



TE2100 Local Council Briefing Document – Royal Borough of Kensington and Chelsea

April 2015

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Purpose of this briefing

This briefing document is intended to help explain the Thames Estuary 2100 (TE2100) Plan requirements for tidal flood risk management in the Royal Borough of Kensington and Chelsea and to provide ideas on how flood risk management can be integrated with other objectives to deliver a well-planned riverside.

Key messages

- Local councils are key partners in helping the Environment Agency to deliver the TE2100 Plan; ensuring that the Thames tidal defence system continues to provide protection for communities and the economy now and into the future.
- You can help us by including TE2100 requirements for flood defence improvements, opportunities for improving the riverside and by safeguarding land for future flood management in strategic planning documents such as local plans.
- This briefing contains information on the TE2100 Plan and suggested key policy messages for you to include in strategic planning documents. If you have any questions or would like further information contact details for a member of our local Sustainable Places team are provided.

The TE2100 Plan

The TE2100 Plan covers the Thames estuary from Teddington in the west to the mouth of the estuary at Shoeburyness (north bank) and Sheerness (south bank). It provides a plan for improving the tidal flood defence system for the period to 2100 so that current standards of flood protection are maintained or improved taking account of sea level rise.

The TE2100 Plan divides the floodplains of the tidal Thames into 23 separate policy units. These are generally independent flood cells, where tidal flooding could occur from overtopping or failure of defences in the policy unit but not from adjacent policy units. The policy units are grouped into 8 action zones. There is also an estuary-wide action zone (zone 0).

The Royal Borough of Kensington and Chelsea contains part of the TE2100 London City policy unit and a small part of the Hammersmith policy unit. Figure 1 shows the Kensington and Chelsea council area and parts of the policy units. The eastern boundary of the council area crosses the floodplain near Chelsea Bridge and the western boundary on the Thames is at Chelsea Creek.

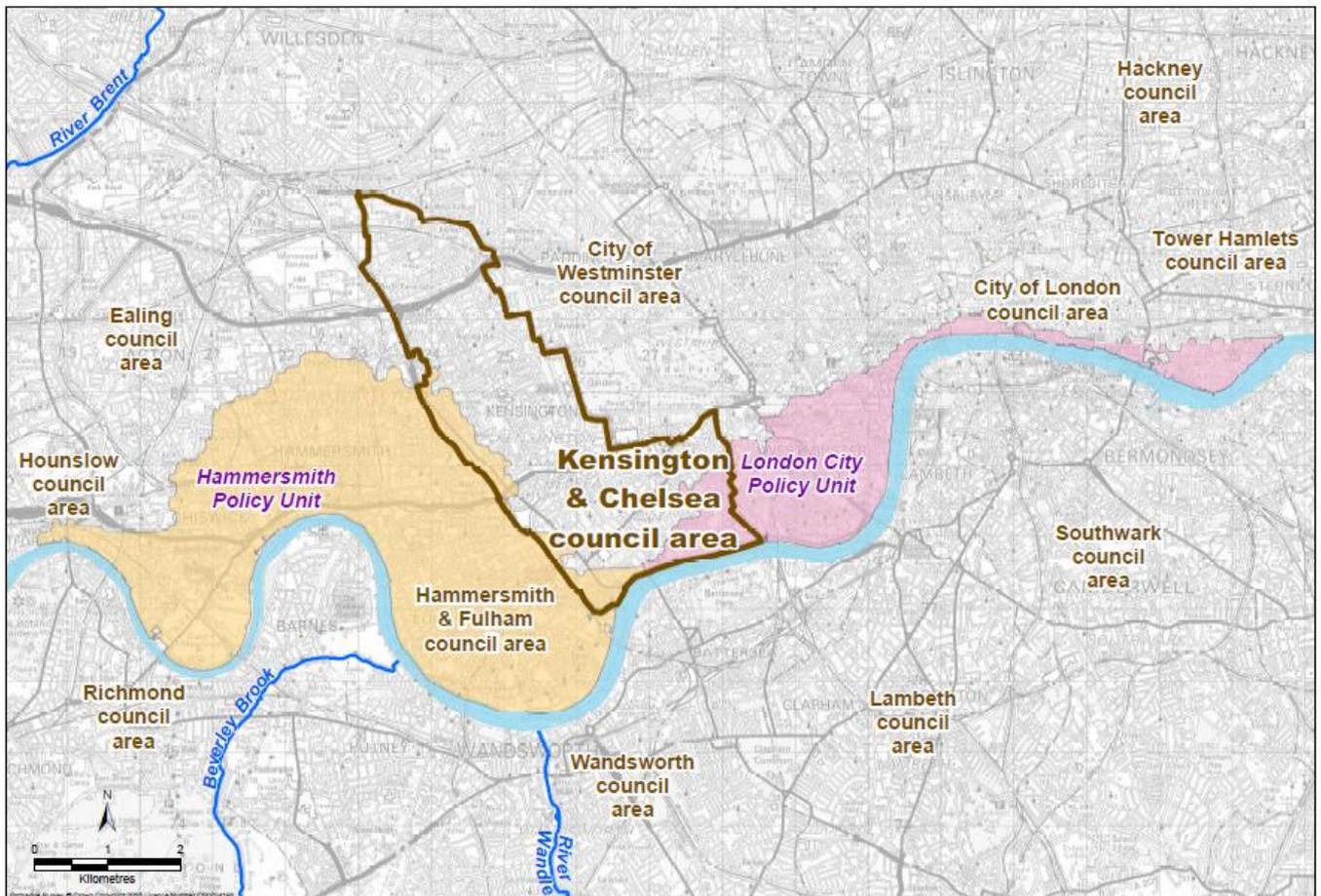


Figure 1: The Royal Borough of Kensington and Chelsea and TE2100 policy units

The flood risk management policy set out in the TE2100 Plan for Kensington and Chelsea is as follows:

- **London City** and **Hammersmith** policy units: Policy P5, to **take further action to reduce flood risk beyond that required to keep pace with climate change**. This means that the standard of protection against tidal flooding will be increased in the future. This will be achieved by improvements to the main tidal flood barrier on the Thames (currently the Thames Barrier at Charlton) together with improvements to the other flood defences e.g. river walls.

Specific actions in the TE2100 Plan that refer to the Royal Borough of Kensington and Chelsea are as follows:

- To maintain, enhance or replace the existing river defence walls/banks and flood control structures;
- To incorporate the Riverside Strategy concept into local plans, strategies and guidance documents;
- To agree a programme of managing flooding from other sources in the defended tidal floodplain;
- To inform the development and revision of local council strategic flood risk assessments (SFRAs) and flood plans;
- To agree partnership arrangements and principles to ensure that new development in the tidal flood risk area is safe and where possible applies the NPPF to reduce the consequences of flooding;
- To agree partnership arrangements for floodplain management;
- To agree a programme of floodplain management.

The implementation of flood defence improvements has already commenced under the Environment Agency's Thames Estuary Asset Management (TEAM) 2100 programme. This 10-year programme of asset management is to be delivered by an integrated team led by CH2M HILL and the Environment Agency.

TE2100 policy units in the Royal Borough of Kensington and Chelsea

The part of the London City policy unit in Kensington and Chelsea is highly developed. The estuary frontage consists mainly of vertical masonry walls and includes the Chelsea Embankment. There are roads adjacent to the estuary along much of the frontage. Land has been built up along the riverside and the defence walls are generally small in height (typically 1m above ground level).

As the flood defences are improved it will be important to ensure that there is collaboration between adjacent council areas on the planning, design and construction of improvements to the flood defences and the riverside. When defences are raised, it is likely that footpaths and other public access will also require raising. Actions involving cross-boundary working between local councils should therefore consider the following:

- A consistent approach to improving the flood defences and the riverside at the boundary between the Kensington and Chelsea and the City of Westminster council areas.
- A consistent approach to improving the flood defences and the riverside at Chelsea Creek, which forms the boundary between the Kensington and Chelsea and Hammersmith and Fulham council areas.

TE2100 flood risk management requirements

The tidal flood defences in Kensington and Chelsea consist of fixed defences on the Thames. There are also a number of drainage outfalls with tidal flap gates to prevent flow from the Thames into the drainage systems.

Requirements for defences on the Thames are:

- An ongoing programme of inspection, maintenance, repair and replacement of defences;
- Raising of all defences by up to 0.5m in 2065;
- Raising of all defences by an additional 0.5 m in 2100. This allows for projected increases in sea level to 2135.

The actual dates of defence raising will depend on the rate of sea level rise. These dates may be revised when the TE2100 Plan is updated.

The drainage outfalls into the Thames may also require improvement as the sea level rises and storm rainfall increases, because drainage of the floodplains will become more difficult. They will also be affected by the proposed Thames Tideway Tunnel.

Cost estimates

The approximate costs of maintaining and improving the flood defence system for the Royal Borough of Kensington and Chelsea are as follows for the period to 2050:

Flood defences - maintenance and repair:	£1 million
Flood defences - major repairs and replacements:	£6 million
Thames barrier (contribution):	£8 million

Thus the overall cost of the flood defence system for Kensington and Chelsea for the period to 2050 is about £15 million. The date 2050 was selected as it is before the major improvement to the flood defence system is likely to be carried out. The tidal flood defences in this area are covered by the 'Thames River (Prevention of Floods) Acts 1879 to 1962' This places liability for maintenance and ultimate replacement

of tidal flood defences on the Riparian Owner (freeholder of the land under or adjacent to the tidal defence). The council should be aware of these costs because contributions may be needed where the council is the Riparian owner, a Riparian Owner cannot be found, or the Riparian Owner is unable to finance works.

TE2100 land requirements

It is important that requirements for safeguarding land are incorporated into strategic plans, in particular site allocation documents for Thames riverside development. The following information can be used as a starting point for further discussions to inform site allocations and policies.

The flood defences in Kensington and Chelsea are 'hard defences', mostly masonry structures. Most of the hard defences could be raised within the existing defence footprint (or with only a small increase in width) but the structures would be tall, unattractive and would restrict public access and views of the estuary. Additional space will be needed when the defences are raised both for the defence engineering works and also for other enhancements such as suitable public access. Land is also required for maintaining, replacing and improving the flood defences.

Corridors of land along the existing defence lines should therefore be safeguarded. This should include space for vehicle access for maintenance and repair of the defences. We suggest that the width of land that should be safeguarded for future flood risk management interventions on the Thames could be of the order of 10 metres. More space may be required especially if wider requirements are to be achieved.

However this will depend on the particular site, the defence type and proposed riverside improvements, and should be discussed and agreed with the Environment Agency. Figure 2 shows the flood defence line, where land should be safeguarded.

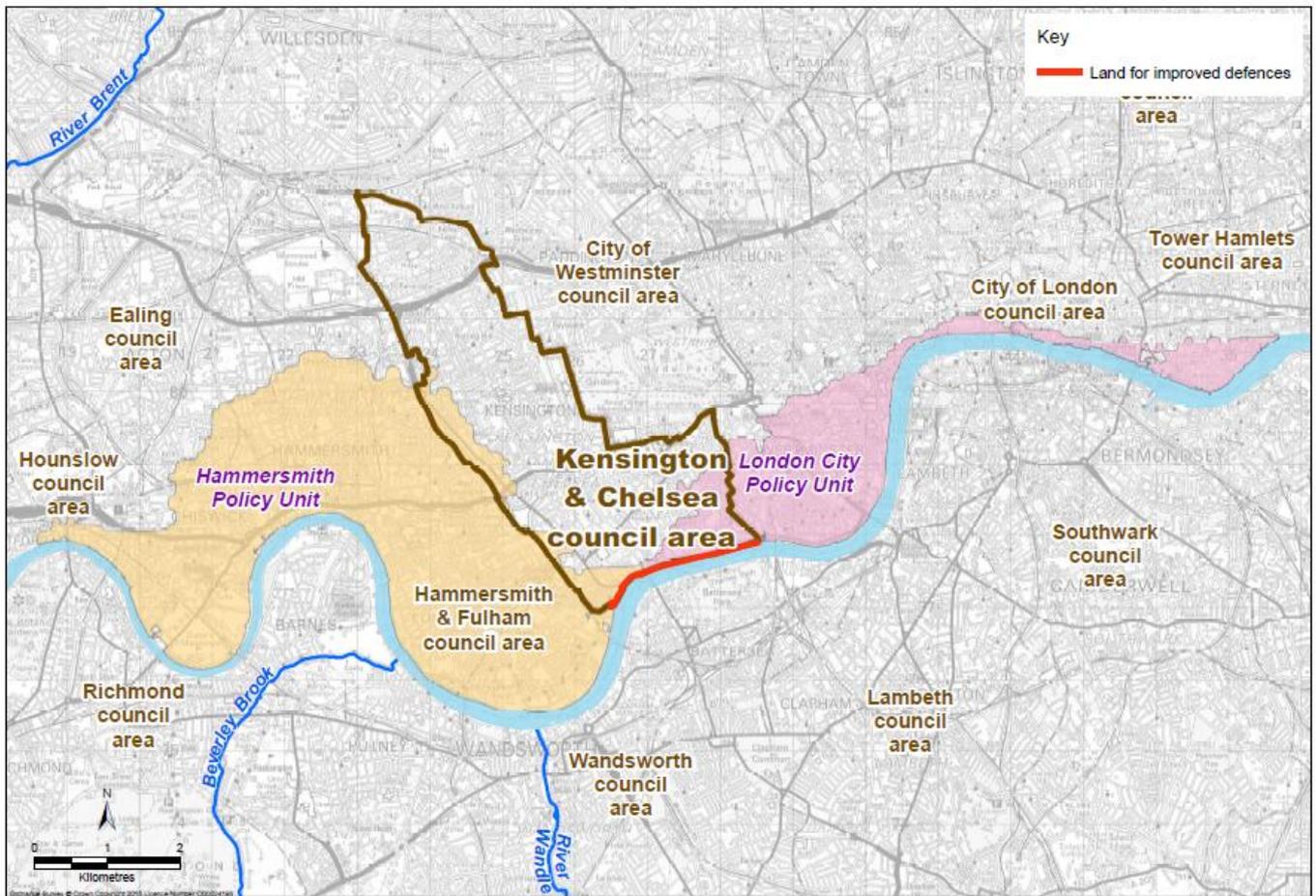


Figure 2: Royal Borough of Kensington and Chelsea: indicative land requirements for flood risk management

There is little scope in Kensington and Chelsea for local flood defence realignments to achieve landscape, public amenity and environmental enhancements. However, where realignments of the existing defences are envisaged, land will be required including an allowance for future defence raising. Land may also be needed for secondary defences at vulnerable locations, for example underground stations.

Design of works including potential enhancement opportunities

Essential requirements for flood risk management

The essential requirements for flood risk management include raising of the defences as outlined above together with the routine activities of inspection, maintenance, repair and replacement of defences as required. Raising the defences on the existing 'footprint' would achieve the flood risk management objectives of the TE2100 Plan but would not provide any wider landscape or environmental benefits and would introduce a barrier to viewing the river from the landward side.

Potential enhancement opportunities

There is an opportunity to improve the riverside both when defences are raised and when they are repaired or replaced. The Environment Agency has developed guidance and can provide examples for improving the riverside. Significant public access and public amenity improvements, landscape improvements and environmental enhancements can be achieved at modest cost if they are included as

part of an integrated riverside design that includes flood defences.

The example in Figure 3 shows a riverside improvement where the flood defence line is landward of the riverside path to create a close link between the path and the estuary. There are already some good examples in London where the defence line has been set back to create public amenity improvements on the riverside. Figure 4 shows the type of river frontage that might be considered for a redevelopment of the Thames frontage near Chelsea Creek.

The designs must accommodate the existing flood defence crest levels and enable the defences to be raised in the future. The design and levels for any floodable riverside path should be set to avoid frequent flooding and to take account of future increases in water levels.

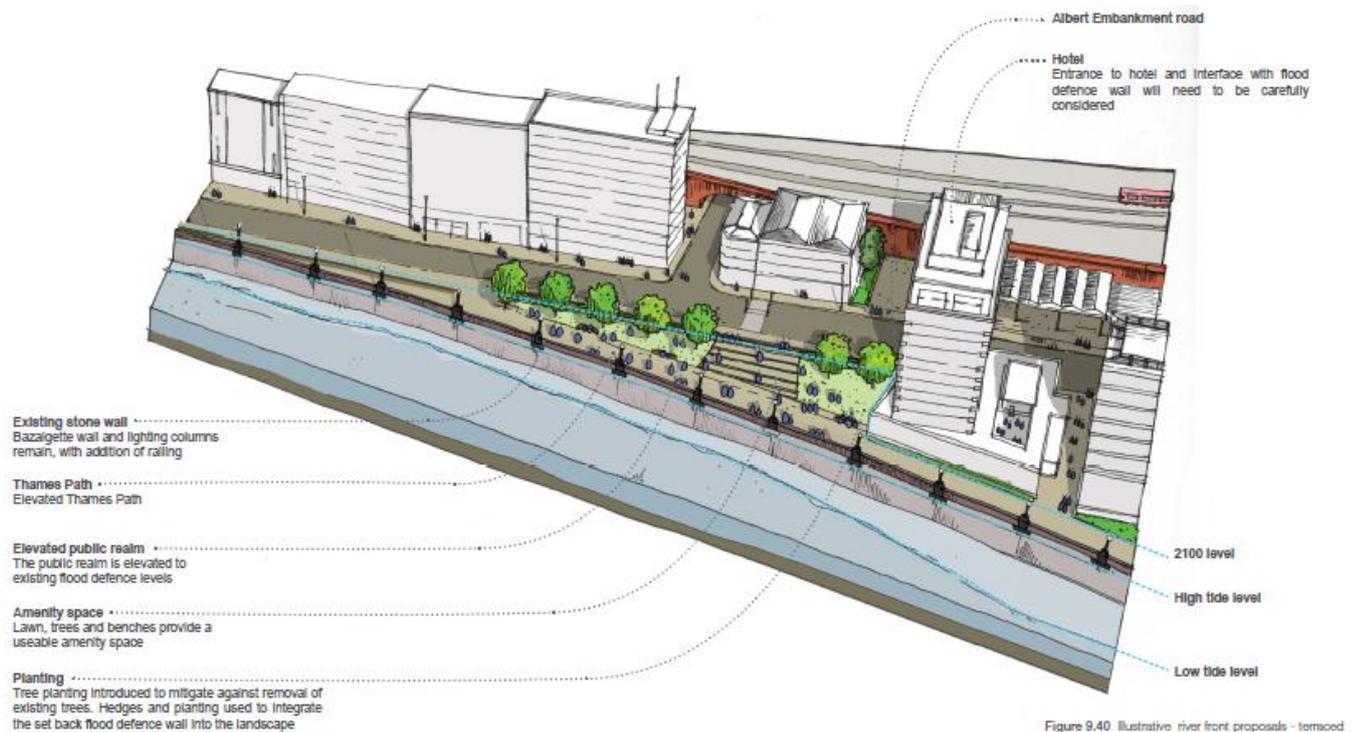


Figure 3: Setting back the defence line and creating a 'floodable' riverside path
(Source: Environment Agency)

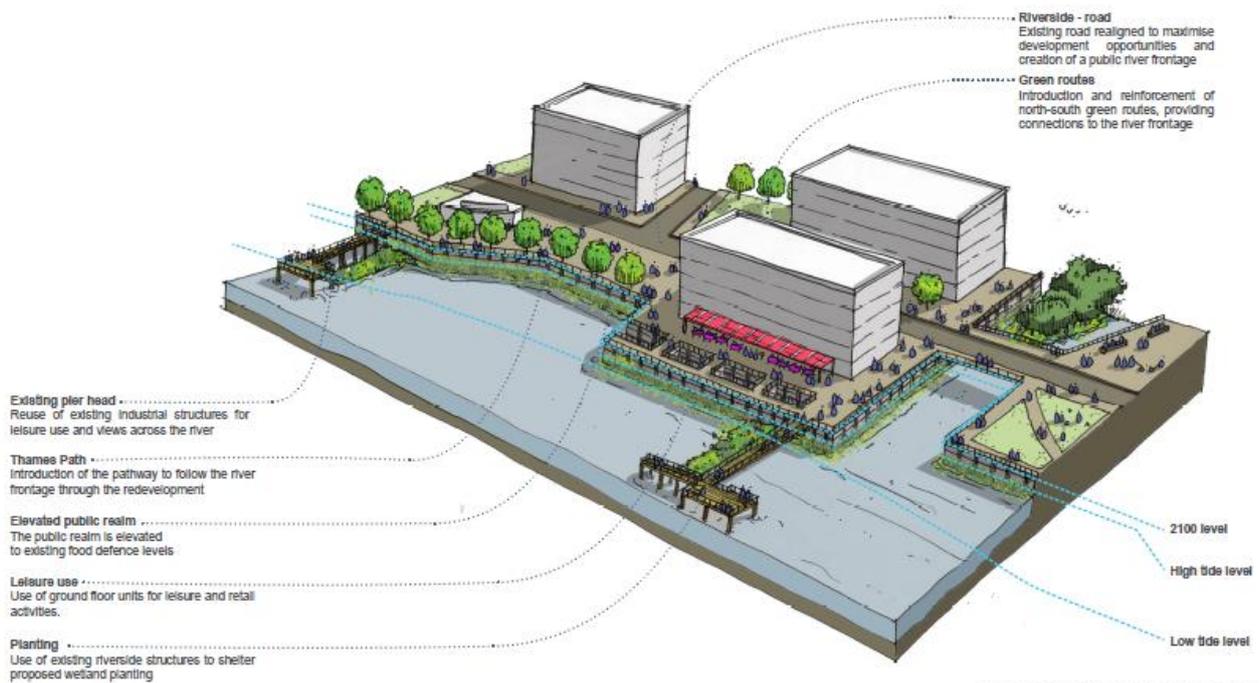


Figure 12.21 Illustrative river front proposals - elevated public realm

*Figure 4: Redevelopment of a former river wharf frontage
(Source: Environment Agency)*

Key policy messages

The following are suggestions of policy messages that could be incorporated into Royal Borough of Kensington and Chelsea council strategic planning documents to ensure that the recommendations of TE2100 are implemented in new developments.

A specific commitment for the local council to work with the Environment Agency and others to ensure the recommendations of the TE2100 Plan are implemented in new and existing developments, to keep communities safe from flooding in a changing climate and improving the local environment.

A requirement for new developments to help reduce flood risk now and into the future and to act on the recommendations of the TE2100 Plan. This could include for example:

- Raising existing flood defences to the required TE2100 Plan levels in preparation for future climate change impacts or demonstrate how tidal flood defences protecting sites can be raised to the required TE2100 levels in the future through submission of plans and cross-sections of the proposed raising;
- Demonstrating the provision of improved access to existing flood defences and safeguarding land for future flood defence raising and landscape, amenity and habitat improvements;
- Maintaining, enhancing or replacing flood defences to provide adequate protection for the lifetime of development;
- Where opportunities exist, re-aligning or setting back flood defence walls and improving the river frontage to provide amenity space, habitat, access and environmental enhancements.
- Securing financial contributions towards the anticipated costs of flood risk management infrastructure required to protect the proposed development over its lifetime.

Links to other plans and guidance

The following documents provide further information:

The **Thames Estuary 2100 (TE2100) Plan** can be found at:

[Thames Estuary 2100 \(TE2100\) - Publications - GOV.UK](#)

The **Strategic Flood Risk Assessment (SFRA)** for the Royal Borough of Kensington and Chelsea can be found at:

http://www.rbkc.gov.uk/PDF/RBKCSFRA_Final_reduced.pdf

Flood defence consenting information. Consent is required from the Environment Agency before individuals carry out any works on, over, under or near tidal flood risk management assets. Therefore, flood defence consent should be obtained by a developer ahead of raising or realigning tidal flood defences. The consent form and accompanying guidance can be found at:

<https://www.gov.uk/flood-defence-consent-england-wales>

Living on the edge is an Environment Agency guide that explains roles and responsibilities for flood risk management and how riparian owners can work with flood risk management authorities and other organisations. It can be found at:

<https://www.gov.uk/government/publications/riverside-ownership-rights-and-responsibilities>

Partnership funding for new and improved flood and coastal defence work introductory guidance outlines how central government capital funding is currently allocated to flood risk management projects. This guidance is available at:

<https://www.gov.uk/government/policies/reducing-the-threats-of-flooding-and-coastal-change/supporting-pages/funding-flood-and-coastal-erosion-risk-management-in-england>

Contact details

For further information please contact: **Keira Murphy**

northlondonplanning@environment-agency.gov.uk

This advice is provided by the Environment Agency to help Local Councils prepare appropriate policies and plans. Local plans and policies are subject to independent scrutiny, which by its very nature might identify other environmental aspects that are not highlighted in this advice. This advice is intended to support the preparation of plans and policies and does not seek to set out the specific requirements to obtain the relevant consents from the Environment Agency or other organisations from which consents might be required.