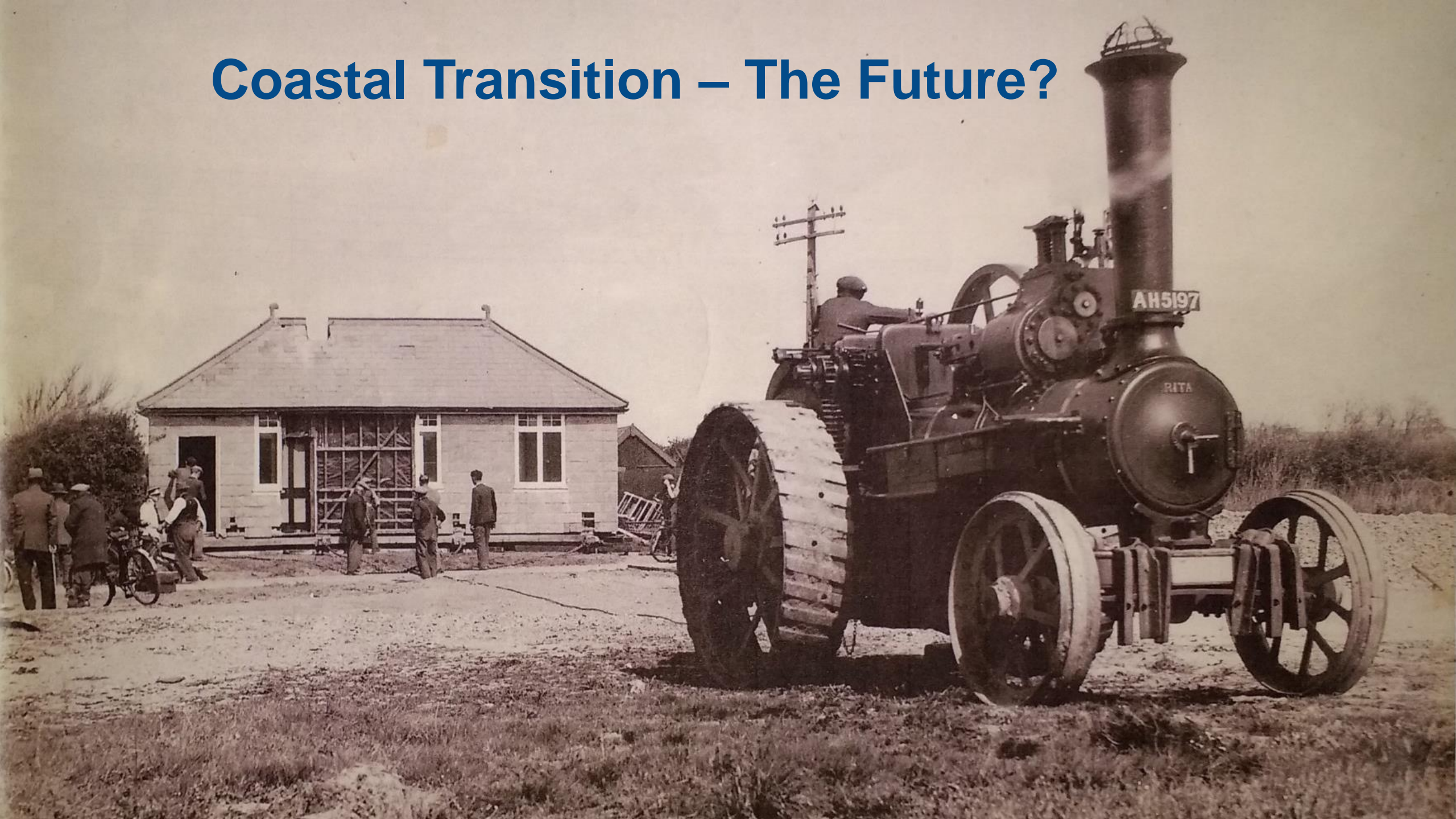




NORTH  
NORFOLK  
DISTRICT  
COUNCIL

COASTWISE

# Coastal Transition – The Future?



# Defra FCERM Policy Statement



In areas facing significant coastal erosion and impacts from rising sea levels, to limit impacts and unlock the advantages our coastline brings, local areas may determine that a **managed transition away from high risk areas** is the most effective and practical response.

**The government is committed to enabling this transition by supporting local areas to help them to implement long-term plans.**

# National FCERM Strategy



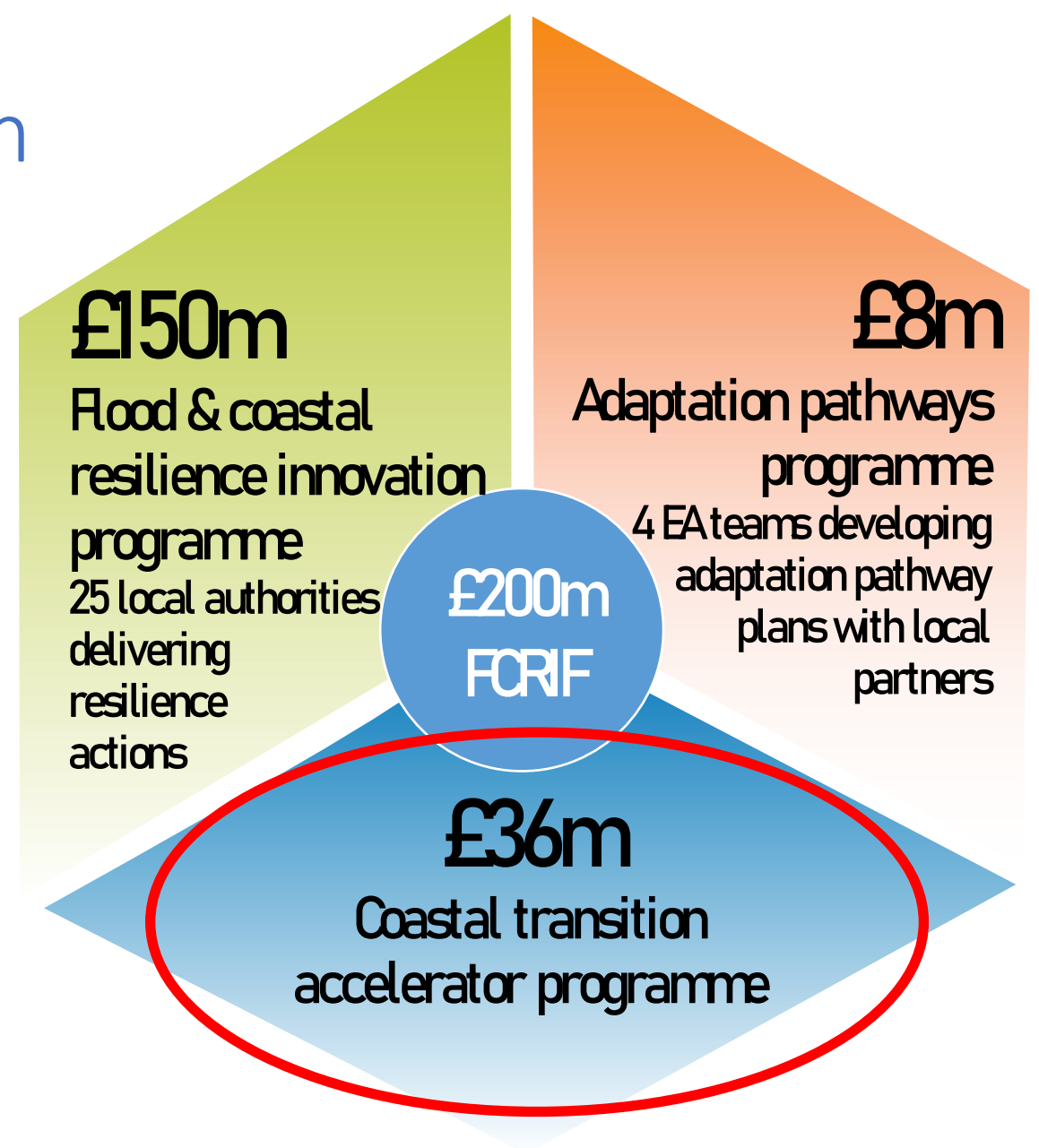
In some places the scale and pace of change may be very significant that over a period of **time risk management authorities will need to support communities to transition and adapt to a changing climate.** In these places, the focus of resilience both now and in the future, will be on keeping people safe from harm and to **develop resilience actions** that minimise the impacts of flooding and coastal change on communities.

**Strategic objective 1.3: Between now and 2050 risk management authorities will help coastal communities transition and adapt to a changing climate.**

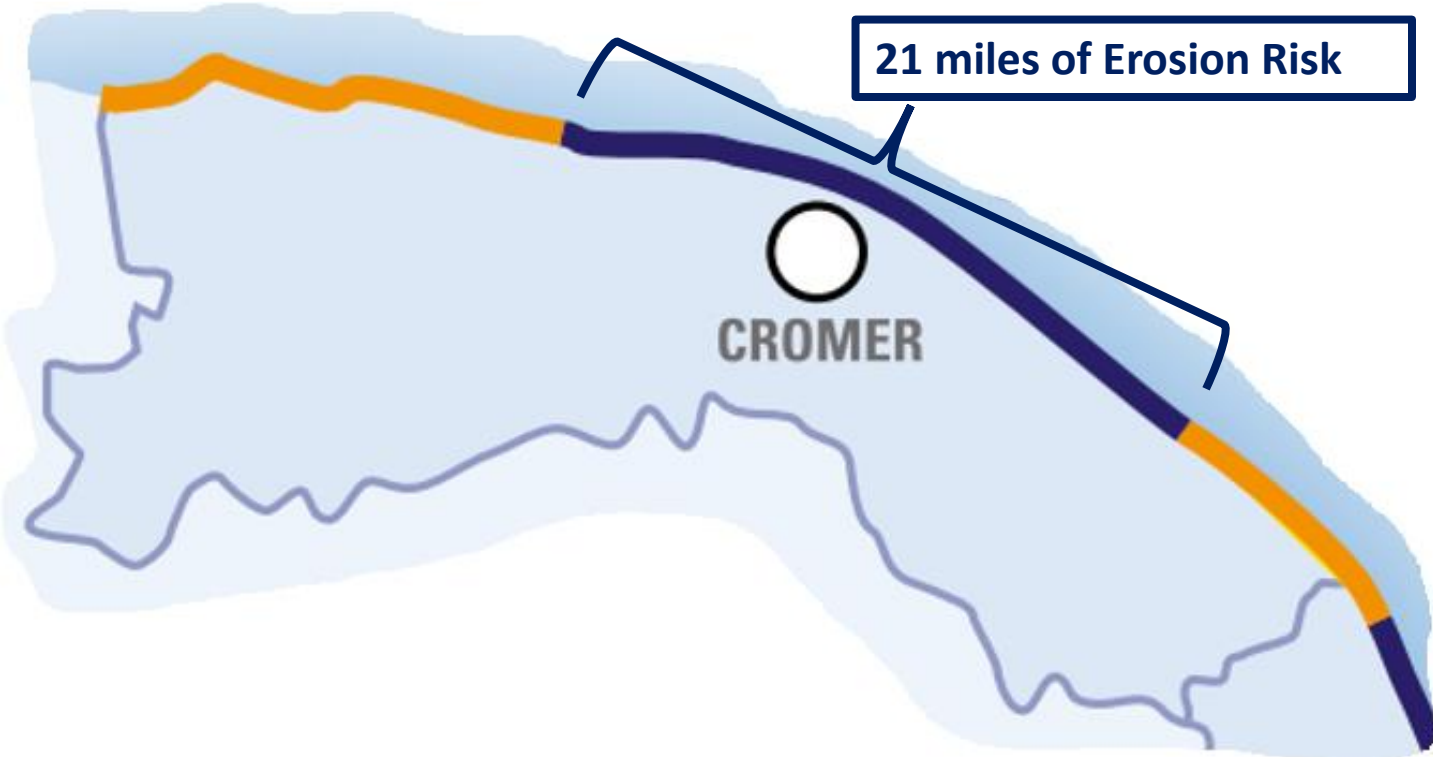
# Flood & Coastal Innovation Programmes (FCIP)

- £200m | 2021-27
- 25 FCRIP local authorities
- 4 EA areas
- 2 coastal authorities

We will drive innovation in flood and coastal resilience and adaptation to a changing climate. We're investing £200 million to test and develop new ways to create a nation resilient to flooding and coastal change.



# The Challenge



The UK average temperature has  
**INCREASED**  
by **0.8 degrees**  
since 1961–1990

By 2050 there could be  
a **65%** chance of a summer  
**AS HOT**  
**AS 2018**

The UK has seen a **16 cm**  
**SEA LEVEL RISE** since 1900

Summer temperatures  
could be up to  
**7.4°C hotter**  
by 2050,  
while winters could be up to  
**4.4°C hotter**

By 2100 summer rainfall could  
**DECREASE**  
by up to **62%**

There could be up to **59% more**  
**PRECIPITATION**  
in winters by 2050

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

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

Climate challenges



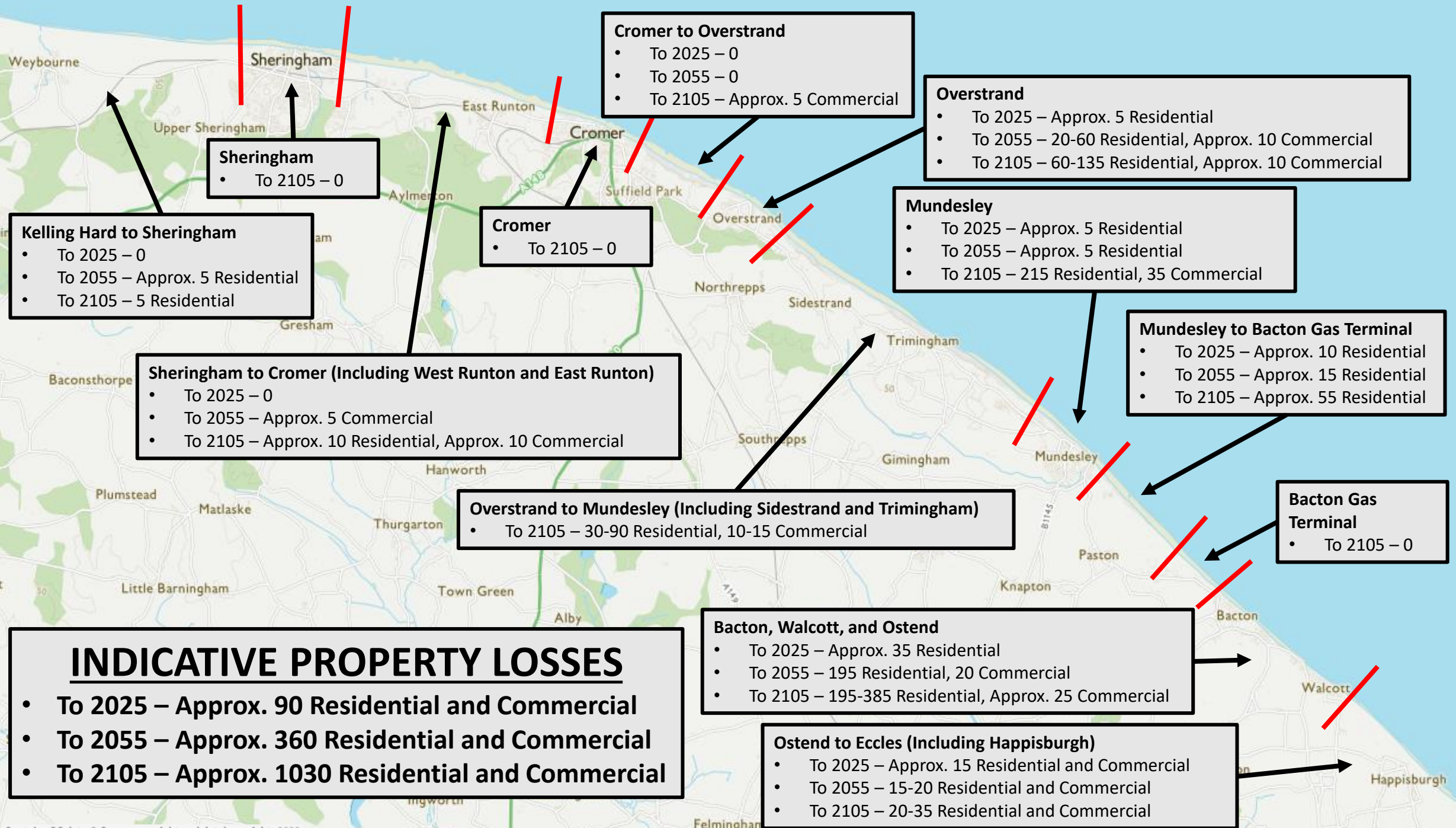
Deteriorating sea defences



Increasing coastal challenges



Reduction in beach volumes



**Cromer to Overstrand**

- To 2025 – 0
- To 2055 – 0
- To 2105 – Approx. 5 Commercial

**Overstrand**

- To 2025 – Approx. 5 Residential
- To 2055 – 20-60 Residential, Approx. 10 Commercial
- To 2105 – 60-135 Residential, Approx. 10 Commercial

**Sheringham**

- To 2105 – 0

**Cromer**

- To 2105 – 0

**Mundesley**

- To 2025 – Approx. 5 Residential
- To 2055 – Approx. 5 Residential
- To 2105 – 215 Residential, 35 Commercial

**Kelling Hard to Sheringham**

- To 2025 – 0
- To 2055 – Approx. 5 Residential
- To 2105 – 5 Residential

**Mundesley to Bacton Gas Terminal**

- To 2025 – Approx. 10 Residential
- To 2055 – Approx. 15 Residential
- To 2105 – Approx. 55 Residential

**Sheringham to Cromer (Including West Runton and East Runton)**

- To 2025 – 0
- To 2055 – Approx. 5 Commercial
- To 2105 – Approx. 10 Residential, Approx. 10 Commercial

**Overstrand to Mundesley (Including Sidestrand and Trimmingham)**

- To 2105 – 30-90 Residential, 10-15 Commercial

**Bacton Gas Terminal**

- To 2105 – 0

**INDICATIVE PROPERTY LOSSES**

- To 2025 – Approx. 90 Residential and Commercial
- To 2055 – Approx. 360 Residential and Commercial
- To 2105 – Approx. 1030 Residential and Commercial

**Bacton, Walcott, and Ostend**

- To 2025 – Approx. 35 Residential
- To 2055 – 195 Residential, 20 Commercial
- To 2105 – 195-385 Residential, Approx. 25 Commercial

**Ostend to Eccles (Including Happisburgh)**

- To 2025 – Approx. 15 Residential and Commercial
- To 2055 – 15-20 Residential and Commercial
- To 2105 – 20-35 Residential and Commercial





Up to 2105, approximately  
1030 residential and commercial  
properties are predicted to be lost.

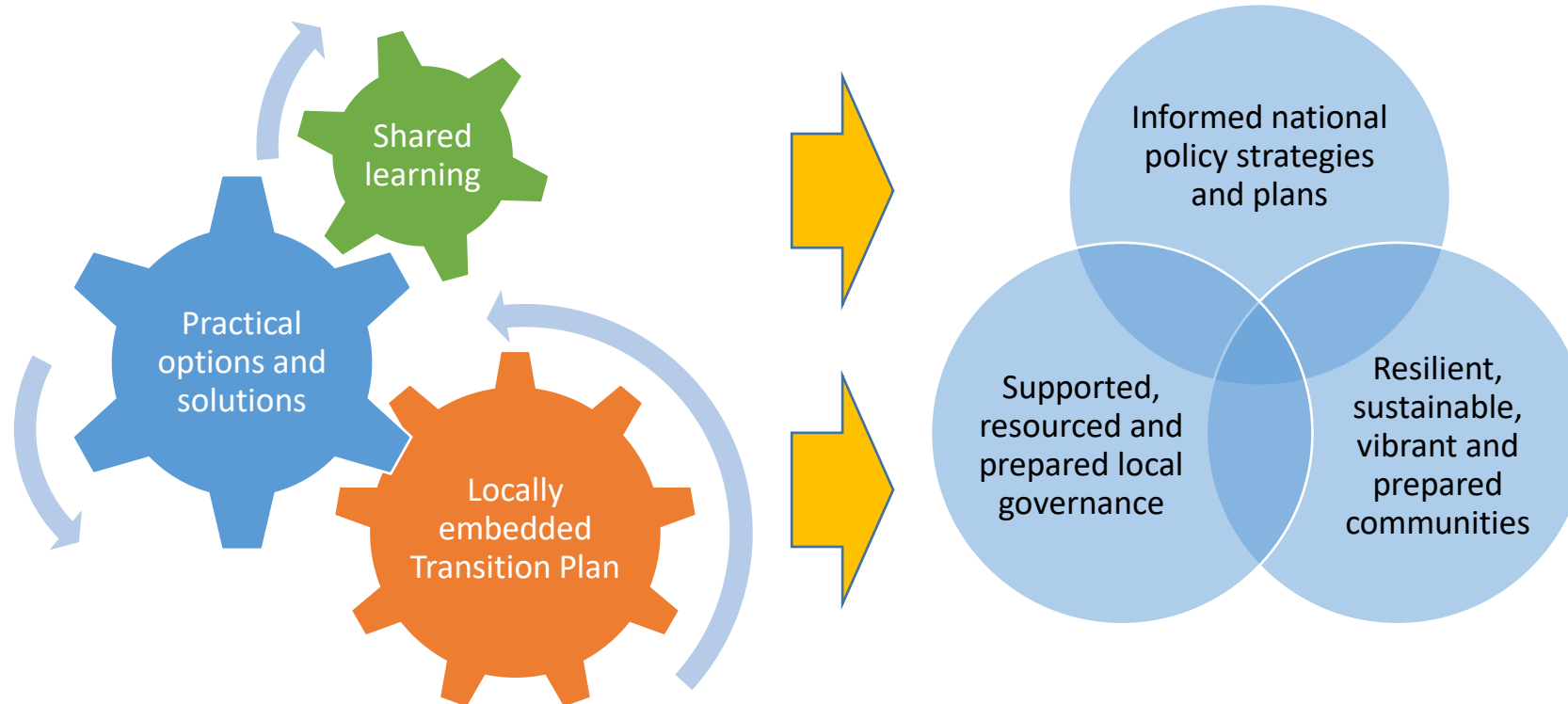


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[north-norfolk.gov.uk](http://north-norfolk.gov.uk)

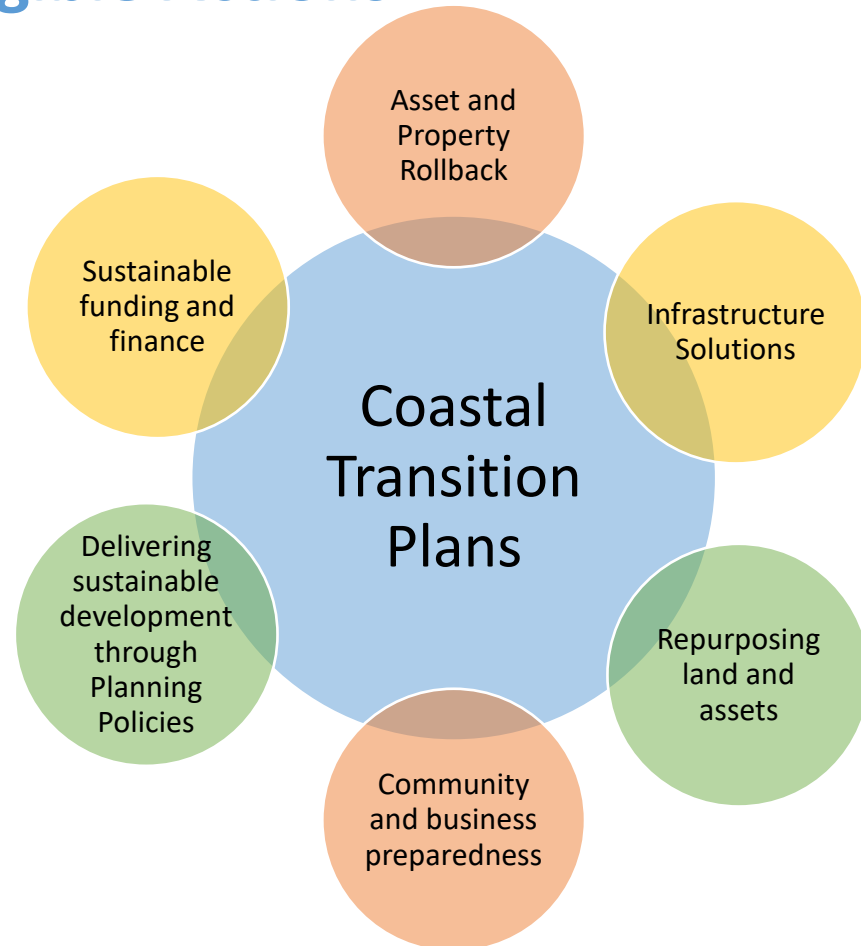
# CTAP Objectives

- Develop Strategic Transition Plans
- Capture evidence, tools and learning
- Embed learning and approaches in FCERM policy and investment decisions and local policy
- Test and demonstrate practical actions
- Share learning and transferability



# Coastal Transition Accelerator Programme

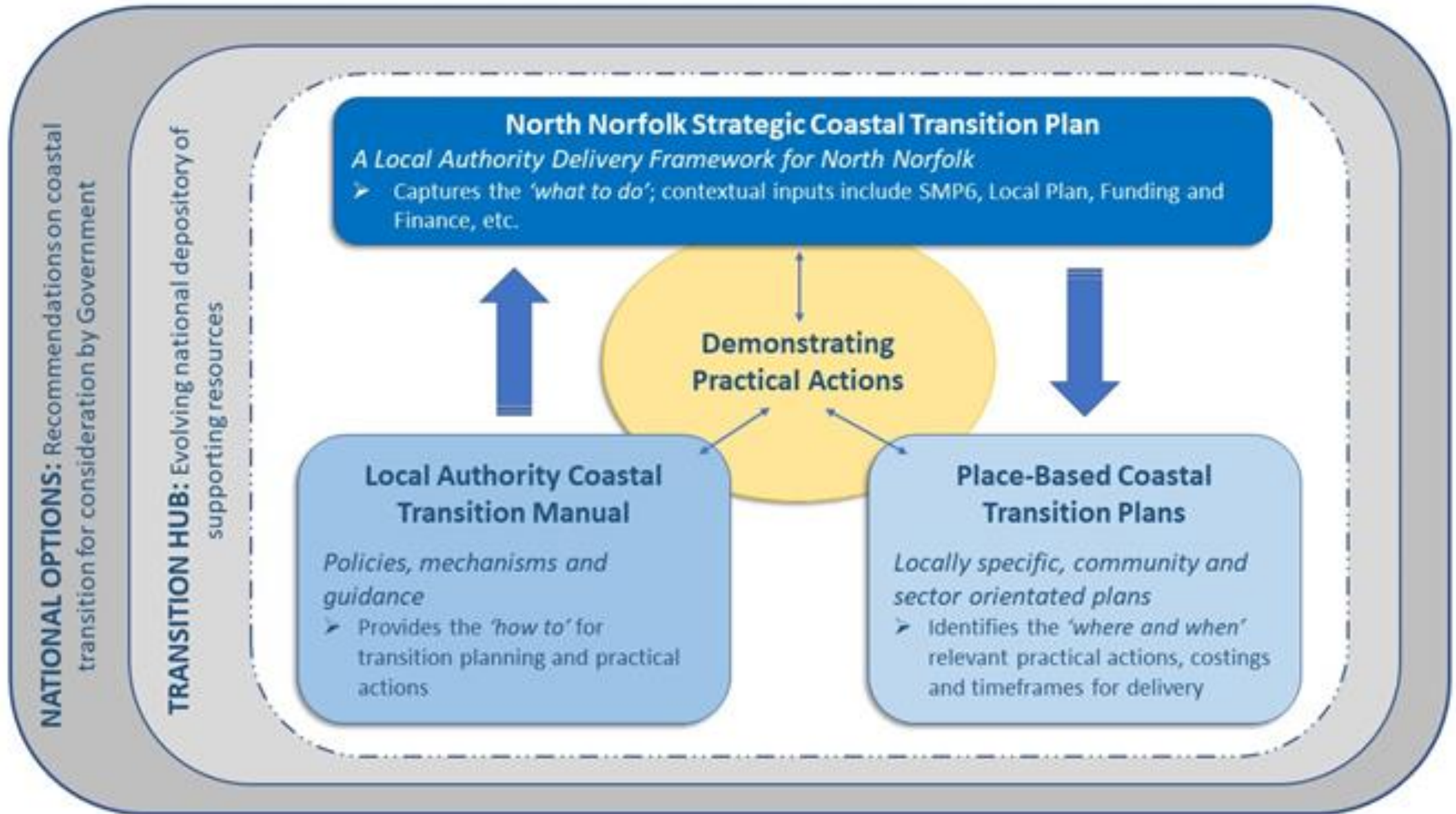
## Eligible Actions



## Exclusions

- **Traditional Coastal Risk Management Structures**
- **Compensation**
- **Normal Local Authority functions (e.g. Emergency Planning)**

# Coastwise Outputs



# COASTWISE

## Work Packages

Transition  
Plans and  
Approach

People and  
Place  
Preparedness

Practical  
Actions and  
Support

Funding and  
Finance

Programme  
Management  
& Governance

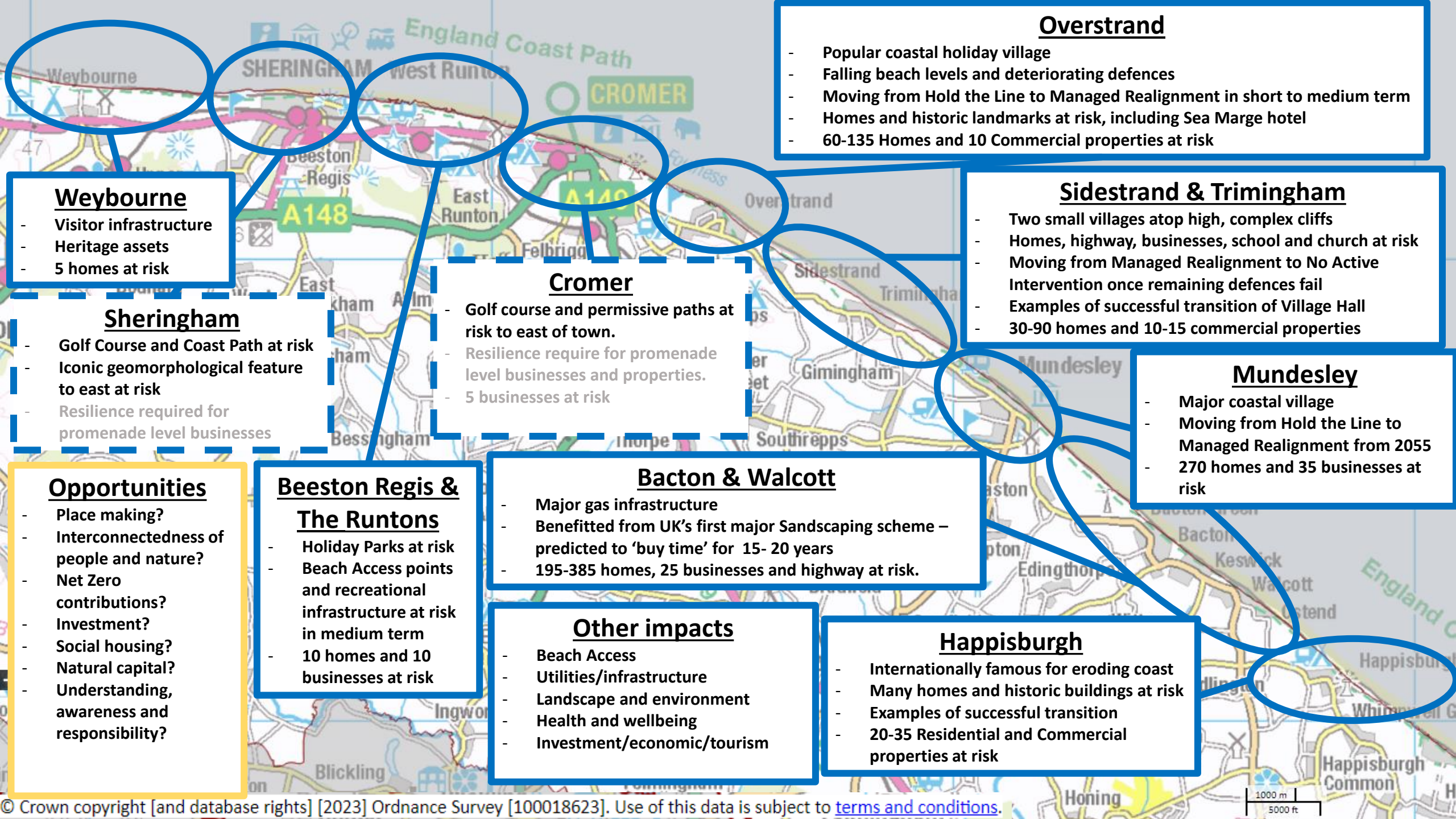
## Themes

**Policy  
Development**  
Identifying where  
policy, strategies  
plans and legislation  
supports or creates  
challenges for  
transition.

**Stakeholder  
Engagement**  
Ensuring  
involvement of  
stakeholders is  
integral to all  
aspects of the  
programme.

**Evidence and  
Learning**  
Data and evidence  
to support policy  
development and  
decision making as  
well as knowledge  
and learning.

**Net Zero**  
Reduction and  
mitigation of carbon



### Weybourne

- Visitor infrastructure
- Heritage assets
- 5 homes at risk

### Sheringham

- Golf Course and Coast Path at risk
- Iconic geomorphological feature to east at risk
- Resilience required for promenade level businesses

### Opportunities

- Place making?
- Interconnectedness of people and nature?
- Net Zero contributions?
- Investment?
- Social housing?
- Natural capital?
- Understanding, awareness and responsibility?

### Beeston Regis & The Runtons

- Holiday Parks at risk
- Beach Access points and recreational infrastructure at risk in medium term
- 10 homes and 10 businesses at risk

### Cromer

- Golf course and permissive paths at risk to east of town.
- Resilience require for promenade level businesses and properties.
- 5 businesses at risk

### Bacton & Walcott

- Major gas infrastructure
- Benefitted from UK's first major Sandscaping scheme – predicted to 'buy time' for 15- 20 years
- 195-385 homes, 25 businesses and highway at risk.

### Other impacts

- Beach Access
- Utilities/infrastructure
- Landscape and environment
- Health and wellbeing
- Investment/economic/tourism

### Happisburgh

- Internationally famous for eroding coast
- Many homes and historic buildings at risk
- Examples of successful transition
- 20-35 Residential and Commercial properties at risk

### Overstrand

- Popular coastal holiday village
- Falling beach levels and deteriorating defences
- Moving from Hold the Line to Managed Realignment in short to medium term
- Homes and historic landmarks at risk, including Sea Marge hotel
- 60-135 Homes and 10 Commercial properties at risk

### Sidestrand & Trimingham

- Two small villages atop high, complex cliffs
- Homes, highway, businesses, school and church at risk
- Moving from Managed Realignment to No Active Intervention once remaining defences fail
- Examples of successful transition of Village Hall
- 30-90 homes and 10-15 commercial properties

### Mundesley

- Major coastal village
- Moving from Hold the Line to Managed Realignment from 2055
- 270 homes and 35 businesses at risk

# Weybourne

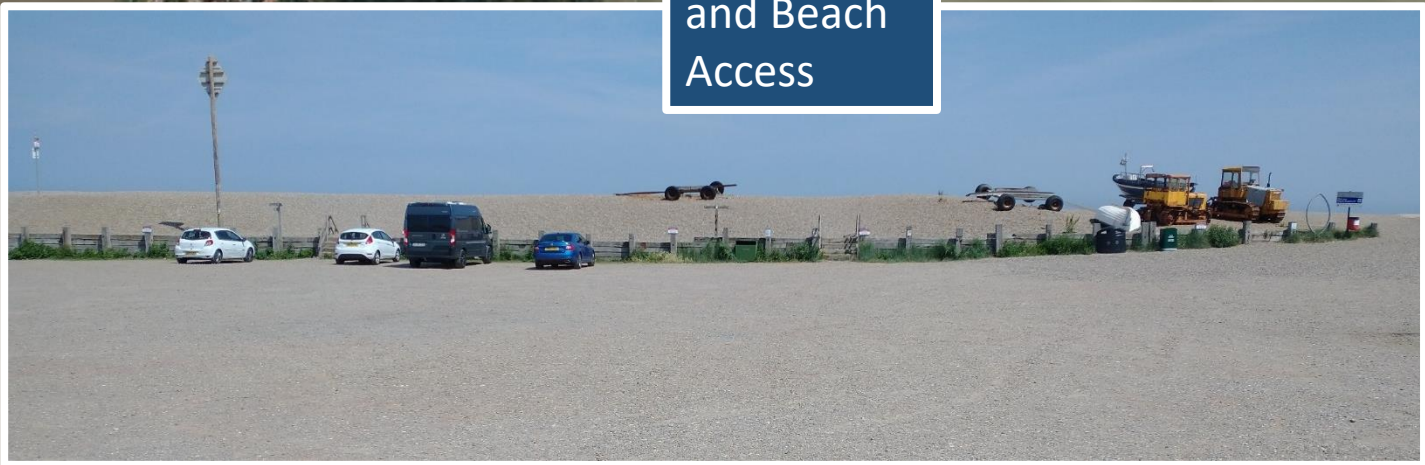
Approximate location of international telephone cable

England Coast Path

Homes

Car Park and Beach Access

- Transition Needs:
- Beach Access needs to be maintained
  - Car park
  - 5 residential homes
  - Coast path realignment
  - Infrastructure maintenance



# Sheringham

Golf Course

Lifeboat Station



Iconic landscape feature 'Beeston Bump'

England Coast Path

Transition Needs:  
- Coast Path  
- Golf course  
- Prom level assets and businesses





# Beeston and West Runton

Holiday  
Parks

Car Park  
and cafe

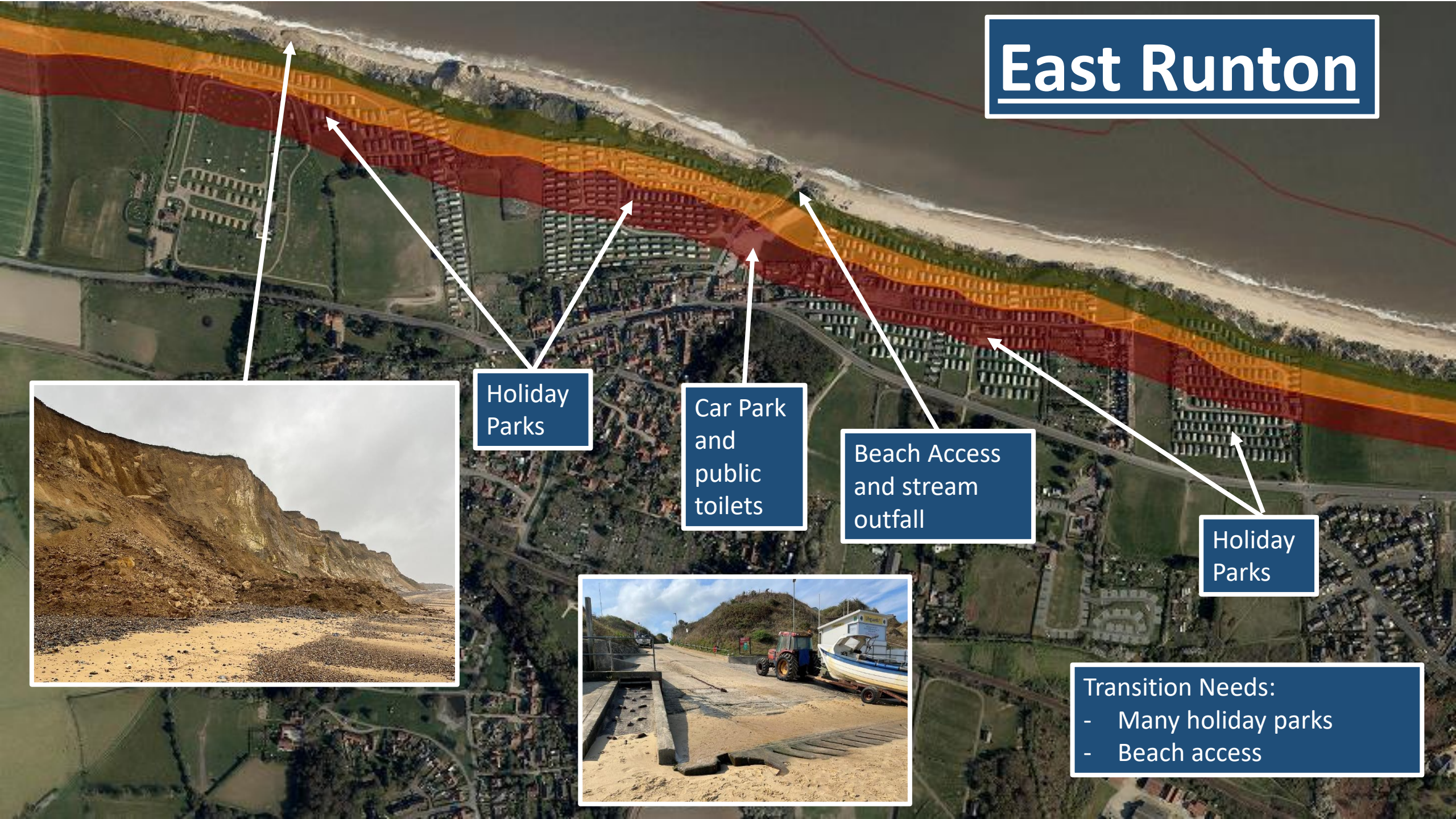
Beach  
Access

England  
Coast Path

## Transition Needs:

- Holiday parks
- Community assets at risk – car park and beach access
- Cafe
- Coast Path

# East Runton



Holiday Parks

Car Park and public toilets

Beach Access and stream outfall

Holiday Parks



Transition Needs:

- Many holiday parks
- Beach access



Car Park

Pier

Coastal Management Scheme planned on frontage for medium term

Beach Access

Beach Huts

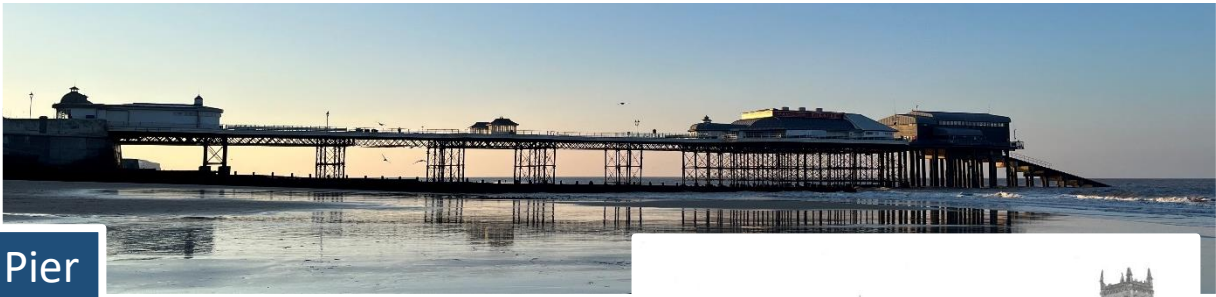
England Coast Path

Public open space and beach access

Homes at Risk

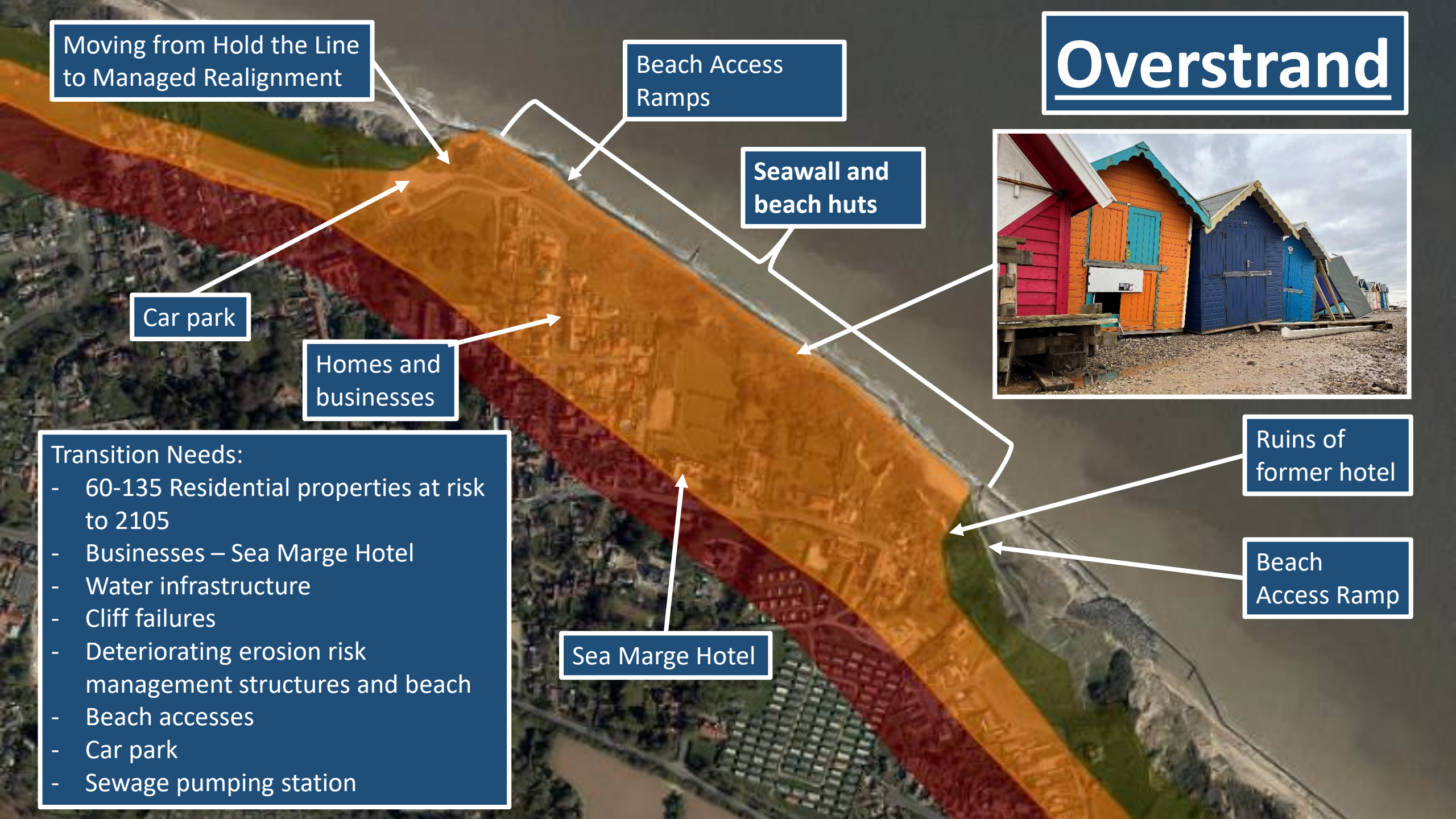
Golf Course and cliff top permissive paths

**Cromer**



Transition Needs:  
- Golf course  
- Permissive cliff top paths and beach access  
- Prom level infrastructure and businesses (including pier)  
- Car park

# Overstrand



Moving from Hold the Line to Managed Realignment

Beach Access Ramps

Seawall and beach huts

Car park

Homes and businesses

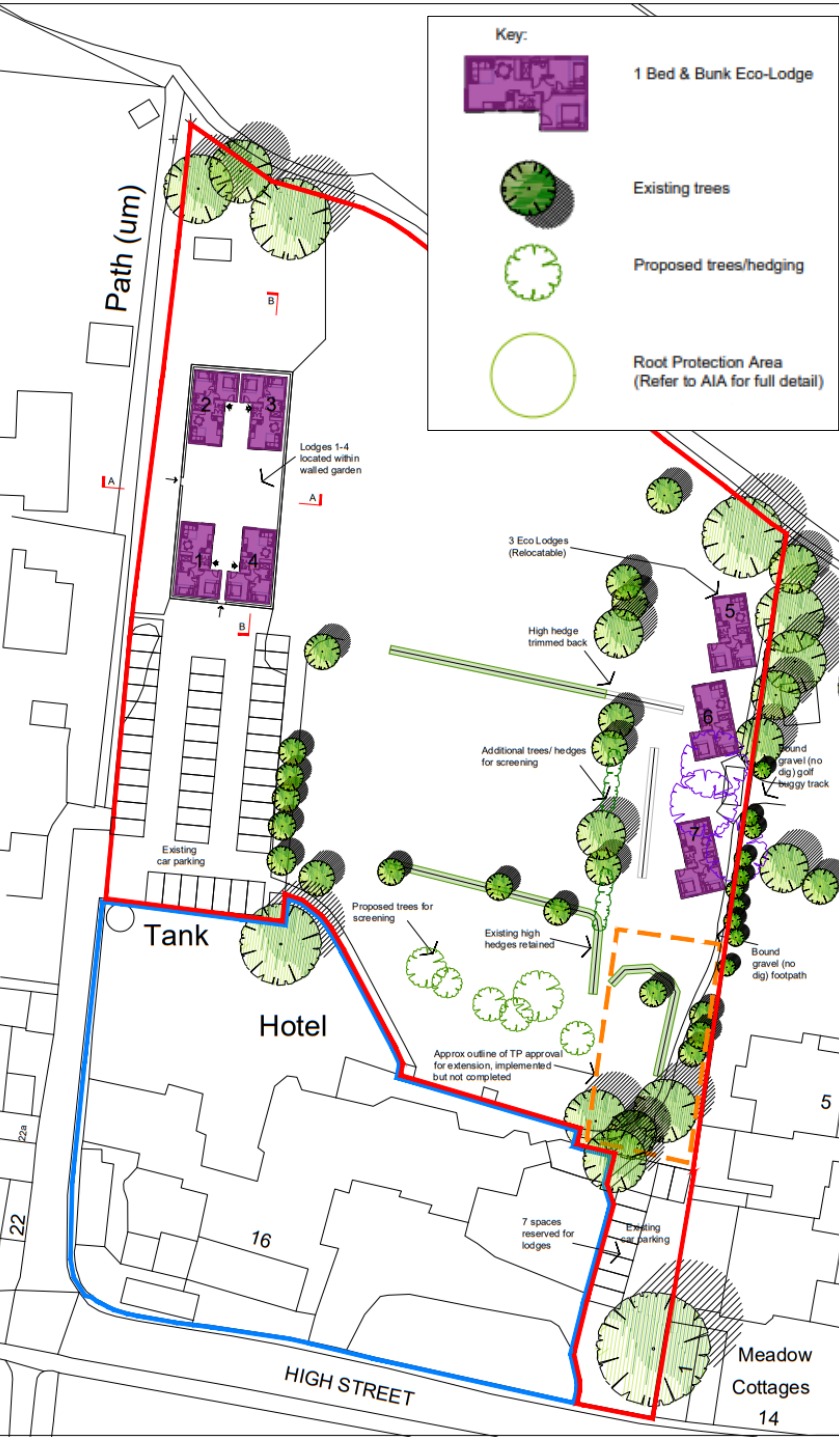


Ruins of former hotel

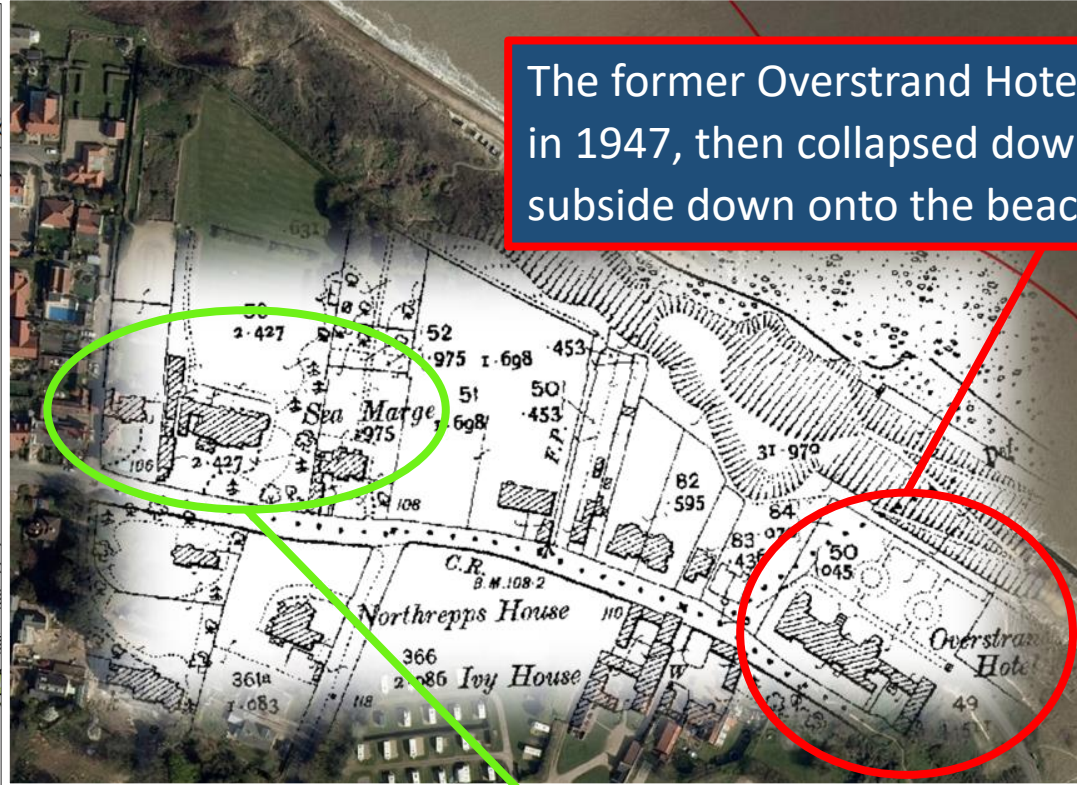
Beach Access Ramp

Sea Marge Hotel

- Transition Needs:
- 60-135 Residential properties at risk to 2105
  - Businesses – Sea Marge Hotel
  - Water infrastructure
  - Cliff failures
  - Deteriorating erosion risk management structures and beach
  - Beach accesses
  - Car park
  - Sewage pumping station



The former Overstrand Hotel, which first burnt down in 1947, then collapsed down the cliff, continues to subside down onto the beach access ramp



The Sea Marge Hotel – Transition Planning

- Historic permission for two storey bricks and mortar extension to rear of hotel
- Hotel is in Epoch 2 (indicative erosion up to 2055)
- Applied for permission to site seven movable lodges in grounds instead of extension.

This was seen as a pragmatic approach to the risk of coastal erosion and in line with an adaptation approach



# Sidestrand



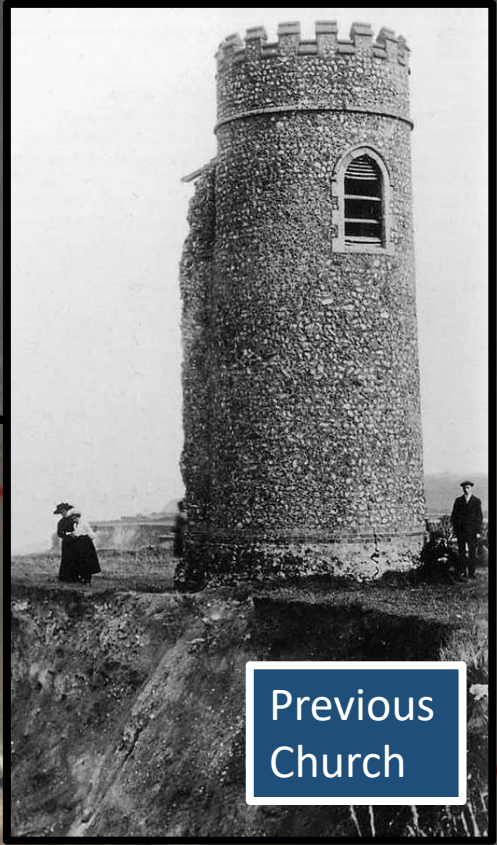
Homes

Agricultural Land at risk

School

- Transition needs:
- School
  - Agricultural land (opportunities?)
  - Coast Path
  - Residential Properties between Sidestrand and Trimingham

Replacement Church - 1881



Previous Church

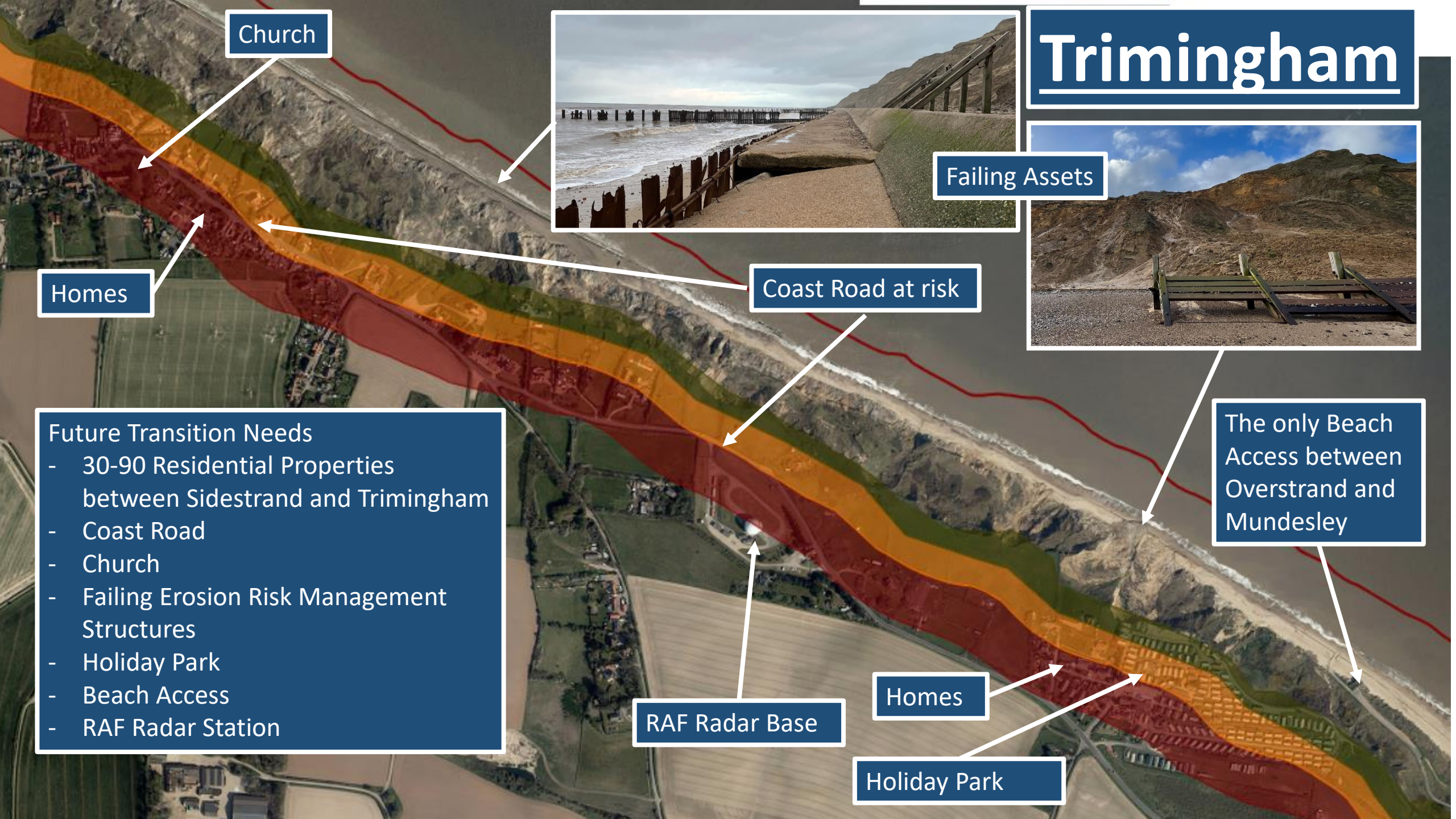
Complex cliffs along North Norfolk Coast



A school, farmland and coast path impacted by coastal erosion at Sidestrand



# Trimingham



Church



Homes

Coast Road at risk

The only Beach Access between Overstrand and Mundesley

- Future Transition Needs
- 30-90 Residential Properties between Sidestrand and Trimingham
  - Coast Road
  - Church
  - Failing Erosion Risk Management Structures
  - Holiday Park
  - Beach Access
  - RAF Radar Station

RAF Radar Base

Homes

Holiday Park





Previous Transition measures:  
- Village Hall relocated  
- Properties privately rolled back



# Mundesley

Holiday Park

Care home

Recent slip

Long-term moving from Hold the Line to Managed Realignment



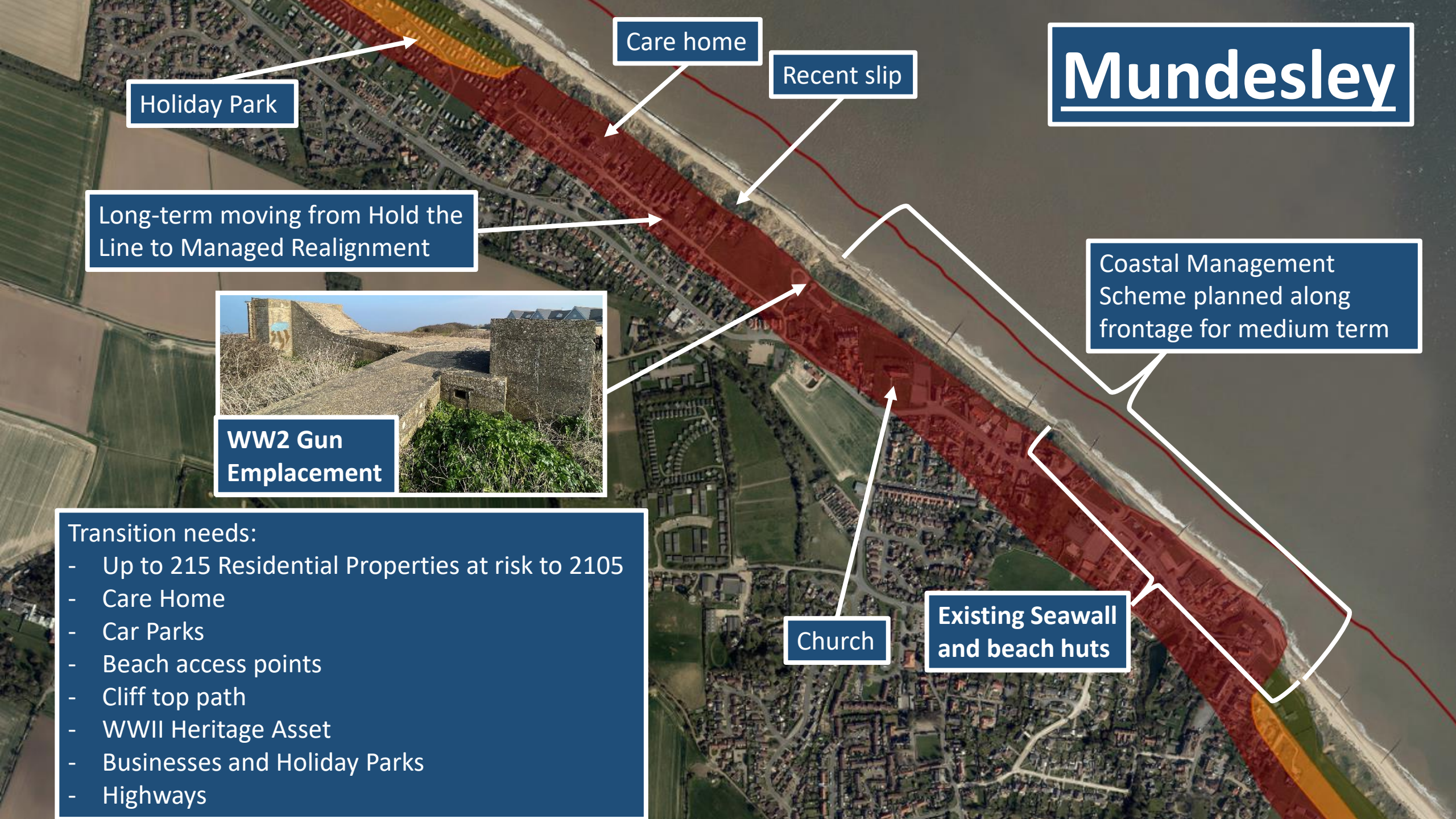
WW2 Gun Emplacement

Coastal Management Scheme planned along frontage for medium term

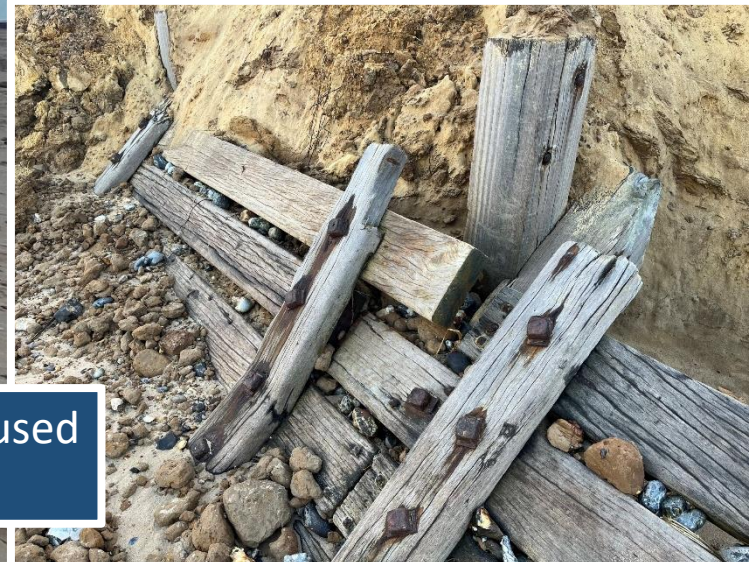
- Transition needs:
- Up to 215 Residential Properties at risk to 2105
  - Care Home
  - Car Parks
  - Beach access points
  - Cliff top path
  - WWII Heritage Asset
  - Businesses and Holiday Parks
  - Highways

Church

Existing Seawall and beach huts



Properties at risk at Mundesley following a cliff slip on Hold the Line policy frontage



Damage caused to defences

# Bacton

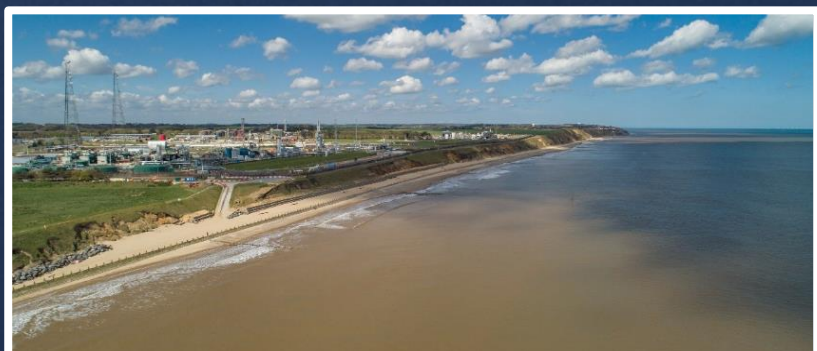
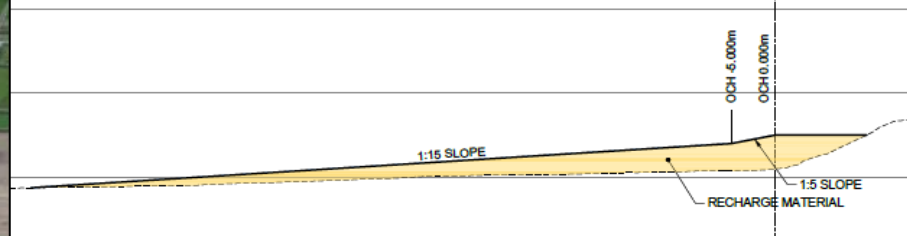
Bacton Gas Terminal

Holiday Parks

- Transition needs:
- Major infrastructure – 1/3 of UK's gas
  - 195-385 Residential properties in Bacton and Walcott
  - Coast Road
  - Businesses
  - Erosion risk management structures



# Bacton to Walcott Sandscaping



**1.8 million m<sup>3</sup> of sediment**

**TERMINAL:**

- Very high protection level
- Re-nourishment interval 15-20 years

**VILLAGES:**

- Higher beaches & slower erosion
- Time for adaptation/transition
- Beaches fed by terminal frontage over time



# Walcott



Sea Wall

Businesses

Coast Road

Homes

- Transition needs:
- 195-385 Residential Properties in Bacton and Walcott
  - Coast Road
  - Businesses
  - Erosion Risk Management Structures



1960s

WALCOTT GAP

24371



# Pre-Sandscaping



2015-2018



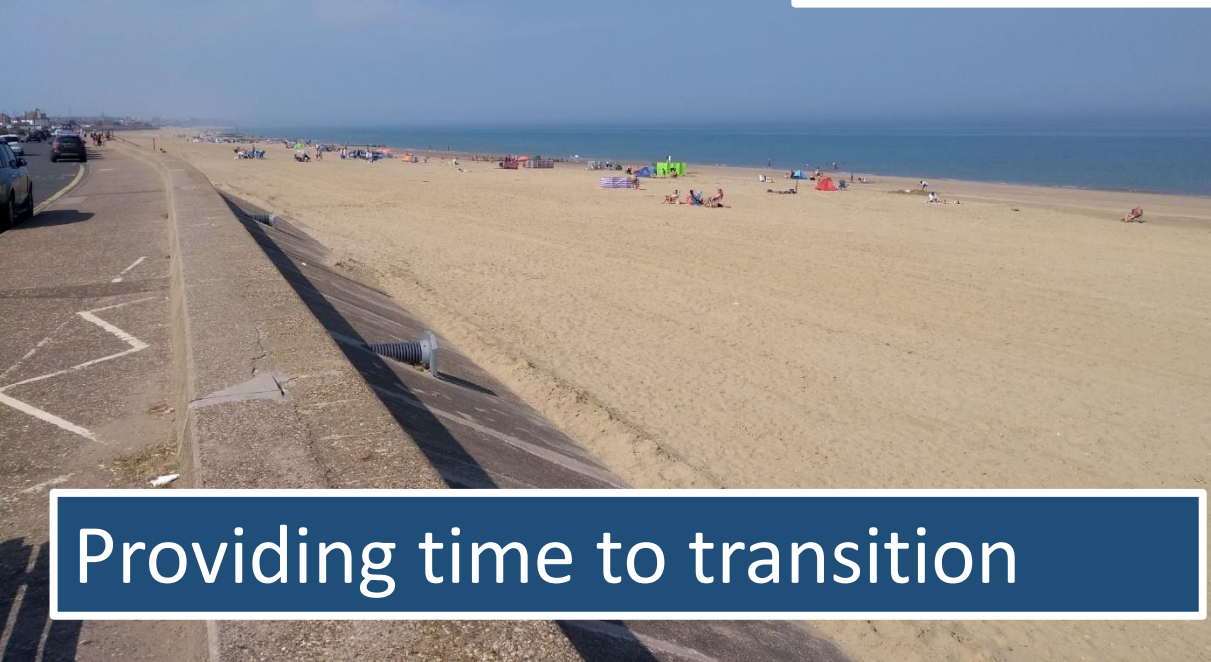


2019



2022

# Post-Sandscaping

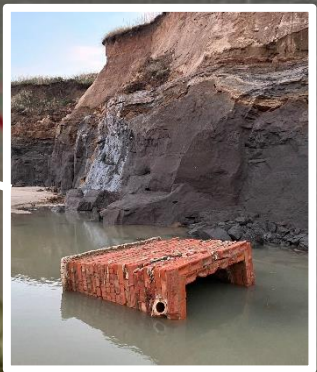


Providing time to transition



# Happisburgh

- Previous Transition:
- 9 properties purchased, demolished and consent for relocation
  - Some failed erosion risk management structures removed
  - Beach debris removed
  - Holiday Park relocated
  - Car Park and public toilets re-provided



Old Holiday Park Site

Homes

Listed Buildings

Church

New Holiday Park Site

- Transition Needs:
- Residential properties at risk
  - Businesses including public house at risk
  - Listed buildings at risk
  - Grade 1 listed church
  - Beach access
  - Failing erosion risk management structures
  - Lighthouse?



Car Park

Beach Access



-Deteriorated risk management structures and beach debris removed over time.  
-Rock berm to 'buy time'





1988



2007



2020

Coastal change at Happisburgh



The location of this holiday home is circled on the previous slide



Relocated holiday park – from a erosion risk zone to a new location







As part of a previous trial, these homes were purchased and a replacement site identified and secured





At risk homes replaced or 'rolled back' with new housing away from the erosion risk zone



# Transition in Action – examples of successful adaptation



Relocation of holiday park – the coast is now open grassland



Relocation of a car park and public toilets

# Coastal Loss Innovative Funding and Financing (CLIFF)

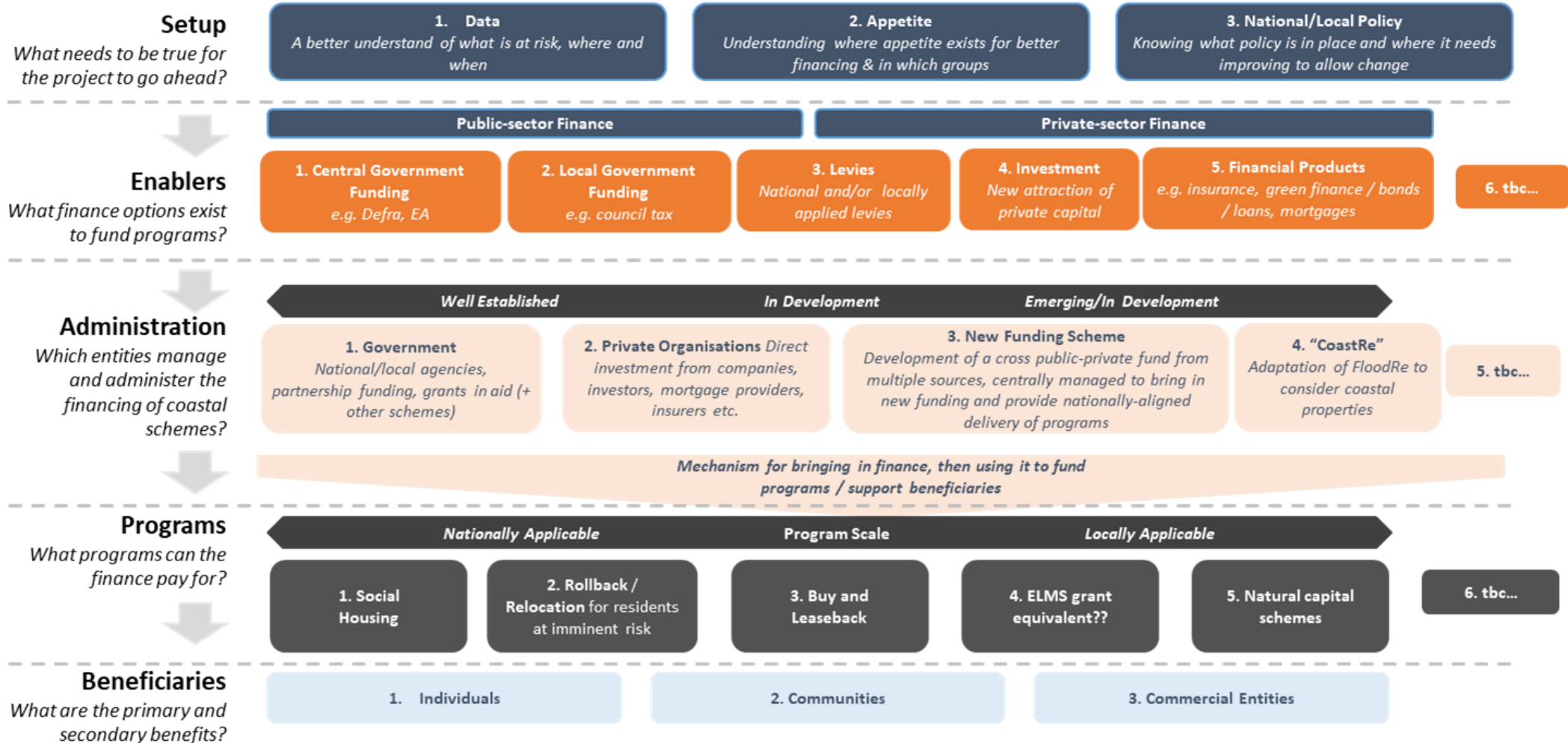
<https://www.north-norfolk.gov.uk/tasks/coastal-management/coastal-loss-innovative-funding-and-financing-cliff/>

- Flood risk properties which would otherwise not have affordable insurance, have insurance due to the success of Flood-Re (up to 2036). Most coastal erosion is not considered insurable
- There are some options which could work to help fund coastal transition
- Better data is essential
- Any option works best at scale
- There is a need to consider pay-outs and pay in mechanisms and scales
- Further work on appetite, equitability and acceptability – politically, providers and end users

		What could eligible properties receive?		
		Tenanted property / shared ownership / affordable housing	Private resident property / land ownership	Cash
Who are the main financial contributors?	Individual homeowners			<b>Coastal Accumulator Fund (1)</b> <i>Homeowners pay into a fund which allows them to recover depreciated property value</i>
	Direct contribution from public or private fund (e.g. tax, levy)	<b>Local Authority Coastal Adaptation Fund (2)</b> <i>Local Authorities Guild fund to support coastal adaptation amongst the most at risk coastal properties</i>	<b>Levy Model (3)</b> <i>Levy raised which is specifically allocated to pay out a cash sum once the property is lost</i>	
	Government (local and/or central)		<b>Rollback Model (4)</b> <i>Demolition of at risk properties and provision of homeowners with the right to develop a plot of land</i>	<b>Compensation Model (5)</b> <i>At risk residents are provided with a like-for-like replacement once their property is lost</i>

**There are options that could be explored further**

# Possible draft 'innovative funding and finance options that could be considered further





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Visit: [www.north-norfolk.gov.uk](http://www.north-norfolk.gov.uk)



Department  
for Environment  
Food & Rural Affairs



Coastal transition accelerator programme

Part of the £200m  
Flood and coastal innovation programmes