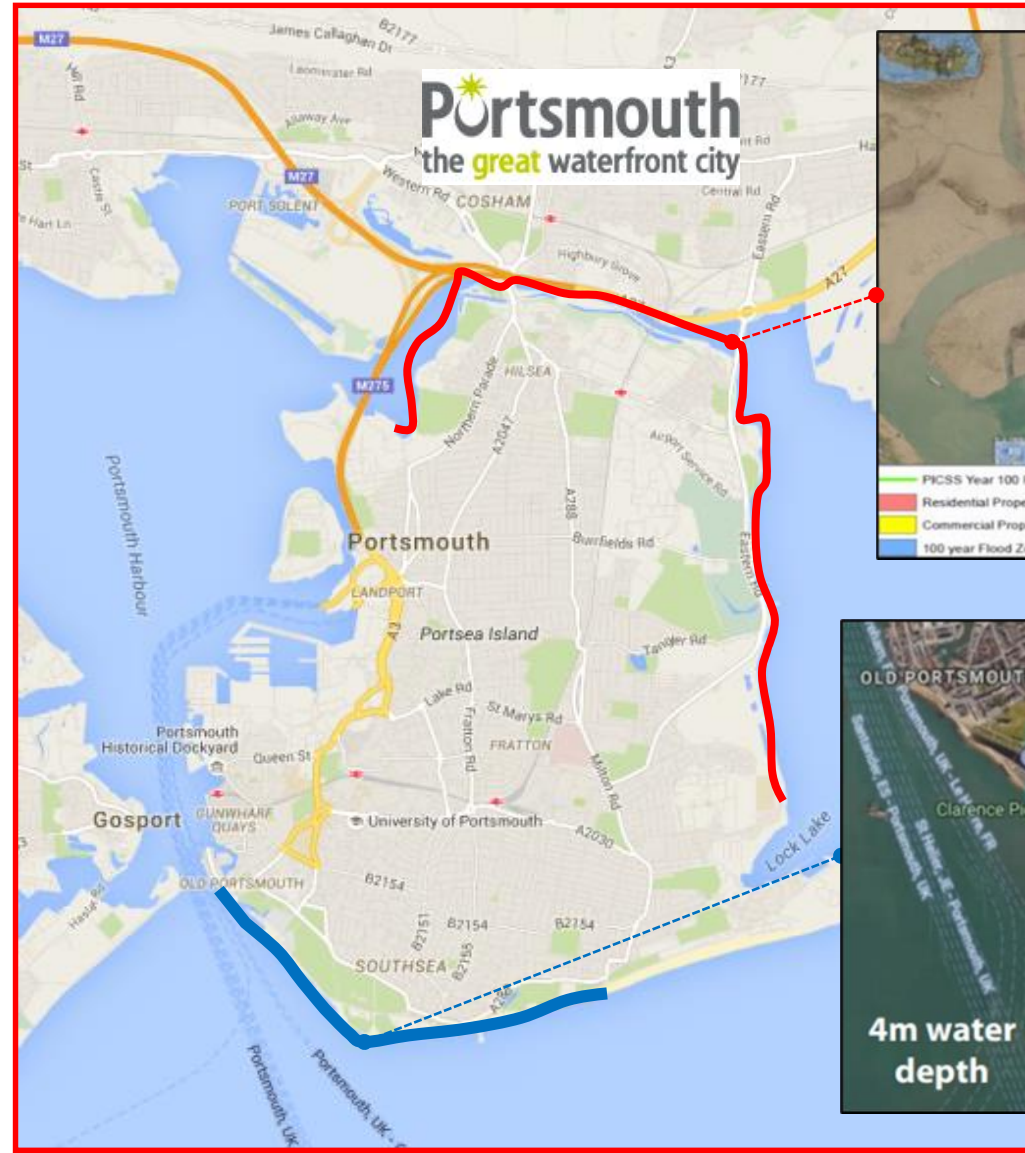
The UK's only island city

Most densely populated city in UK outside London

Maritime city and home to the Royal Navy since 1194

13km of new defences

£225m Investment in coastal flood protection





c. 2019



Long Curtain Moat defences constructed from the 15th century with extensive expansion during the Tudor period

Scheduled Ancient Monument of 'outstanding interest'

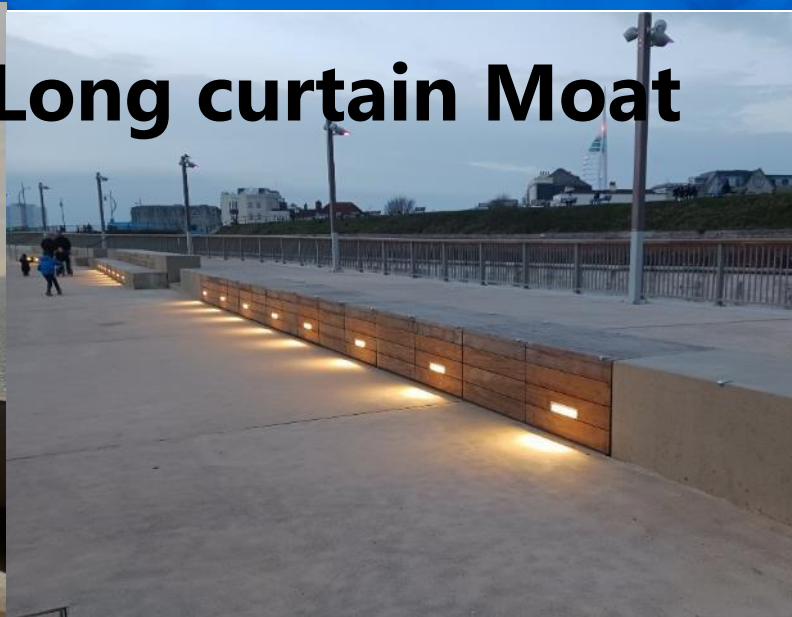
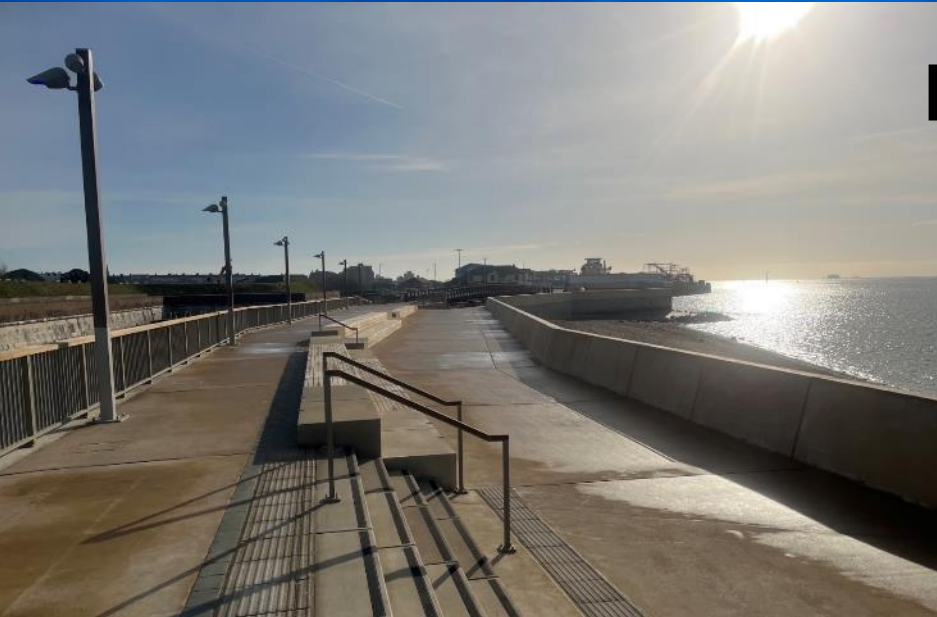
Vice Admiral Lord Nelson boarded HMS Victory from Long Curtain Moat in 1805 on route to the Battle of Trafalgar, his last steps on English soil

Design heavily influenced by impact on the Scheduled Ancient Monument



17th century historic walls uncovered at Spur Redoubt

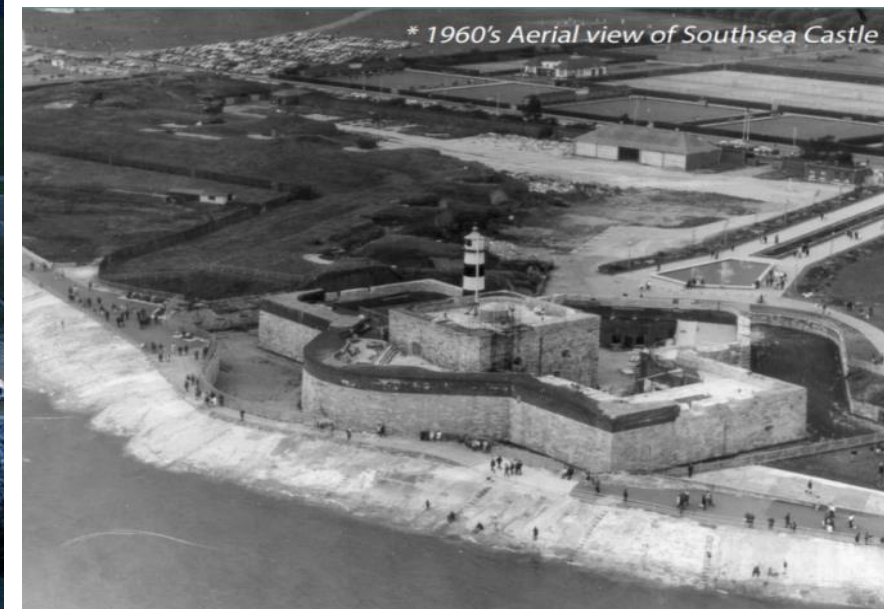
Long curtain Moat



Southsea Castle was constructed by Henry VIII in 1544 to defend against invasion from France and the Holy Roman Empire.

Modified over the years the castle saw action in both WWI and WWII and served as a military prison in the 1840s.

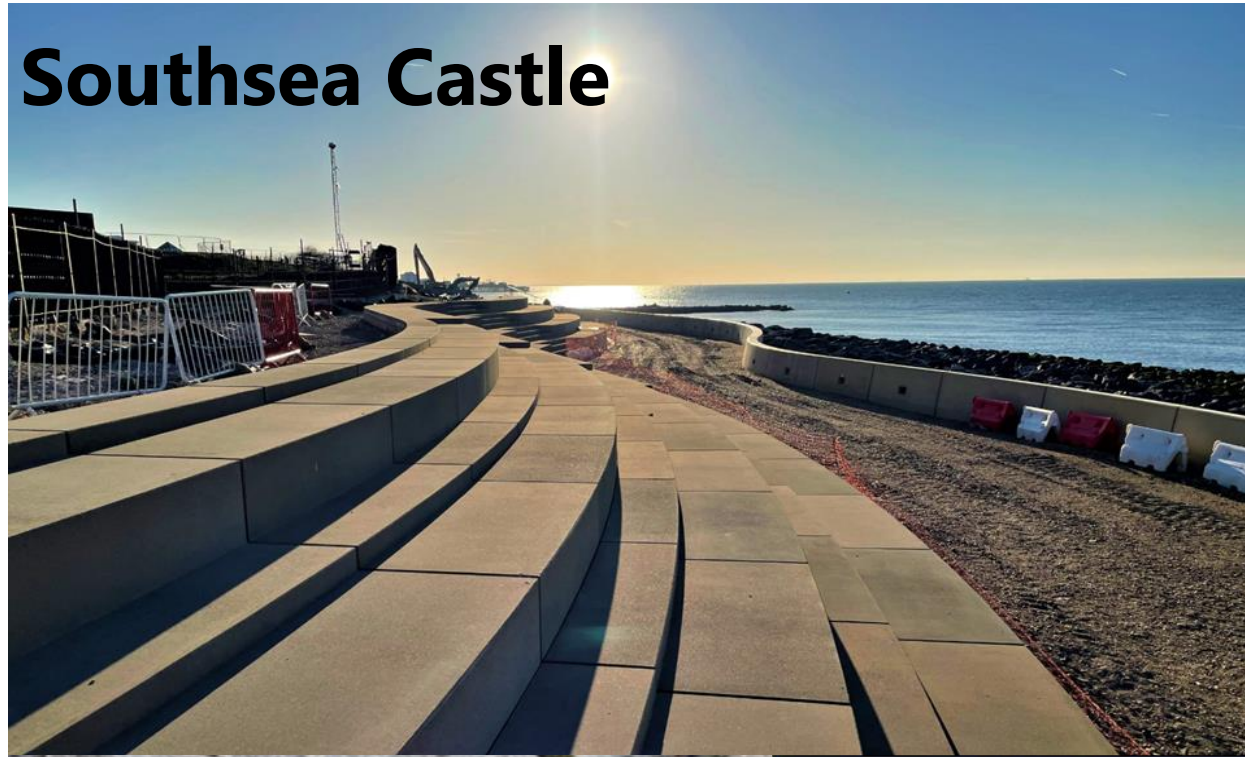
Henry VIII witnessed the Battle of The Solent from Southsea Castle in 1545 in which his flagship the Mary Rose was lost and sunk.



Southsea Castle



Southsea Castle






4,200 homes and 500 businesses at flood risk

Portsmouth and Langstone Harbours, both important locally, nationally and internationally

Environnemental Désignations: SPA, SAC, Ramsar, SSSI

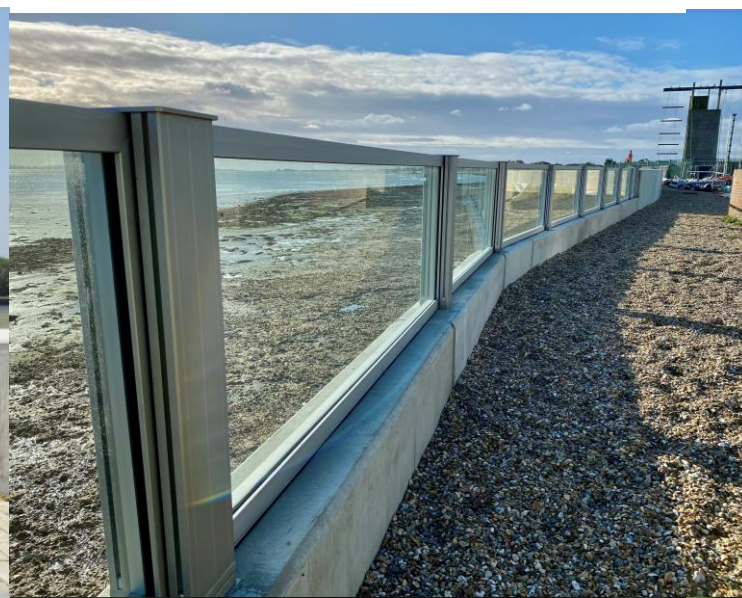
8.4km frontage

£60+ million scheme providing 1:500 year standard of protection

Also delivers environmental and social realm benefits


northportsea
COASTAL SCHEME





Infrastructure



'reducing flood and erosion risk'

Place



'shaping attractive spaces'

Environment



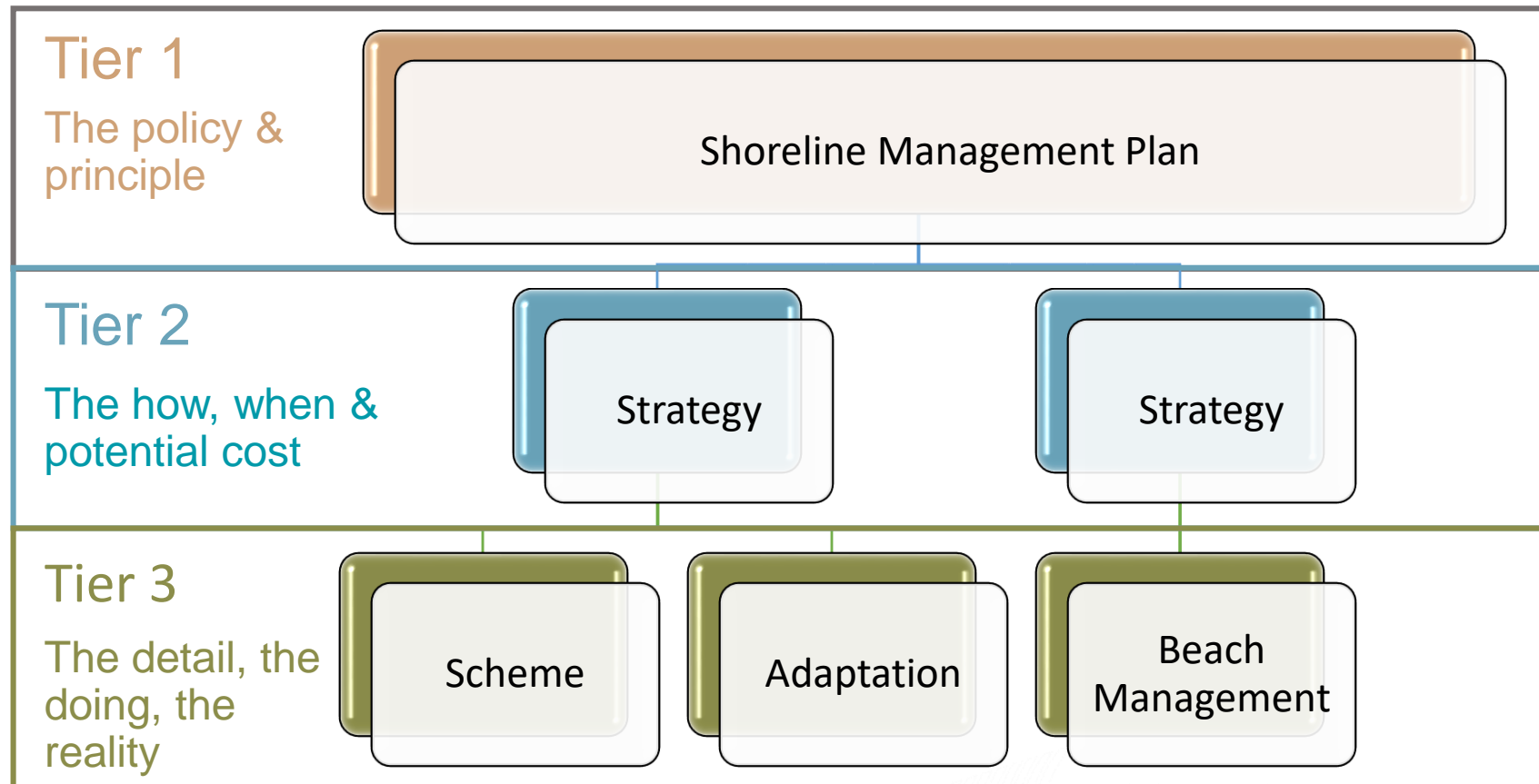
'making homes for nature'

Heritage



'embracing our history'

UK Coastal Management Framework



Coastal Adaptation

...anticipating appropriate action to prevent or minimise the likelihood and consequences of flooding and coastal change, both now and in the future ... (National FCERM Strategy 2020)



Using softer approaches and nature based solutions



Making space for nature and creating new habitat



Resilient communities and awareness

Beach management – adapting our approaches



Beach recycling



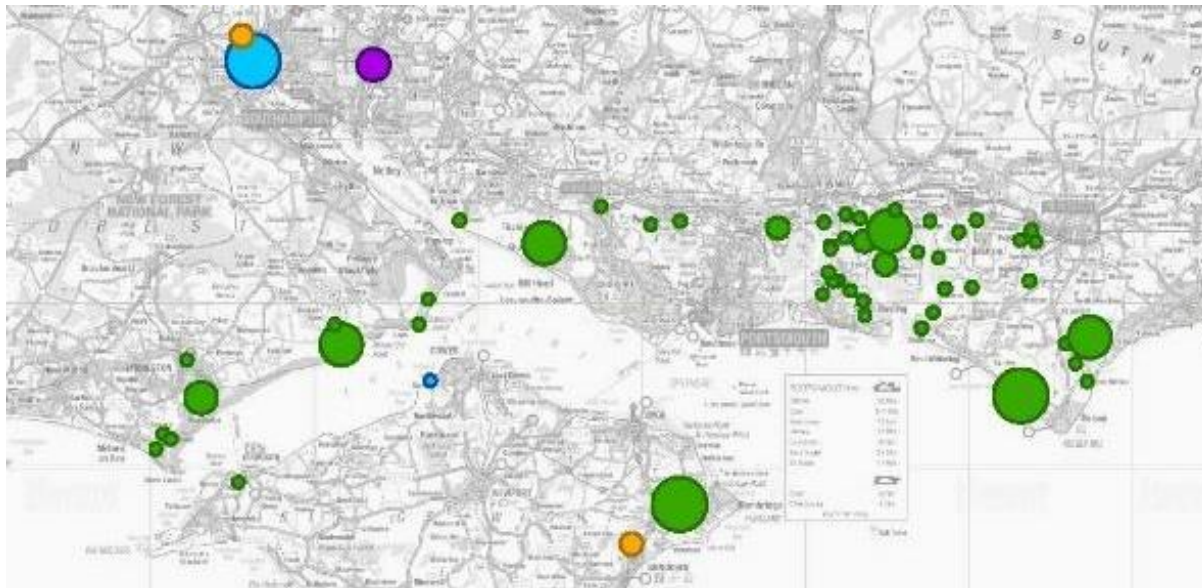
Beach recharge

Making space for nature

SMP Habitat Group	Cumulative Habitat Balance (Ha)		
	Epoch 1 (2005 - 2025)	Epoch 2 (2026 - 2055)	Epoch 3 (2056 - 2105)
Intertidal Mudflats	43	75	-32
Saltmarsh	-20	-208	-392
Coastal Grazing Marsh	69	69	69
Freshwater Habitats	17	17	17
Saline Lagoons	0	0	0



Habitat
Compensation
&
Restoration
Programme
(HCRP)



Intertidal habitat creation



Coastal adaptation - communities



**Flood and Coastal Resilience
Innovation Programme (FCRIP)**



Copyright BBC News <https://www.bbc.co.uk/news/av/uk-england-norfolk-43465731>

**Coastal Transition Accelerator
Programme (CTAP)**

Key messages

- New policies, guidance & funding mechanisms for adaptation
- A sound evidence base is key
- Collaboration and co-ordination between partners
- Combine approaches
- Stack benefits and blend funding
- Start planning for adaptation now
- Start the conversation with communities now





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Thank you