

Lincolnshire Coast



Business



Health
& Well-being



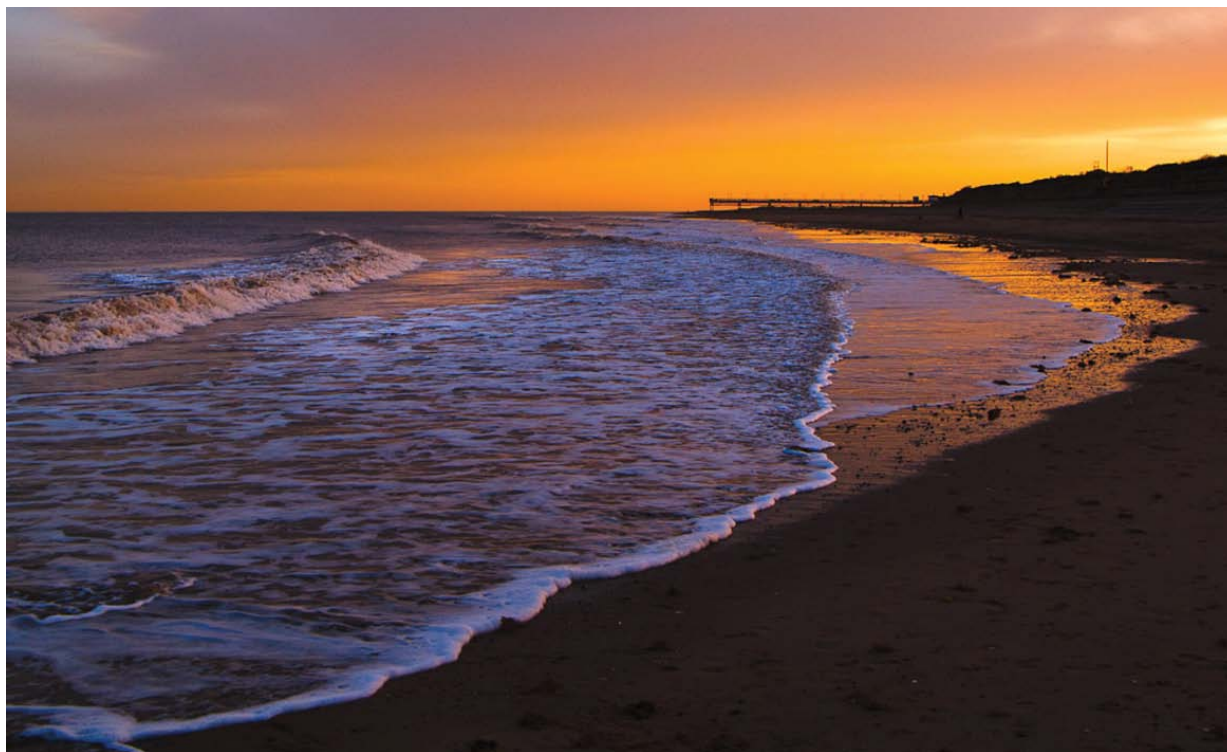
Buildings
& Infrastructure



Agriculture
& Forestry



Natural
Environment



Risk Assessment

Rising sea levels due to climate change pose major long term risks to the people and places along the Lincolnshire Coast. The majority of this huge coastal floodplain is below mean sea level and extends over 10km inland in places. As there are no cliffs, the area depends entirely on man made flood defences

Behind these defences are:

- Over 103,000 properties
- 220,000 people
- 6,000 businesses
- 40,000 caravans (the largest concentration in Europe)
- 170,000 hectares of mostly Grades 1 & 2 agricultural land producing & processing up to 40% of the UK's fruit and vegetables.
- Internationally and nationally important nature conservation sites.

How were the risks identified?

The Lincolnshire coast is naturally low-lying and is highly exposed to the North Sea. Therefore the risk of coastal flooding has historically been a significant issue for this coastline.

In 2008 Central government asked for more research about that risk and the implications for sustainable development on the coast, particularly in the face of predicted sea level rises, as a result of climate change.

The Lincolnshire Coastal Study was commissioned to look into these matters, and work was undertaken by a multi-stakeholder steering group (Lincolnshire County Council, East Lindsey District Council, Boston Borough Council, South Holland District Council, the Environment Agency, Natural England and the Regional Assembly). Atkins Consultants were employed between January 2009 and March 2010 to lead this work.

The Great Flood of 1953

On the eve of 31 January 1953 Lincolnshire's coastal sea defences were overtopped and washed away by a tidal surge. There were 22 major breaches in the flood defences, and more than 100 smaller breaches. Water depths reached 2.1 metres in some locations and spread nine km inland. Wind speeds reached nearly 120mph. 42 people died in Lincolnshire and the financial cost ran into millions. Thousands of people were unable to return to their homes for many months.

This event was the worst recorded civil disaster this country has seen (other than war), affecting not only Lincolnshire but numerous other communities along England's east coast. Since 1953 there has been similar high tides and wind speeds hitting the east coast, resulting in localized flooding (for example Great Yarmouth 2007). Because of the investment in sea defences there has not been a repeat of the 1953 flood since.



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Impact example: East Midlands

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The Current Level of Risk

The Lincolnshire coastline is generally well protected to a good standard, with the majority of defences reducing the risk of flooding to 0.5% (1 in 200) chance in any given year

Flood hazard mapping of the Lincolnshire coast and its communities has assessed the current (2006) and future (2115) levels of hazard to people if the coastal and tidal defences were breached or overtopped.

Over 40,000 properties are located in the 'Danger for All' and 'Danger for Most' hazard rated areas (Red and Orange zones).

What changes are expected?

The latest UK Climate Projections (UKCP09) highlight that climate change will increase sea levels. The absolute sea level rise by 2095 attributed to climate change is a range between 13–76 cm (based on a medium emissions scenario not including land movement).

How are people affected?

The areas at greatest flood hazard are located directly behind the defences. These areas contain large numbers of people, properties, communities, tourist resorts and caravans. A multiple breach scenario in the defences could potentially bring loss of life and widespread destruction.

The Lincolnshire coast has a very large proportion of retired and elderly residents. This is likely to increase the risk of fatalities in an event.

How is the risk being addressed?

The Lincolnshire Coastal Study produced and evaluated a set of long-term options for the sustainable spatial development of Lincolnshire's coastal communities. A series of principles to guide spatial development and options

for new development in the study area, taking into account flood risk, have been developed and evaluated using sustainability criteria. The principles and options were generated through a series of workshops with a wide range of stakeholders. The Lincolnshire Coastal Study is being used as a scientific evidence base in the development of local plans for the areas concerned.

The Lincolnshire Coastal Pathfinder

Lincolnshire County Council were awarded £810,000 from central government for a series of coastal change pathfinder projects that ran from 2009 - 11. These involved:

- Working with the local community to equip them with knowledge and information on flood risk.
- Undertaking a project with the community of Mablethorpe to improve involvement in adaptation planning.
- Improving knowledge of the "hidden" community of caravan occupants to improve ways of engaging with them in future.
- Adaptation planning: developing potential spatial planning options through the Lincolnshire Coastal Study.
- Developing comprehensive evacuation plans.
- Introducing a single 'Innovation Learning and Development' programme to bring together expertise and innovation on coastal change adaptation.
- Delivering adaptive solutions: promoting uptake of property resilience measures for future and existing development.

What are the next steps?

Lincolnshire County Council, local coastal Authorities, the Environment Agency and partners

For more information:

Lincolnshire Coastal Study
<http://www.lincolnshire.gov.uk>

Lincolnshire Coastal Change Pathfinder
<http://www.defra.gov.uk>

are continuing to work together to support coastal communities, businesses and caravan parks to help take steps to prepare themselves for coastal flooding.

Lincolnshire has also created a Flood Risk and Drainage Management Framework, which is designed to provide co-ordinated management and delivery of flood risk and drainage functions of all relevant organisations across Lincolnshire. The framework implements the recommendations of the Pitt Review and the provisions of the Flood and Water Management Act 2010 in a way that is tailored to suit the geographical, social, economic and environmental characteristics of Lincolnshire. Its purpose is to ensure that local communities and infrastructure are better protected from all types of flooding, and that improved resilience towards flooding is built into all aspects of planning and service provision in the future.

Information sources: Lincolnshire County Council, Environment Agency and Defra