



# Thames Estuary 2100

## An overview of the Thames Estuary 2100 Plan

December 2019

The Thames Estuary 2100 Plan (the Plan) sets out a recommended approach for managing increasing tidal flood risk in the face of a changing climate, aging flood defences and a growing and changing estuary. The Environment Agency worked with partners to develop the Plan, which was published in 2012, and sets out how authorities, businesses and communities and can work together to manage tidal flood risk until the end of the century and beyond.

The risk to the estuary from tidal flooding is significant. More than 1.3 million people and £275 billion worth of property and infrastructure in London, Essex and Kent is at risk of regular flooding from the sea. A world-class system of flood risk management assets (or defences) work together to reduce this risk, including the Thames Barrier and 8 other flood barriers, over 350km of walls and embankments, and more than 400 flood gates, outfalls and pumps.

However, as these structures age, sea levels rise and the population grows, it is important we plan now to ensure that London and the Thames Estuary can continue to be resilient to tidal flooding into the future. The Thames Estuary 2100 Plan gives planners, place-makers and local communities an opportunity to think and plan for future changes to their riverside. Its aims are wider than just managing tidal flood risk, and include:

- managing the risk of flooding to people, property and the environment
- adapting to the challenges of climate change
- ensuring sustainable and resilient development in the floodplain
- protecting the social, cultural and commercial value of the tidal Thames, its tributaries and floodplain
- enhancing and restoring ecosystems



**Thames Estuary 2100 Plan area, from Teddington in the West to Sheerness and Shoeburyness in the East**

## An adaptive plan: monitoring and adapting to change in the Thames Estuary

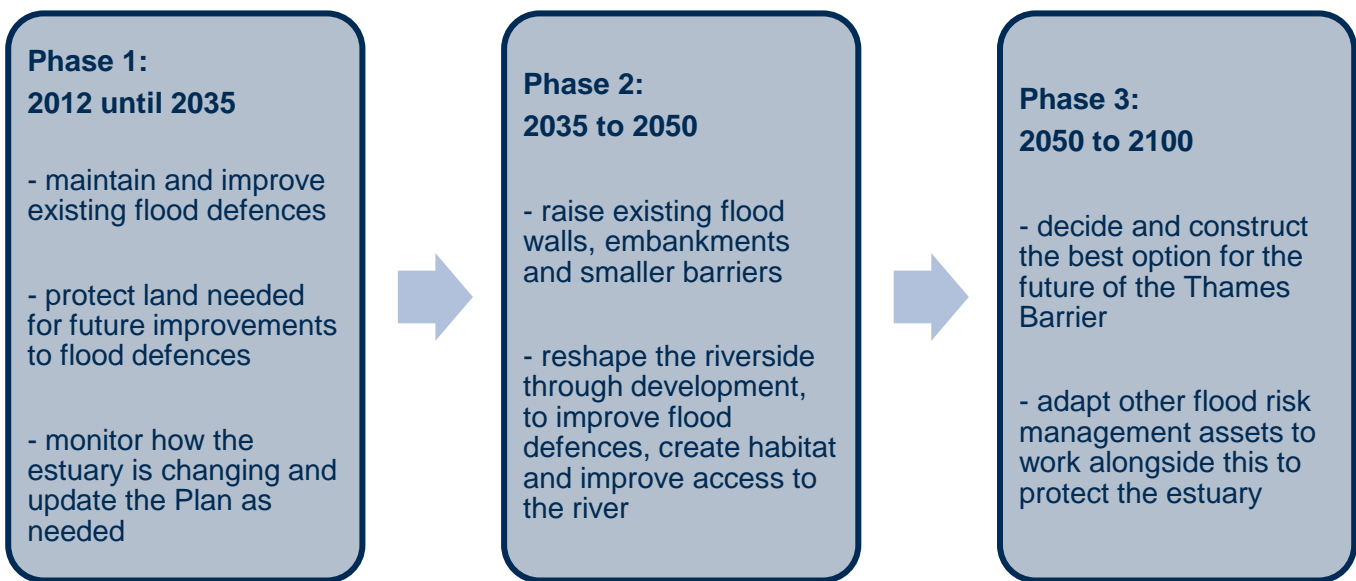
The Thames Estuary 2100 Plan is internationally recognised as a leading example of climate change adaptation, as it was designed to be adaptable to different projections for sea level rise.

When the Plan was developed in 2009 it used the latest climate science available at the time, as well as independent research on changes to fluvial (river) flows, tidal storm surges, and sea-level rise. However, the team developing the Plan recognised that there was, and still is, significant uncertainty surrounding climate change, and addressed this by recommending that the pathway to providing resilience is adjusted as the climate changes and we develop our understanding of the impacts it will have on the Thames Estuary. To do this, we monitor 10 indicators of change in the estuary and carry out reviews of the Plan every 5 years (review of indicators) and 10 years (full review and Plan update).

The adaptable nature of the Plan means that key decisions such as on the preferred option for replacing the Thames Barrier, should not be taken until they need to be. Currently we expect the Thames Barrier to continue to protect London until 2070, and therefore we do not expect to take a decision on the preferred option until around 2050. We will continue to monitor this and bring this date forward if we need to.

### A 3-phase plan

The Thames Estuary 2100 Plan has 3 phases, each with different actions:



### Costs and benefits

When the Plan was developed it was expected to cost £3.3 billion to maintain and improve the current tidal flood risk management assets in the Thames Estuary until 2050. However, the benefits are significant. As well as protecting 1.3 million people and £275 billion worth of property, the Thames Estuary provides critical energy, transport and water needs, supporting London and the South East. There is also significant development planned in the estuary over the next few years, as set out in the Mayor's London Plan and the Thames Estuary Growth Commission report, released this year.

The Thames Estuary 2100 Plan will be funded according to the partnership funding principles. A key source of the funding will be from central government grant-in-aid. However we will need to make up the remaining funding through contributions from beneficiaries and riparian owners. We are exploring opportunities for collaboration and delivering wider benefits, which will help meet the wider aims of the Thames Estuary 2100 Plan and bridge the funding gap.

## Key areas of work for 2019/20

### Maintaining and improving flood defences

The Environment Agency formed the Thames Estuary Asset Management 2100 (TEAM2100) programme in 2014 with Jacobs, Balfour Beatty and other suppliers. The programme will run for 10 years and addresses the challenge of ageing flood defences, by investigating, refurbishing and improving assets across the estuary, to maintain the current standard of protection from tidal flood risk.

The programme is the UK's largest single programme of flood risk management work, valued at over £300 million in total, and is one of the government's top 40 major infrastructure projects. We are now in the fifth year of the programme, which has already invested significantly in defences across the estuary. This includes major refurbishment works to the Thames Barrier and Barking Barrier, and various flood wall refurbishment and replacement projects. Further works planned include realigning defences in the outer estuary and further flood wall and embankment refurbishment.

### Planning for the future of our riverside

The Environment Agency takes a lead role in managing the Thames Estuary 2100 Plan, but we need to work with riparian owners, flood risk management authorities, and planners to successfully deliver many of the recommendations.

In particular we rely on councils, who often have the greatest power to influence future riverside development through their spatial planning role. They can ensure that our future riversides can continue to manage tidal flood risk whilst providing wider social, environmental and economic benefits – taking a riverside strategy approach. Each council has a set of objectives for delivering the Thames Estuary 2100 Plan, including:

- updating strategic planning documents, such as local plans and strategic flood risk assessments, to include Thames Estuary 2100 messages
- requiring developers to improve flood risk management assets through development
- safeguarding land for future flood management
- agreeing riverside habitat enhancements through development
- taking a riverside strategy approach to planning for the future of their riverside, which incorporates improvements to flood risk management assets with the wider social, environmental and commercial enhancement of the riverside.

### Monitoring change and updating the Plan

We published the outputs of the first 5-year review in October 2016, which showed that changes in the estuary were generally taking place as the developers of the Thames Estuary 2100 Plan had predicted.

We have now started the first 10-year review. As part of this we will review the adaptive pathway we are following in light of the latest climate science, update costs and benefits, and revise the recommendations made in the Plan accordingly. This will be a major project and we are looking to develop an updated Thames Estuary 2100 Plan by 2022. It is also an opportunity to bring our partners and communities closer to the decision making, and develop a product that is more user-friendly and fit for future generations. We will be contacting partners and engaging with stakeholders throughout 2020 to discuss how they might want to get involved.

#### Contact the team

For more information or to find out how you can get involved in Thames Estuary 2100, contact the team at [thamesestuary2100@environment-agency.gov.uk](mailto:thamesestuary2100@environment-agency.gov.uk).