

TE2100 action plan: **action zone 8** – Seaside/fishermen’s frontage

Action plan for zone 8 – table A.8.

Nine actions identified

Description of the policy units

■ Leigh-on-Sea & Southend-on-Sea

Table A.8. describes the nine actions for zone 8 – Seaside, fishermen’s frontage which have been identified through the TE2100 Plan. The actions are described under the following headings:

- TE2100 recommended actions (and whether or not costs for this have been included in the TE2100 Plan)
- Implementation partners
- How this will be achieved
- How your response can help us finalise the TE2100 Plan



Do you consider that we have identified the right strategic options for managing tidal flood risk in the Thames estuary, and do you agree with the final preferred options?



Do you agree with the actions identified in our action plans and the timing of those actions?



Do you agree with the mechanisms we have set out to deliver the action plans?



Have we identified the right partner organisations to deliver our action plans and are you, or your organisation, able to contribute to these actions?

Policy unit – Leigh-on-Sea & Southend-on-Sea

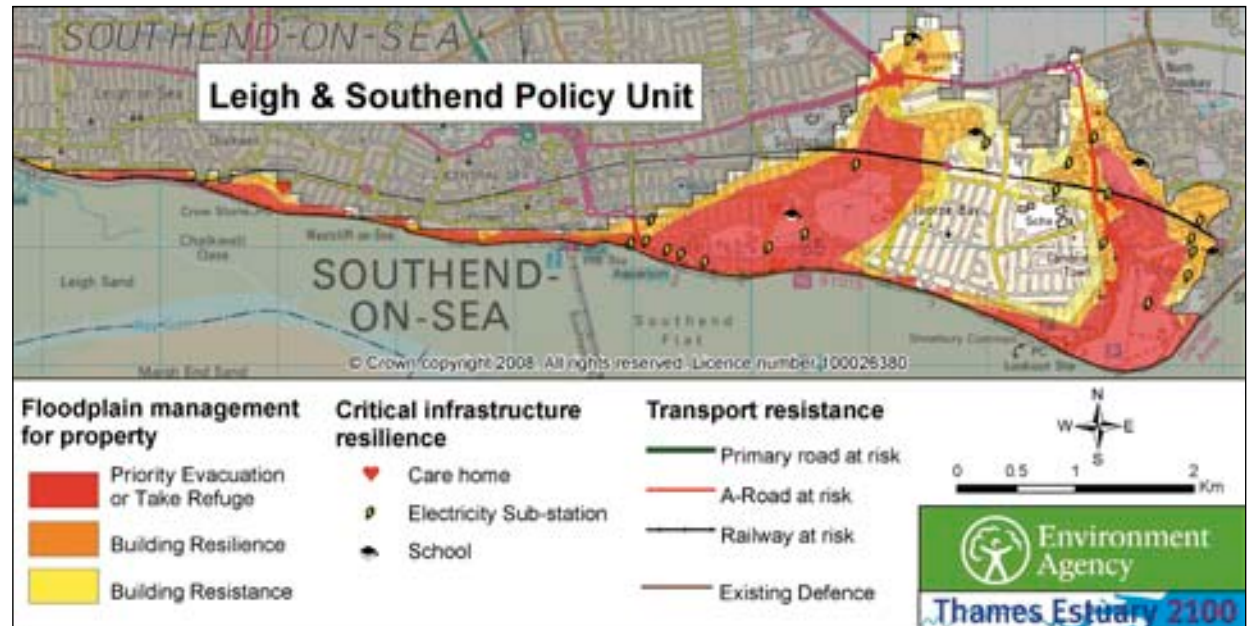
Policy: Our recommended flood risk management policy for Leigh-on-Sea & Southend-on-Sea is policy **P4**, to take further action to sustain the current level of flood risk into the future (responding to the potential increases in risk from urban development, land use change and climate change).

Description

Southend-on-Sea (including Westcliff-on-sea) and Leigh-on-Sea are distinctly different areas, and are considered separately.



The seafront



At risk in Leigh & Southend policy unit

Southend-on-Sea has a continuous sea frontage with beaches and very extensive (designated) intertidal areas and a pier. Whilst most of Southend-on-Sea is on high ground and not at risk from tidal flooding, much of the sea front is at risk of flooding and there is a flood defence along the entire frontage.

There are five schools, six care homes and 21 electricity sub stations within the flood risk area. This is an important amenity and recreation area, with a parallel road and footpaths along much of the frontage. The two main areas of floodplain are to the east of the city centre.

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The beach at Southend-on-Sea

The number of properties at risk is relatively small but, as the standard of protection is lower than elsewhere on the estuary, the flood risk is relatively high at 0.5% (or 1:200) per annum or greater compared to the general standard of 0.1% (or 1:1,000) elsewhere in the estuary.

Leigh-on-Sea has a narrow but historic frontage bounded by the railway line to the north. It has close links with the estuary with a strong fishing tradition, and floodplain management is practised to avoid creating a barrier between the village and the Estuary.

This means that the defence level is low and properties have been built with raised thresholds

and other resilience measures to protect against tidal flooding. There is evidence that more recent riverside users are unaware of this and stock for shops is stored in the floodable area.

Sources of flooding

- Tidal from the Thames (probability 0.5% per annum or greater), flood depths up to 4 m but very variable.
- Fluvial from local watercourses including Prittle Brook.
- Local drainage: Not investigated in TE2100.

The existing flood risk management system

- Tidal flood defences on the Thames including revetment and wave walls.
- Beaches with associated groynes to improve the frontage and mitigate the impacts of wave action. Beach recharge has been recently used to build up the beach and reduce the effects of wave action.
- Drainage system outfalls including Prittle Brook.
- Receptor responses in Leigh-on-Sea including resilient buildings and measures for rapid drainage of tidal flood water.

Policy context

This policy unit overlaps with the Essex SMP (Shoreline management Plan) currently in

development. It is essential that there is good communication between TE2100 and the Essex SMP to ensure that there are no conflicts in the flood and coastal management policies and action plans developed by these two strategies.

Re-activation of the waterfront at Southend-on-Sea is included in the Thames Gateway Parklands vision, which also identifies the importance of the historic urban environment in the vicinity of Southend Pier.

It is likely that the Southend-on-Sea frontage will continue to be developed and improved as it is an important leisure and recreation area.

Raising of defences would affect the close link between the fishing community at Leigh-on-Sea and the Estuary. The intention of the TE2100 Plan would be to minimise visual impacts on Leigh-on-Sea as much as possible by implementing further floodplain management measures.

Reducing potential flood impacts with local resilience measures is already practised in Leigh-on-Sea, where flood boards are used together with means of allowing the area to drain of tidal water in the event of inundation. Any new development should also be designed so that the potential flood impacts are minimised and a programme

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of public information is required to ensure that residents are aware of these floodplain management arrangements.

Vision

Improvements to the flood risk management system should provide amenity, recreation and environmental enhancement, and be designed to minimise any adverse impacts on the frontage whilst supporting and enhancing the fishing industry activities.

Local issues and choices

Raised and new defences on the Southend-on-Sea frontage should be designed so that:

- They do not encroach into the Estuary.
- The raised part of the defences could consist of a new defence on a new alignment behind the sea front where space permits (for example, park areas) so that the heights of walls on the sea front are limited.
- Walkways are raised to provide sea views, and access points are improved.
- Demountable defences and gated access points may be included in the designs in some areas providing that satisfactory arrangements can be made for security of closure.

The Southend-on-Sea frontage is subject to wave attack and overtopping. Beach recharge has been

implemented both to improve the beach and reduce the impacts of waves. Improvements to this approach would reduce the need for defence raising.

Local cockle fishermen have particular problems relating to siltation in and around Leigh-on-Sea. It is recommended that this should be included in any local morphological investigations relating to beach recharge.

Responses to mitigate the impacts of the estuary on local flooding may be needed, including improvement of outfalls, although this has not been investigated in TE2100.

Choices for local flood risk management have not been designed or assessed in detail, and will be the subject of consultation and subsequent appraisal.



The seafront at Leigh-on-Sea



Do you understand our assessment for the Leigh-on-Sea & Southend-on-Sea policy unit?




Do you agree with it?



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Table A.8. – Policy units ■ Leigh-on-Sea & Southend-on-Sea policy unit **P4**

[Note that all dates are based on government’s current guidance on climate change – the TE2100 Plan will be reviewed and updated if these predictions change]



	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.8.1. TE2100 Plan informs the development and revision of local authority strategic flood risk assessments (SFRAs) and flood plans.</p> <p><i>(Cost of implementing this action not included in TE2100 Plan, but TE2100 data and information will be available to support the action)</i></p>	<p>Environment Agency Southend-on-Sea Borough Council Essex SMP (shoreline management plan) Client Steering Group Essex Resilience Forum</p>	<p>TE2100 information is provided to Southend-on-Sea Council for its flood plan and capability testing.</p> <p>Local authority flood plan is developed with an understanding of TE2100 recommendations and data.</p> <p>Local Resilience Forum takes ownership of the flood plan and all responders have confidence in it.</p> <p>A community engagement programme to ensure the public, businesses and other groups understand, are involved in and supportive of the flood plans.</p>	<p>Implementation partners: Do your flood plans include the findings and recommendations from TE2100? Do you have enough information from us to develop your flood plans so that they can be informed by TE2100? Your response will guide the development of our implementation “blueprint” during 2009 and improve arrangements for partnership working.</p> <p>Landowners, the public, business and other interested groups: Thames tidal defences provide highly reliable protection to Southend-on-Sea against surge tides. But should there be a failure of a defence or an extreme event which overtops the defences, low-lying areas of Southend-on-Sea and Leigh-on-Sea would be at risk as shown on the policy unit At Risk maps. The Flood Plans will set out arrangements for managing this sort of emergency. If you have views on this, please let us know and we will share your views with those responsible for preparing the flood plans.</p>

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	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.8.2.</p> <p>To agree a programme to provide local flood protection, resilience and emergency plans for vulnerable key sites in action zone 8.</p> <p>Our At Risk maps for Leigh-on-Sea and Southend-on-Sea show that particular sites and key infrastructure which would be vulnerable in the event of a failure or overtopping of the defences. Areas of the Southend-on-Sea sea front are on the seaward side of the defended area and Leigh-on-Sea seafront is likely to flood during normal high tides. It is important that residents, businesses and visitors are aware of this and the measures they should be taking for their own protection.</p> <p><i>(Cost of implementing this action not included in TE2100 Plan, but TE2100 data and information will be available to support the action)</i></p>	<p>Environment Agency</p> <p>Local Authority</p> <ul style="list-style-type: none"> • Southend-on-Sea BC <p>Essex Resilience Forum</p> <p>Developers and vulnerable site owners/ managers</p>	<p>We will discuss with our implementation partners to agree strategic scope of measures required, informed by information from TE2100 (see at risk maps).</p> <p>Agreement between implementation partners on the strategic approach, and roles and responsibilities for achieving it.</p> <p>All site owners must be supportive of approach and confidence of public and users maintained. Local floodplain management measures in place or planned within 25 years.</p>	<p>Implementation partners:</p> <p>Are you aware of the risks and particular vulnerability of key sites in this action zone? Do you have arrangements in place for initiating the discussion concerning scope of works required for the properties/ areas in which you have an interest? Can the Environment Agency assist with this through implementation of action A.8.2?</p> <p>Landowners, the public, business and other interested groups:</p> <p>We would be interested to hear your views to assist us in planning the implementation of this action A.8.2. particularly if you live, work or have interests in this area.</p>
	<p>A.8.3.</p> <p>To agree partnership arrangements and principles to ensure that new development in Seaside and Fishermen’s frontage zone 8 is safe, and that where possible the application of PPS25 reduces the consequence of flooding.</p>	<p>Environment Agency</p> <p>Essex CC</p> <p>EEDA, EERA</p>	<p>TE2100 Plan and associated information informs developing Local Development Frameworks (LDF) and future revisions.</p>	<p>Implementation partners:</p> <p>Are your LDFs supported by sustainability appraisals that include local tidal flood risk and the implications of climate change? If not, does the TE2100 Plan provide you with the information you need to do this? If we draft guidance on the interpretation of PPS25 in a defended area, what sort of information would be most helpful to you?</p>



(continued)

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	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
 <p>First 25 years</p>	<p>A.8.3. (continued) Environment Agency and local authority staff are providing advice to Developers and responding to difficult Planning applications. For flood risk management to be factored into the planning process at all levels for the first 25 years from 2010 to 2034, there is need for greater clarity over methods and procedures for safety in new development behind defences.</p> <p><i>(Cost of implementing this action not included in TE2100 Plan, but TE2100 data and information will be available to support the action)</i></p>	<p>Local Authority spatial and emergency planners:</p> <ul style="list-style-type: none"> • Southend-on-Sea <p>Thames Gateway Essex Partnerships</p> <p>Developers and site owners</p>	<p>Local authority and Environment Agency Planning staff require guidance for applying the principles of PPS25¹² to a defended tidal floodplain.</p> <p>We along with our implementation partners and CLG will develop guidance for development in a defended tidal floodplain.</p>	<p>Would you be able to assist the Environment Agency in preparing this guidance – and would it be useful to you?</p> <p>Landowners, the public, business and other interested groups: We would be interested to hear your views to assist us in planning the implementation of this action A.8.3. particularly if you have had experience (good or bad) of dealing with us and other authorities over planning and building by the river and in the defended tidal floodplain.</p>
 <p>Middle 35 years</p>	<p>A.8.4. To review and maintain from 2035 to 2069, the partnership arrangements and principles for development and flood risk management established in the first 25 years of our Plan.</p>	<p>As above</p>	<p>Guidance is updated to reflect changing needs. The TE2100 10-yearly update to include review of action A.8.3. and recommend any changes or developments.</p>	<p>We cannot know what institutional arrangements will be in place during this period or what pressures there will be on the environment. We do know that for the Leigh-on-Sea and Southend-on-Sea to continue to thrive and for regeneration to be a success, flood risk management must continue to be integrated into the spatial planning process. If you would like to help shape the development of these arrangements during the middle years (2035 to 2069) of our Plan, then please let us have your views.</p>

¹² Planning Policy Statement No. 25 “Development and Flood Risk” (CLG 2006)


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	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.8.5. To review and maintain from 2070 and into the 22nd century, the partnership arrangements and principles for development and flood risk management established in the middle years of the Plan.</p>	As above	TE2100 10-yearly update to include review of action A.8.4. and recommend further action. Guidance is updated to reflect changing needs.	Flood risk management continues to be integrated into the spatial planning process into the 22nd century. If you have views on how the relationship between spatial planning and flood risk management should be developing in the Seaside Fishermen’s frontage zone as we prepare for the 22nd century, then please respond to this action A.8.5.
	<p>A.8.6. To maintain, enhance, improve or replace, the river defence walls, active structures and beach nourishment schemes in Seaside Fishermen’s frontage zone 8 over the first 25 years of the Plan from 2010 to 2034.</p> <p>This is a continuation of our current activities to ensure that confidence in the Thames tidal flood risk management system is maintained and that opportunities for environmental enhancements and partnership through planning are actively sought and carried out.</p> <p><i>(Cost of implementing this action is included in TE2100 Plan)</i></p>	<p>Environment Agency Essex CC Local Authority spatial and emergency planners</p> <ul style="list-style-type: none"> • Southend-on-Sea <p>Essex SMP (shoreline management plan) Client Steering Group Thames Gateway Essex Partnerships Developers and site owners Thames Strategy East</p>	<p>Our Planning Liaison and Development Control staff will promote these works as part of ongoing development applications.</p> <p>Our Asset System Management teams will promote these schemes. However, the method of improving the defences is different from the present day approach. It involves greater maintenance and repair work in addition to replacement. Promotion of schemes through the capital programme may not be appropriate for maintenance and repair, and a different way of working may be required.</p>	<p>This is the work which we do now in the Environment Agency. We will continue with our programme of operations, maintenance and replacement but we are looking for ways of working better and more effectively.</p> <p>We are also seeking opportunities for environmental and recreational enhancements which will create a better place through the Seaside/Fishermen’s frontage zone, and for partnerships which will help us achieve this. We also need to understand better how changes to the frontage defence arrangements can help local businesses and the fishing industry.</p> <p>We would welcome any comments that you or your organisation can provide which assist us in these aims.</p> <p>Our TE2100 Technical Report and local choices documents for the policy units provide our assessment of the choices which are available in the Seaside Fishermen’s frontage zone 8 in the short term. If you would like to comment on these in more detail, please contact the project team.</p>


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	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.8.7. To maintain, enhance and improve or replace the defence walls, active structures and beach nourishment schemes through Seaside Fishermen’s frontage zone 8 during the 30 year period of the Plan from 2035 to 2065.</p> <p>The defences at Southend-on-Sea will require raising during the period covered by the TE2100 Plan. Any raising of the defences should include ground raising and landscaping so that the public can view the estuary; public access to the beaches and foreshore is not impaired; the defences blend with the sea front environment and do not form a barrier between the urban area and the estuary; and opportunities are taken to enhance the sea frontage landscape and access when the defences are improved.</p> <p>The defences at Leigh-on-Sea may not be raised in order to maintain the link with the estuary, but floodplain management measures will be needed to control the flood risk.</p> <p><i>(Cost of implementing this action is included in TE2100 Plan)</i></p>	<p>Environment Agency Essex CC EEDA, EERA Local Authority spatial and emergency planners: • Southend-on-Sea Essex SMP (shoreline management plan) Client Steering Group Thames Gateway Essex Partnerships Developers and site owners Thames Strategy East</p>	<p>Our Planning Liaison and Development Control staff will promote these works as part of ongoing development applications.</p> <p>Our Asset Systems Management teams will promote schemes through capital programme and they will form part of strategic and investment plans subject to replacement/repair working arrangements as A.8.6. above.</p> <p>There are major opportunities for reshaping the local landscape as part of these works.</p>	<p>Our aims remain as A.8.6. above, but during this period, there will be a major programme of rebuilding and refurbishment of the river walls and defences through the Seaside Fishermen’s frontage zone 8. This provides many opportunities for creating a better place and to plan for a better riverside environment. We also need to understand better how changes to the frontage defence arrangements can help local businesses and the fishing industry.</p> <p>If you would like to help shape the future environment in these areas, then please let us have your views on this action A.8.7.</p> <p>Our TE2100 Technical Report and local choices documents for the policy units provide our assessment of the choices which are available in the Seaside Fishermen’s frontage zone in the medium term (2035 to 2069). If you would like to comment on these in more detail, please contact the project team.</p>

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	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.8.8. To maintain, improve, enhance or replace the river defence walls, active structures and beach nourishment schemes through lower Estuary zone 8 post 2070 and into the 22nd century.</p> <p>These are the TE2100 “end of the century” raising of defence levels to provide continuing tidal flood risk management to the Seaside Fishermen’s frontage zone 8. The defence raising will be the same in this zone, whatever TE2100 “end of the century” option is selected.</p> <p>Whether or not defences are raised, all defences will still require ongoing maintenance, repair and replacement (and hence engineering works) and this has been allowed for in our Plan investment profile.</p> <p><i>(Cost of implementing this action is included in TE2100 Plan)</i></p>	<p>Environment Agency Essex CC EEDA, EERA Local Authority spatial and emergency planners:</p> <ul style="list-style-type: none"> • Southend-on-Sea <p>Essex SMP (shoreline management plan) Client Steering Group Thames Gateway Essex Partnerships Developers and site owners Thames Strategy East</p>	<p>Our Planning Liaison and Development Control staff will promote these works as part of ongoing development applications.</p> <p>Our Asset Systems Management teams will promote schemes through capital programme and they will form part of strategic and investment plans subject to replacement/repair working arrangements as A.8.6. above.</p> <p>There are major opportunities for reshaping the local landscape as part of these works.</p>	<p>We cannot know what institutional arrangements there will be as we approach the 22nd century, but our TE2100 vision imagines an environment where the Leigh-on-Sea and Southend-on-Sea riverside has thriving regeneration areas and a stable, flourishing natural environment which is increasingly enjoyed and respected by the people who live, work and visit. This means that the actions established in A.8.6. and A.8.7. will be continued by whoever is looking after our environment at that time. If you have views about the long-term future management of the Leigh-on-Sea & Southend-on-Sea riverside, we would like to hear them. This consultation provides an opportunity for you to have these views recorded and presented as part of an on-going vision statement to those who follow us 60 to 100 years from now.</p>

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	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.8.9. To agree a programme of local beach recharge measures and investigation into siltation and erosion patterns in this policy unit.</p> <p>The Southend-on-Sea frontage is subject to wave attack and overtopping. Beach recharge has been implemented both to improve the beach and reduce the impacts of waves. Improvements to this approach would reduce the need for defence raising.</p> <p>Local cockle fishermen have particular problems relating to siltation in and around Leigh-on-Sea. It is recommended that this should be included in any local morphological investigations relating to beach recharge.</p> <p><i>(Cost of implementing this action is not included in our TE2100 Plan, but TE2100 data, information and recommendations are available to support the implementation of this action)</i></p>	<p>Environment Agency</p> <p>Local Authority</p> <ul style="list-style-type: none"> • Southend-on-Sea <p>Essex SMP (shoreline management plan) Client Steering Group</p> <p>Fishermen</p>	<p>Discussion between Environment Agency and implementation partners to agree strategic scope of measures required.</p> <p>Agreement between implementation partners on the strategic approach, and roles and responsibilities for achieving it.</p> <p>All site owners must be supportive of approach and confidence of public and users maintained. Local measures for management of accretion and erosion to be in place or planned within 25 years.</p> <p>Good dialogue to be maintained between TE2100 and Essex shoreline management plan to ensure no contradictory advice provided by these two overlapping strategies.</p>	<p>Implementation partners: Are you aware of the risks and particular vulnerability of people and property to siltation or erosion in this area?</p> <p>Do you have arrangements in place for the scope of works required for the properties/areas in which you have an interest? Can the Environment Agency assist with this through implementation of Action A.8.9?</p> <p>Landowners, the public, business and other interested groups: We would be interested to hear your views to assist us in planning the implementation of this action A.8.9. particularly if you live, work or have interests in this area and are concerned about erosion or accretion on the foreshore at Leigh-on-Sea & Southend-on-Sea.</p> <p>This has not been designed or addressed in detail in TE2100 but a number of areas have been identified as requiring further study at local level:</p> <p>Our TE2100 Technical Report and local choices documents for the policy units provide further information on these matters and the choices which are available to assist with problems. If you would like to comment on these in more detail, please contact the project team.</p>

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