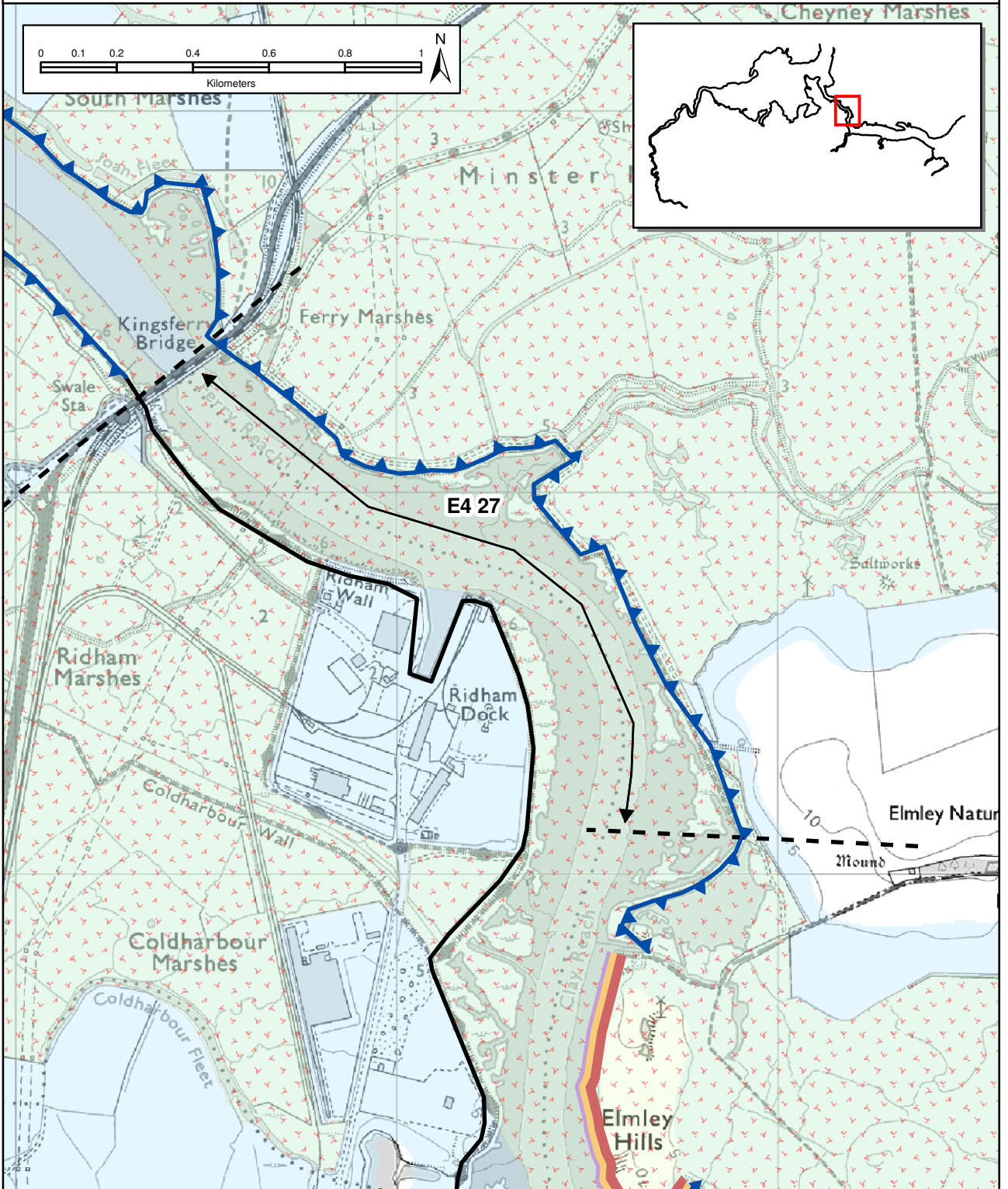


Medway Estuary and Swale Shoreline Management Plan

Policy Unit E4 27: North Elmley Island to Kingsferry Bridge



Policy

| From Present Day: | Medium-Term: | Long-Term: |
|-------------------|---------------------|---------------------|
| Hold the Line | Managed Realignment | Managed Realignment |

- Indicative erosion zone up to 2025
- Indicative erosion zone up to 2055
- Indicative erosion zone up to 2105

Indicative realignment location*

* Actual realignment extent and location will be the subject of further studies.

- Policy Unit Boundary
- Policy Unit Extent
- Current shoreline
- Hold the Line

Environmental/Cultural Heritage

- National Nature Conservation Designation
- International Nature Conservation Designation
- Important Heritage Sites (Scheduled Monuments)
- 2005 Indicative floodplain © Environment Agency

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Location reference: North Elmley Island to Kingsferry Bridge

Policy Unit reference: E4 27

SUMMARY OF THE PLAN AND JUSTIFICATION

Plan:

North Elmley Island to Kingsferry Bridge constitutes part of the northern bank of the Swale, and extends along the south-west of the Isle of Sheppey from the high land of Elmley Hills to the south to the main A249 road and railway link to the Isle of Sheppey in the north. The low-lying hinterland consists mainly of agricultural land and coastal grazing marsh, which like the intertidal mudflat and saltmarsh along the frontage, are internationally designated. A small number of properties at Minster Marshes and two local roads are set back from the shoreline. The southern section of hinterland forms part of the Swale National Nature Reserve and the Elmley National Nature Reserve.

In the short term the recommended plan is to protect the ecological assets and the low-lying floodplain, which includes properties, roads, agricultural land and freshwater habitats. The recommended long-term plan is to allow the coastline to realign to a more naturally functioning system, whilst continuing to provide flood defence to the large floodplain and isolated properties. It is recognised that this section of shoreline provides an opportunity for environmental enhancement and habitat creation through a managed realignment policy.

No specific realignment positions have been identified for the SMP. The potential impact on internationally designated sites will be a limiting factor on realignment extents and therefore, further studies will be required to investigate and define the extent, location and implementation of the realignment i.e. the best technical, environmental and economic option that best manages flood risk. These studies will also need to investigate the exact standard and alignment of any defences for this frontage and any mitigation measures required for loss of designated habitat.

The aim of these policies is to work towards achieving a more naturally functioning estuary and the creation of important brackish and saline habitats whilst at the same time creating a shoreline with a reduced requirement for defence maintenance. The policies are considered to be sustainable in the long-term, on the basis that overall flood defence is maintained to limit flood propagation.

The effect of these policies on designated conservation sites has been assessed in partnership with Natural England.

Preferred policies to implement Plan:

From present day: The present day policy for North Elmley Island to Kingsferry Bridge is to continue to **hold the line** by maintaining existing defences to provide protection to the large floodplain, infrastructure, properties, agricultural land and freshwater habitats.

Intertidal areas are likely to accrete or remain stable in this area. Therefore there is expected to be very little change in estuary processes or impacts on

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Location reference: North Elmley Island to Kingsferry Bridge

Policy Unit reference: E4 27

evolution within this epoch.

This policy would allow for further study to take place regarding realignment in the next epoch and possible implications regarding essential infrastructure (i.e. railway line and A249).

Medium-term: The medium term policy changes to **managed realignment with localised hold the line**. There is a need to control the realignment of this shoreline to best manage estuarine geomorphology and the integrity of European wildlife sites. The detailed alignment, will be subject to further study to address uncertainties and confirm the best technical, environmental and economic option to manage the estuary. The policy will involve constructing realigned secondary defences at a set-back position and deliberately removing all or part of the existing defences or allowing them to fail. This will require re-routing of shoreline footpaths in localised areas.

No specific realignment position has been identified for the SMP. Loss of designated freshwater habitats will need to be managed in line with the Habitats Regulations Assessment (Appendix J) and the Regional Habitat Creation Programme. The coastline will remain fixed in position to the south (high land at Elmley Hills) and to the north (infrastructure). As the coastline realigns, brackish and intertidal habitats will develop in realigned areas, replacing freshwater interests. This may require specific management to maximise the environmental benefits and limit potential habitat impacts. Stability and accretion of intertidal habitats is expected to continue as sediment supply is assumed to meet demand within the Swale estuary over this epoch.

Long-term: The long-term policy is to continue allowing the shoreline to realign, whilst continuing to provide protection to infrastructure and low lying areas under a policy of **managed realignment**, to enable more flexible and sustainable flood and erosion risk management within the estuary. All defences will require periodic maintenance and potential upgrading with sea level rise.

It is expected that created habitat in realigned areas will become well-established during this epoch and provide added protection to the low-lying hinterland, as sea levels rise. Erosion of saltmarsh edges may become more prevalent as tidal prisms and water flows increase with sea level rise.

Location reference: *North Elmley Island to Kingsferry Bridge*

Policy Unit reference: *E4 27*

IMPLICATIONS OF THE PLAN FOR THIS LOCATION

| Time Period | Management Activities | Material Assets, Infrastructure & Land Use | Landscape | Natural Environment | Historic Environment | Population (Amenity & Recreational Use and Human Health) |
|-------------|--|--|--|--|--|---|
| 0-20 years | Undertake engineering works to hold the defence line. | Defences will continue to provide the appropriate standard of protection to built assets, infrastructure and agricultural land during this period. | Designated landscape of the industrial area maintained. | No loss of designated habitats. Compensatory habitat will need to be secured before any designated habitat is lost in epoch 2. There is potential for impacts of groundwater extraction on groundwater levels in this policy unit – uncertainty regarding impacts at this stage. | Potential loss of buried unknown heritage. | No loss of recreation features or residential properties. |
| 20-50 years | Undertake engineering works to hold the defence line and construct secondary realigned defences. | Defences will provide the appropriate standard of protection to built assets, infrastructure and some agricultural land. Areas of land affected by managed realignment will become intertidal. MR may impact on future commercial traffic in the | Estuary landscape will be maintained, however some features will change through realignment. | Effect on internationally designated freshwater habitat and nationally important (BAP) habitat. Creation of internationally and nationally important habitat in realigned areas. Effect on sections of National Nature Reserve dependant on realignment | Potential loss of buried unknown heritage. | Re-routing of footpaths – where MR is implemented. |

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| | | | | | | |
|---------------------|---|--|---|---|--|--|
| | | Swale estuary. | | position. | | |
| 50-100 years | Undertake engineering works to maintain the realigned defence line. | <p>Defences will provide the appropriate standard of protection to built assets, infrastructure and some agricultural land.</p> <p>Areas of land affected by managed realignment will become intertidal.</p> <p>MR may impact on future commercial traffic in the Swale estuary.</p> | Estuary landscape maintained, potential for a more 'natural' shoreline. | <p>Establishment of brackish and saline habitats in realigned areas.</p> <p>Potential for affect on edges of internationally designated saltmarsh and nationally important (BAP) habitat in confined areas.</p> <p>Effect on sections of National Nature Reserve dependant on realignment position.</p> | Potential loss of buried unknown heritage. | Re-routing of footpaths – where MR is implemented. |

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