

TE2100 action plan: action zone 1 – west London

Action plan for zone 1 – table A.1.

12 actions identified

Description of the policy units

- Richmond
- Twickenham
- Barnes & Kew
- Hammersmith

Table A.1. describes the 12 actions for Zone 1 – west London 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 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 the action plan and the timing of those actions?



Do you agree with the mechanisms we have set out to deliver the actions plan?



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

Policy unit – Richmond



Richmond riverside

Policy: Our recommended flood risk management policy for Richmond is policy **P3**, to continue with existing or alternative actions to manage flood risk at the current level (accepting that flood risk will increase over time from this baseline), working with others on local measures for key assets and infrastructure.

Description

The Richmond policy unit consists of a relatively narrow floodplain along the Thames, much of which floods regularly and is occupied by parks and gardens. The amount of property at risk is small but there are some historic and important sites including Ham House and part of Kew Gardens. There are two schools and three electricity substations in the flood risk area.

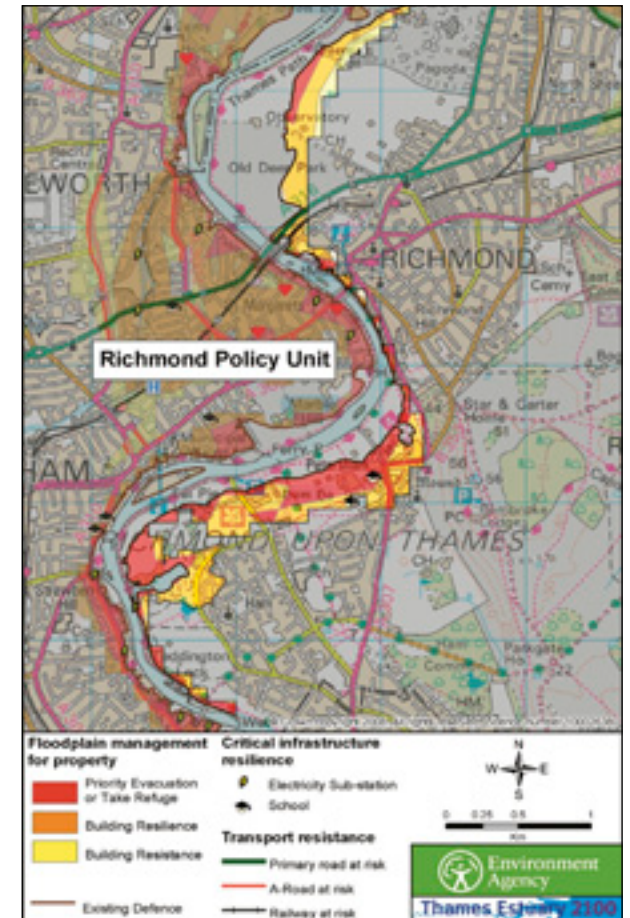
The developed floodplain is narrow and therefore the benefits of improving defences are limited. This policy unit is a very environmentally sensitive area, where defence improvements should enhance the landscape and not have adverse impacts. The area is covered by the Thames Landscape Strategy Hampton to Kew, which includes a vision for managing and improving the landscape including better public access to the river. There is public access along the riverside for the full length of the frontage, much of which is in the park areas.

Sources of flooding

- Tidal from the Thames upriver of the Thames Barrier (probability of 0.1% per annum, barrier controlled); flood depths up to 2 m if the Thames Barrier failed.
- Fluvial and tidal/fluvial from the Thames (probability >1% per annum; flood depths up to 3 m).
- Local drainage.

Existing flood risk management system

- The Thames Barrier, to control tidal water levels.
- The Thames Barrier is also used to reduce fluvial flood levels.
- Secondary tidal defences along the Thames frontage.
- Flood forecasting and warning.



At risk in Richmond policy unit

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There are no fluvial flood defences but existing tidal defences provide some protection against fluvial flooding downriver of Teddington. There are some undefended areas between the defences and the Estuary.

Policy context

This policy unit lies within the Thames CFMP area, and also the area covered by the Thames Landscape Strategy (Hampton to Kew). Some development is planned in Richmond but the impact on the floodplain would be small.

Vision

Our vision for the Richmond policy unit is to provide flood risk management within the constraints of a **P3** policy, that enhances the landscape and amenity of the area, and involves local communities, businesses and agencies in flood risk management. Suggested requirements are for improved and new defences where public access and views of the Estuary are maintained and enhanced.

Local issues and choices

The Richmond policy unit is the narrow strip of floodplain running along the eastern bank of the Thames from Teddington, past the Old Deer Park to

the edge of Kew Gardens. There is a risk of fluvial flooding in Richmond from the tidal Thames.

At present, the Thames Barrier is closed to reduce fluvial flood risk. But climate change will increase the number of closures required to protect against rising tides. With increased and more intense rainfall, fluvial flood risk will also increase. The Thames Barrier will be less and less available to assist with managing this fluvial flood risk as it is conserved for tidal flood risk management – the purpose for which it was designed. (The particular constraint is the annual number of closures for the Barrier, as this must be limited to reduce the risk of failure and ensure readiness of the Thames Barrier for tidal surge flood conditions.)



The Thames Barrier will continue to provide a high standard of protection against tidal flood conditions, but over the next 25 years its use for fluvial flood risk management will be gradually reduced. Choices for managing this risk are given in action plan table A.1.

For the Richmond policy unit this means that we have 25 years to plan and put in place alternative measures for managing freshwater flood risk. This means that vulnerable areas, such as undefended islands, will have to rely upon floodplain management measures in the future with localised defences to protect specific properties where this can be justified. Floodplain management measures include resistance and resilience of properties and increased reliance on flood warning and community flood management strategies. An opportunity for wetland habitat restoration has been identified in the action plan table (A.1.).



Do you understand our assessment for the Richmond policy unit?



Do you agree with it?

Policy unit – Twickenham

Policy: Our recommended flood risk management policy for Twickenham is policy **P3**, to continue with existing or alternative actions to manage flood risk at the current level (accepting that flood risk will increase over time from this baseline), working with others on local measures for key assets and infrastructure.

Description

The Twickenham policy unit has a relatively narrow floodplain along the Thames, although there is a large tidal/fluvial floodplain area on the River Crane and a smaller area on the River Brent. The flood risk areas are mainly residential but also contain parks and gardens including Syon House and Marble Hill Park. There are six schools, four care homes, 12 electricity sub stations, a hospital and major arterial routes and railway lines in the flood risk area. This is an environmentally sensitive area, where flood defence improvements should be designed to enhance the landscape and minimise adverse impacts. The area is covered by the Thames Landscape Strategy Hampton to Kew, which includes a vision for managing and improving the landscape including better public access to the river. There is public access to the riverside in parts of the policy unit, but other areas are privately owned.

Sources of flooding

These are the same as for the Richmond policy unit, but in addition there are the following sources of flood risk:

- Fluvial from the River Crane, exacerbated by backing up from the Thames (probability >1% per annum, flood depths up to 2 m). The River Crane has an extensive floodplain in the tidal/fluvial interaction zone.
- Fluvial and tidal/fluvial from the River Brent (probability 1% per annum, flood depths up to 2 m).
- Fluvial and tidal/fluvial from the Duke of Northumberland's River. The flood risk is believed to be small.
- Local drainage.
- Groundwater flooding from superficial strata, possibly connected to Thames levels.

Existing flood risk management system

- The Thames Barrier, to control tidal water levels.
- The Thames Barrier is also used to reduce fluvial flood levels.
- Secondary tidal flood defences along the Thames frontage and the lower Brent.



At risk in Twickenham policy unit

- The Crane gates that prevent high water levels in the Thames entering the River Crane. They are only effective when Crane flows are relatively low. When fluvial flows on the River Crane are high, the gates open even if the Thames water level is high.
- Local fluvial defences on the River Crane.
- Flood forecasting and warning.



Teddington

There are no formal fluvial flood defences on the Thames. The existing tidal defences do however provide some protection against fluvial flooding downriver of Teddington. The current estimated standard of protection provided by these defences at Teddington is 3% per annum (1:30). There are some poorly defended areas including areas between the defences and the Estuary, and Eel Pie Island. Flood warning arrangements for these areas include warning signs and lights.

Policy context

The Twickenham policy unit lies within the Thames CFMP area. It is also in the area covered by the Thames Landscape Strategy (Hampton to Kew). Some development is planned in Twickenham but the impact on the floodplain would be small.

Vision

Our vision for this policy unit is to provide flood risk management within the constraints of a **P3** policy, that enhances the landscape and amenity of the area, and involves local communities and businesses and agencies in flood risk management.

Local issues and choices

There is a risk of fluvial flooding in Twickenham from the tidal Thames. Choices for managing this risk are given in the action plan table A.1. As for the Richmond policy unit, at present, the Thames Barrier is closed to reduce fluvial flood risk. However, this use will be significantly reduced in order to conserve the barrier for tidal flood risk management. This means that vulnerable areas, for example undefended islands such as Eel Pie Island, will have to increasingly rely upon floodplain management and localised defence measures in the future over the next 25 years.

Measures will also be required for tributary flooding, particularly from the River Crane which has an extensive fluvial floodplain in the fluvial/ tidal interaction zone (table A.1.). This will be affected by lack of space for new defences.

Floodplain management may also be required for groundwater flooding. This has not been investigated by TE2100 and it is included in our action plan.



Do you understand our assessment for the Twickenham policy unit?



Do you agree with it?

Policy unit – Barnes & Kew

Policy: The recommended flood risk management policy for Barnes & Kew is policy **P5**, to take further action to reduce flood risk beyond that required to keep pace with climate change.

Description

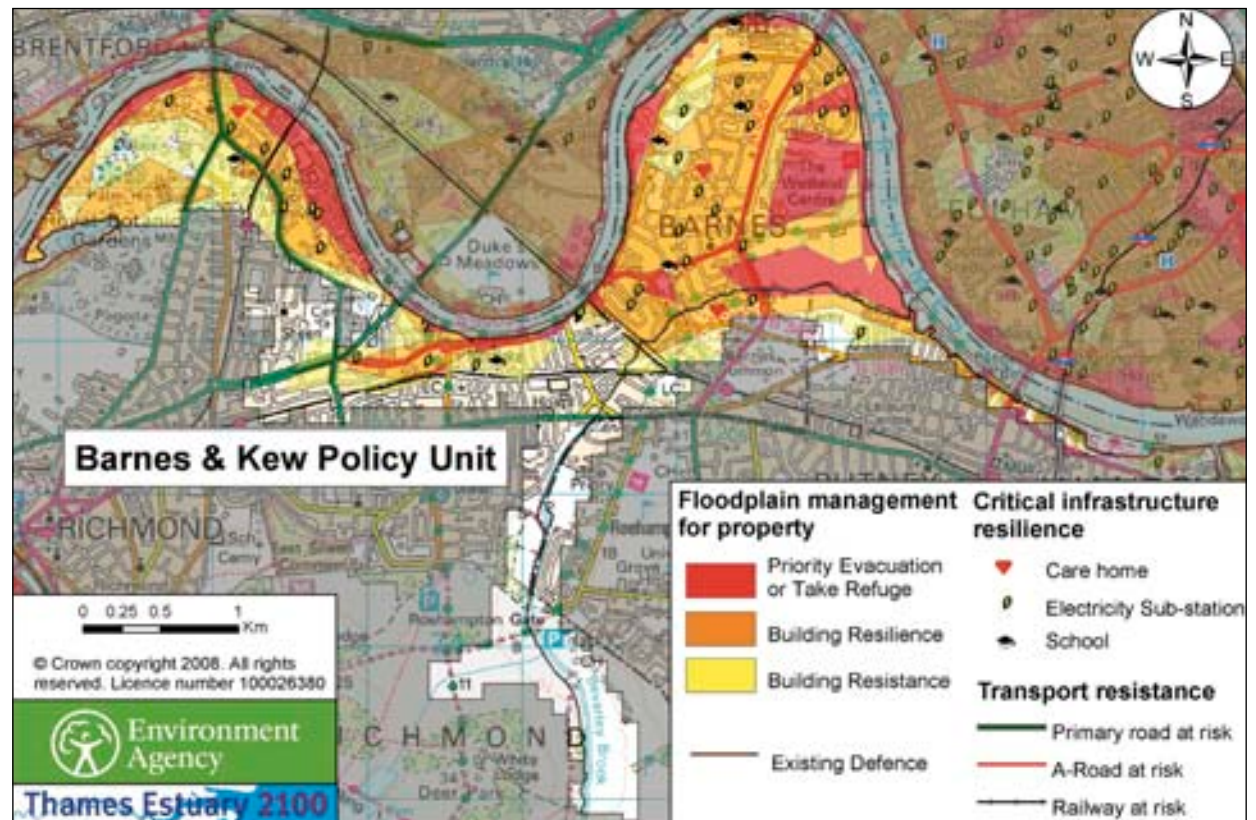
The Barnes & Kew policy unit contains large residential areas, schools and offices. It also has several large open areas including the Kew Gardens World Heritage Site, Barnes Wetlands Centre and playing fields. There is public access to the whole frontage. There are two care homes, seven schools and 29 electricity substations in the flood risk area which also has the major arterial routes leading to three Thames bridges.

Sources of flooding

These are the same as for Richmond plus fluvial flooding from Beverley Brook (probability about 10% per annum) and a risk of groundwater flooding from superficial strata, possibly connected to high water levels in the Thames.

Existing flood risk management system

- The Thames Barrier, to control tidal water levels.
- Secondary tidal flood defences along the Thames frontage.
- Beverley Brook flapped outfall.



At risk in the Barnes & Kew policy unit

- Beverley Brook bypass culverts, that provide relief from fluvial flooding.
- Known combined sewer overflows (CSOs) for urban drainage flood mitigation.
- Flood forecasting and warning.



Mortlake. Downstream of Chiswick Bridge

Policy context

The Barnes & Kew policy unit lies within the Thames CFMP area. It is also in the reach covered by the Thames Strategy Kew to Chelsea, which gives clear guidance on where and how the Estuary frontage could be improved. Some development is planned but the sites are generally small, and the impact on the floodplain would also be small.

Vision

As with Barnes & Kew our vision for this policy unit is to enhance the already attractive environment in this area by providing defence improvements that are designed in a sensitive way and blend with the surroundings. Where defences are raised, it will be important to ensure that the impacts on views are minimised. The vision also includes greater local and institutional awareness of the flood risk, and this should influence emergency planning, land use planning and new development.

Local issues and choices

There is a possibility that defence raising for tidal flood risk management may not be acceptable in all areas because of the adverse impact on the riverside. An alternative approach would be a combination of local secondary defences to protect parts of the floodplain, and floodplain management to reduce the impacts of flooding to existing properties and other assets. However, when considering this approach it must be remembered that flooding could occur several times per year and the annual frequency will increase. It should only be adopted when there is a good local appreciation and acceptance of the risk of living with flooding. In this policy unit, a **P5** policy is recommended. This means that

there is justification to improve the level of flood risk management beyond that required to keep pace with climate change.

Accretion of the river bed is occurring at Barnes and Putney. This may provide opportunities to improve the ecological capacity and appearance of these frontages. There is a risk of fluvial flooding from Beverley Brook which is exacerbated by high water levels in the Thames. There are two diversion culverts, although these are also affected by tide lock from high levels in the Thames. Responses to manage tidally influenced fluvial flood risk on Beverley Brook are set out in table A.1. Floodplain management may also be required for groundwater flooding. This has not been investigated by TE2100 and it is included in our action plan.



Do you understand our assessment for the Barnes and Kew policy unit?



Do you agree with it?

Policy unit – Hammersmith

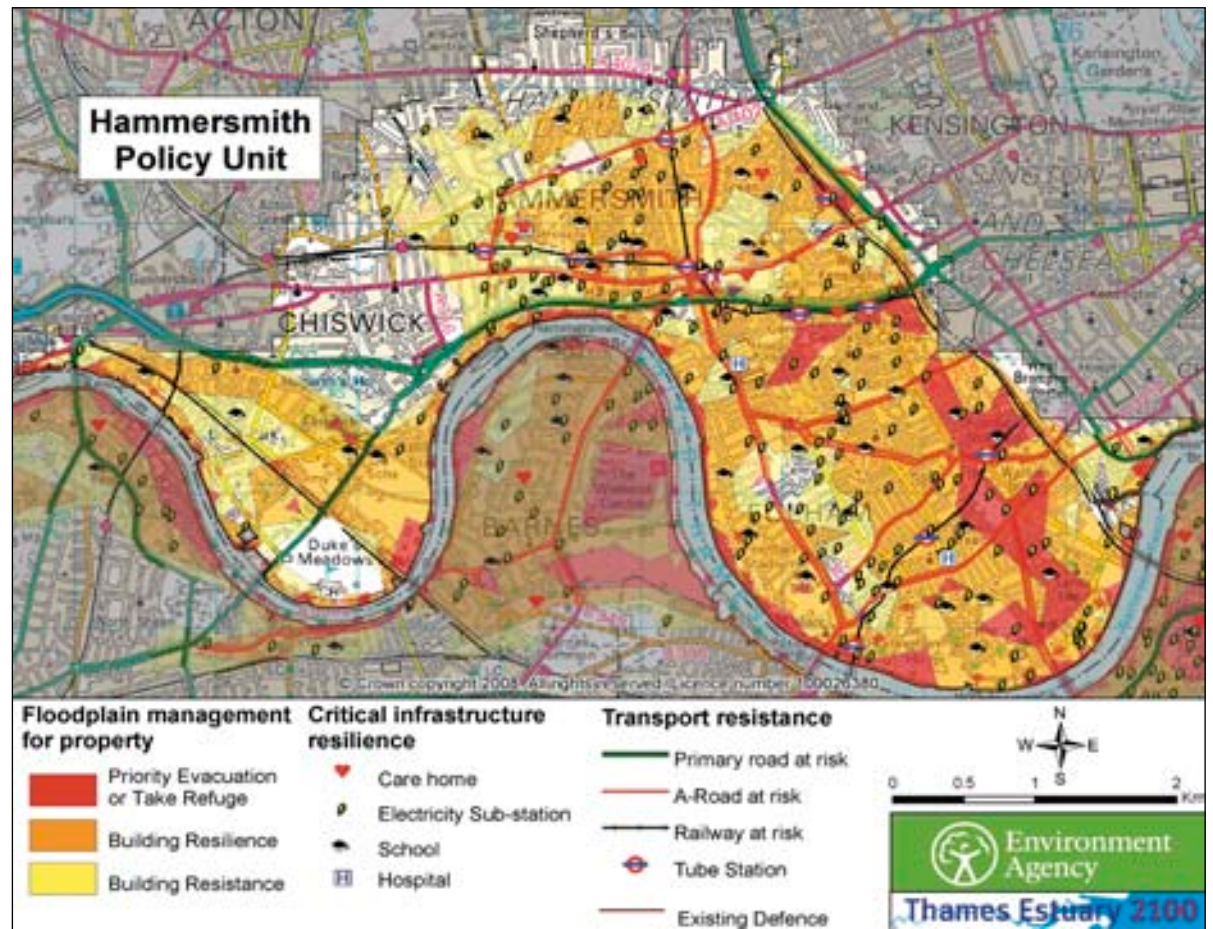
Policy: The selected policy for Hammersmith policy unit is policy **P5** to take further action to reduce flood risk.

Description

Hammersmith is a large and highly developed policy unit with extensive and established residential areas. The estuary frontage is a mixture of public parks, public walkways, roads and private areas. Thus access to the Estuary is currently not continuous. The underground network at Hammersmith and environs is particularly vulnerable with 10 underground stations in the flood risk zone. There are also 34 schools, six care homes, over 100 electricity substations and two major hospitals in the flood risk area.

Sources of flooding

- Tidal from the Thames upriver of the Thames Barrier (probability 0.1% per annum or less frequent, barrier controlled), flood depths up to 2 m if the Thames Barrier failed.
- Fluvial from the Thames upriver of the Thames Barrier (probability 0.1% per annum or less frequent).
- There is a risk of flooding from pluvial and urban drainage sources.



At risk in Hammersmith policy unit

- There is a potential for groundwater flooding from superficial strata when levels in the Thames are high, particularly in the future when defence levels have been raised in line with our **P5** policy.

Existing flood risk management system

- The Thames Barrier, to control tidal water levels.
- Secondary tidal flood defences along the Thames frontage.
- Eight CSOs for urban drainage flood mitigation.
- Flood forecasting and warning.



Hammersmith Bridge

Policy context

The Hammersmith policy unit lies within the Thames CFMP area. It is also in the reach covered by the Thames Strategy Kew to Chelsea, which gives clear guidance on where and how the Estuary frontage could be improved. There are locations where development is planned on or near the Estuary frontage. These provide opportunities to enhance the frontage and the defences.

Vision

Our vision for the Hammersmith policy unit is to enhance the already attractive environment in this area by providing defence improvements that are designed in a sensitive way and blend with the surroundings whilst achieving our recommended policy **P5**. The vision also includes greater local and institutional awareness of the flood risk, and this should influence emergency planning, land use planning and new development.

Local issues and choices

Where policy **P5** applies, a higher standard of protection is needed. This will be provided by the Thames Barrier for tidal flood risk for the foreseeable future. There is a possibility that defence raising for tidal flood risk management



View from Hammersmith Bridge

may not be acceptable in all areas because of the adverse impact on the riverside. An alternative approach would be a combination of defence realignment and floodplain management to reduce the impacts of flooding to existing properties and other assets located between the realigned defence and the Estuary. However, when considering this approach it must be remembered that flooding could occur several times per year and that the annual frequency will increase.

Fluvial flooding from the Thames is unlikely to be a problem for the Hammersmith policy unit because fluvial flood levels would not overtop the defences. There is a risk of flooding from pluvial (rainfall) and urban drainage sources. These have only been investigated at a high level, and mitigation measures have not been developed in detail. Further investigation into this local flood risk forms part of our action plan (see table A.1.). Mitigation measures could include improvement of drainage outfalls and flood resilience in affected areas.

There is a potential for groundwater flooding from superficial strata when levels in the Thames are high, particularly in the future when defences are raised. This has not been investigated by TE2100 and investigation and development of mitigation measures is included as an action in our action plan (see table A.1.).

Accretion of the river bed is occurring at Fulham. This may provide opportunities to improve the ecological capacity and appearance of this frontage. Erosion of the river bed is occurring on the frontage at Chiswick, and it may be necessary to set the defence line back when the defences are upgraded to avoid erosion damage to the defences.



Do you understand our assessment for the Hammersmith policy unit?



Do you agree with it?


TE2100 action plan: action zone 1 – west London

Table A.1. – Policy units

Richmond Twickenham Barnes & Kew Hammersmith

P3
P3
P5
P5

[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.1.1. To agree a programme for planning and putting in place within 25 years, alternative measures for managing fluvial flood risk in the west London tidal area.</p> <p>[The Thames Barrier will continue to provide tidal flood protection to the same high standard as the rest of London. The Thames Barrier will also continue to be deployed for fluvial floods which trigger barrier closure but within 25 years it will no longer be sustainable to use the Thames Barrier to assist with lower order fluvial flood events – particularly for protection for of islands and other undefended areas]</p> <p><i>(Cost of implementing this action not included in TE2100 Plan, but TE2100 data and information will be available to assist)</i></p>	<p>Environment Agency</p> <p>Greater London Authority (GLA)</p> <p>West London Boroughs:</p> <ul style="list-style-type: none"> • LB Richmond on Thames • LB Hammersmith & Fulham • LB Hounslow • LB Wandsworth • LB Kensington & Chelsea <p>Local Resilience Forum</p>	<p>We will discuss with London Boroughs to agree the strategic scope of measures required.</p> <p>We will promote projects to achieve the agreed measures in partnership with local authority emergency and spatial planners and the GLA.</p> <p>Engagement of public, business and interests groups to raise awareness and increase support for adaptation.</p> <p>In line with the findings of the Thames CFMP, we recommend long-term adaptation of the urban environment in these floodplains.</p>	<p>Implementation partners: We would like you to tell us about your plans for managing development in the tidal/fluvial floodplains. Your core objectives may already support this action. If they don't, will this be included in your plans next time they are updated? This information will guide the development of our implementation blueprint during 2009 and improve arrangements for partnership working.</p> <p>Landowners, the public, businesses and other interested groups: By the year 2034, we may no longer be able to use the Thames Barrier for the frequent, but lower order, fluvial flood events although it will continue to provide a good level of protection against tidal and higher order fluvial flood events. Alternative ways of managing fluvial flood risk will be needed. This will mean adapting some buildings and public spaces which currently have a low standard of protection against fluvial flood. It is important that the public and businesses have confidence in, and are supportive of this approach.</p> <p style="text-align: right;">(continued)</p>

Twickenham



Barnes & Kew

Hammersmith



TE2100 action plan: **action zone 1** – west London

	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	A.1.1 (continued)		This will be very challenging, will require a high degree of partnership and commitment – and will be more difficult than simply maintaining what is already in place.	Each area in west London has different requirements so it is important that the right programme is developed for your area.
	A.1.2. TE2100 Plan informs the development and revision of local authority strategic flood risk assessments (SFRAs) and flood plans. <i>(Cost of implementing this action not included in TE2100 Plan, but TE2100 data and information will be available to assist)</i>	Environment Agency West London Boroughs: <ul style="list-style-type: none"> • LB Richmond on Thames • LB Hammersmith & Fulham • LB Hounslow • LB Wandsworth • LB Kensington & Chelsea Local Resilience Forum	TE2100 information is provided to local authorities preparing flood plans and emergency capability testing. Local authority flood plans are developed with an understanding of TE2100 recommendations and data. A stakeholder engagement programme to ensure the public, businesses and other groups understand, are involved in and supportive of the flood plans.	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. Landowners, the public, business and other interested groups: The Thames tidal defences are robust and well managed. But should there be a failure of a defence or an extreme event which overtops the defences, large areas of west London would be at risk. The flood plans will set out arrangements for managing this sort of emergency. Your response on the TE2100 proposals will be shared with Agencies responsible for preparing the flood plans.
	A.1.3. To agree a programme to provide localised flood protection and resilience for vulnerable key sites in west London zone – particularly in the Hammersmith policy unit.	Environment Agency <ul style="list-style-type: none"> • LB Richmond on Thames • LB Hammersmith & Fulham 	We will discuss with our implementation partners to agree strategic scope of measures required.	Implementation partners: Are you aware of the risks and particular vulnerability of the Hammersmith or other west London policy unit? Do you have arrangements in place to investigate the scope of works required for the properties/areas in which you have an interest? (continued)



TE2100 action plan: action zone 1 – west London

	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.1.3. (continued)</p> <p>[Note: In Hammersmith policy unit there are ten Underground stations in the flood risk zone. There are also 34 schools, six care homes, over 100 electricity sub stations and two major hospitals. Underground areas including basements are particularly vulnerable and will require evacuation plans]</p> <p><i>(Cost of implementing this action not included in TE2100 Plan, but TE2100 data and information will be available to assist)</i></p>	<ul style="list-style-type: none"> • LB Hounslow • LB Wandsworth • LB Kensington & Chelsea <p>Local Resilience Forum</p> <p>Transport for London</p> <p>London Underground</p> <p>NHS Trusts</p> <p>EDF Energy</p> <p>Other site owners</p>	<p>Agreement between implementation partners on the strategic approach, and roles and responsibilities for achieving it.</p> <p>All site owners supportive of approach and confidence maintained. Local floodplain management measures in place or planned within 25 years.</p>	<p>Can the Environment Agency assist with this through implementation of action A.1.3?</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 action A.1.3. particularly if you live, work or have interests in this area.</p>
	<p>A.1.4.</p> <p>To agree a programme of managing flooding from other sources in the defended tidal floodplain.</p> <p>In the west London zone there is potentially a high risk of pluvial and urban drainage flooding, particularly in areas where the urban drainage system has relatively low capacity and/or is prone to tide locking.</p> <p>There is also fluvial flood risk from the Beverley Brook, the Duke of Northumberland's River and the River Crane.</p>	<p>Environment Agency</p> <p>Local authority (spatial and emergency planning)</p> <p>GLA</p> <p>Landowners</p> <p>Thames Landscape Strategy Hampton to Kew</p> <p>Thames Strategy Kew to Chelsea</p>	<p>We will discuss with our 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.</p>	<p>Implementation partners:</p> <p>Are you aware of the risks and particular vulnerability of people and property to flooding from sources other than tidal? 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.1.4?</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.1.4., particularly if you live, work or have interests in this area and are concerned about flooding from sources other than tidal. (continued)</p>



TE2100 action plan: **action zone 1** – west London

	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.1.4. (continued)</p> <p>Choices for local flood risk management have not been designed or addressed in detail in TE2100 but this is identified as an action in the Plan.</p> <p><i>(Cost of implementing this action is not included in TE2100 Plan, but TE2100 data, information and recommendations are available to support the successful implementation of the action)</i></p>		<p>Local measures for management of flooding from other sources to be in place or planned within 25 years.</p> <p>This action will form part of an updated local delivery plan which is linked to our Thames CFMP and long-term investment strategy (LTIS).</p>	<p>This includes pluvial and urban drainage and fluvial flooding from the River Crane, the Duke of Northumberland's River and the Beverley Brook.</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 further information on this, please contact the TE2100 project team.</p>
	<p>A.1.5.</p> <p>To agree a programme for floodplain restoration and management.</p> <p>Work with Thames Landscape Strategy – Hampton to Kew on the development and feasibility of the London's lost floodplains project to restore and manage floodplains to reduce flood risk and benefit the use of floodplains for people and wildlife.</p>	<p>Environment Agency</p> <p>Richmond Borough Council</p> <p>National Trust</p> <p>GLA</p> <p>Thames Landscape Strategy Hampton to Kew</p> <p>Thames Strategy Kew to Chelsea</p>	<p>TE2100 and the Lower Thames Strategy to inform the development of the London's lost floodplains project managed by the Thames Landscape Strategy – Hampton to Kew.</p> <p>The TE2100 plan ensures that an appropriate level of flood risk management for people and property will continue to be provided.</p>	<p>Implementation partners:</p> <p>Your views and any additional information you can provide will be collated together with other local delivery data and passed to the Environment Agency team who will be implementing the local delivery which includes the programme defined through action A.1.5.</p> <p>Landowners, the public, business and other interested groups:</p> <p>This work could happen in the first 25 years of our Plan. We would be interested to hear your views to assist us in planning the implementation of this action A.1.5. – particularly if you live, work or have interests in this area.</p>

TE2100 action plan: action zone 1 – west London

	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
 First 25 years	<p>A.1.6. To agree partnership arrangements and principles to ensure that new development in west London tidal risk area is safe, and flood risk management is factored into the planning process at all levels for the first 25 years from 2010 to 2034.</p> <p>There is need for greater clarity over methods and procedures for safety in new development behind defences. Environment Agency and local authority staff are providing advice to developers and responding to difficult Planning applications.</p> <p><i>(Cost of implementing this action not included in TE2100 Plan, but TE2100 data and information will be available to assist)</i></p>	<p>Environment Agency GLA</p> <p>Local authority (spatial and emergency planning)</p> <ul style="list-style-type: none"> • LB Richmond on Thames • LB Hammersmith & Fulham • LB Hounslow • LB Wandsworth • LB Kensington & Chelsea <p>Developers</p>	<p>TE2100 Plan and associated information informs developing Local Development Frameworks (LDFs) and future updates of existing LDFs.</p> <p>Application of PPS25 for new development and encourage adoption of property-level protection and resilience.</p> <p>Guidance for local authorities and our staff for planning applications to reflect the complexities of the west London defended tidal/ fluvial floodplain.</p>	<p>Implementation partners: 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 guidance is produced on interpretation of PPS25 in a defended area, what sort of information would be most helpful to you? Would you be able to assist the Environment Agency in preparing this guidance?</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.1.6. 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 west London tidal/ fluvial floodplain.</p>
 Middle 35 years	<p>A.1.7. To review and maintain partnership arrangements and principles from 2035 to 2069.</p> <p>As A.1.6. above</p>	As A.1.6. above	Guidance updated to reflect changing needs. The TE2100 10-yearly update to include review of action A.1.6. and recommend further action.	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 west London to continue to thrive, 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 then please let us have your views.


TE2100 action plan: **action zone 1** – west London

	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.1.8.</p> <p>To review and maintain partnership arrangements and principles from 2070 and into the 22nd century.</p> <p>As A.1.7. above</p>	As A.1.6. above	TE2100 10-yearly update to include review of action A.1.6. 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 – see above.
	<p>A.1.9.</p> <p>To maintain, enhance and replace the river defence walls and active structures through west London over the first 25 years of the Plan from 2010 to 2034.</p> <p>[Note: 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</p> <p>Landowners</p> <p>Developers and local authority planning teams</p> <p>Thames Landscape Strategy Hampton to Kew</p> <p>Thames Strategy Kew to Chelsea</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>There are major opportunities for reshaping the local landscape as part of these works.</p>	<p>This is the work which the Environment Agency does now. 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, and for partnerships which will help us achieve this.</p> <p>We would welcome any comments that you or your organisation can provide which assist us in these aims.</p>

TE2100 action plan: **action zone 1** – west London

	TE2100 recommended actions	Implementation partners	How this will be achieved	How your response can help us finalise the TE2100 Plan
	<p>A.1.10. To operate, maintain and enhance the defence walls and active structures through west London during the 35 year period of the Plan from 2035 to 2069.</p> <p>[Note: Continuing our 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</p> <p>Landowners</p> <p>Developers and local authority planning teams</p> <p>Thames Landscape Strategy Hampton to Kew</p> <p>Thames Strategy Kew to Chelsea</p>	<p>Our Planning Liaison and Development Control staff will promote these works as part of ongoing development applications.</p> <p>We will promote schemes through capital programme and they will form part of strategic and investment plans – subject to replacement/repair working arrangements as A.1.9. above.</p> <p>There are major opportunities for reshaping the local landscape as part of these works.</p>	<p>Our aims remain as A.1.9. above, but during this period, there will be a major programme of rebuilding and refurbishment of the river walls and defences through west London. This provides many opportunities for creating a better place and to plan for a better riverside environment. If you would like to help shape the future environment in this area, then please let us have your views. During this period we will be preparing for the “end of the century” wall works – see A.1.11. below and any decisions made as part of Action A.1.11. must recognise that there may be major changes from 2065.</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.1.11. To implement a programme of defence raising through west London in the years leading up to 2069.</p> <p>These are the TE2100 “end of the century” measures of raising of defence levels in west London to provide continuing tidal flood risk management for all options except a downriver barrier with locks which will not require defence raising through west London. Combination of defences raised on the existing line and some new defences on a new alignment to enhance sensitive environments would be possible for end of the century options 1, 2 and 3). There are areas where the defences could be set back, and flooding of riverside paths and park areas could be accepted. Option 4 would not require the defences to be raised in west London.</p> <p><i>(Cost of implementing this action is included in TE2100 Plan)</i></p>	<p>Environment Agency</p> <p>Landowners</p> <p>Local Authorities</p> <p>Developers</p> <p>The public</p> <p>Local interest groups</p> <p>GLA</p> <p>Floodplain users</p>	<p>The timing of defence raising will depend on the rate of sea level rise, but a maximum raise of 1 m is envisaged.</p> <p>Our Planning Liaison and Development Control staff will promote these works as part of ongoing development applications.</p> <p>We will promote schemes through capital programme.</p> <p>There are major opportunities for reshaping the local landscape as part of these works.</p> <p>The TE2100 10-yearly update will include a review of action A.1.11. and recommend further whether the end of the century recommendations have changed.</p>	<p>2065 is a long way ahead but a decision needs to be made on the TE2100 “end of the century” option. This will enable us to finalise our Plan. The end of the century options (see estuary-wide action plan – action zone 0) affect conditions in west London.</p> <p>Options 1, 2 and 3 would mean we would need a wall raising through west London in 2065. Option 4 (a barrier with locks – or “open” barrage) would mean that the walls could stay at the current levels. This may seem like the best option for west London, but it is the most expensive one and it would cause significant damage to the Estuary environment in the vicinity of the new structure.</p> <p>It is not currently one of our front-runners identified through the appraisal process. But we will not be finalising our Plan until the responses from this consultation have been collated and assessed.</p> <p>So if you have views about the value of west London’s riverside and the effect of raising the walls by as much as a metre, please share them with us in submitting your response to this action (A.1.11.).</p> <p>We will make recommendations based on conditions now, in 2009, but the final decision on the end of the century options will not be taken until 2040 or 2050.</p> <p>It is important to send us your views because the responses we receive during this consultation will set the baseline for establishing public attitudes to the west London riverside environment. This “2009 snapshot” of west London stakeholder views will form a starting point for measurement of public attitudes in the future.</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.1.12. To maintain and enhance the river defence walls and active structures through west London post-2070 and into the 22nd century.</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 Landowners Developers and local authority planning teams Thames Landscape Strategy Hampton to Kew Thames Strategy Kew to Chelsea</p>	<p>Our Planning Liaison and Development Control staff will promote these works as part of ongoing development applications.</p> <p>We will promote schemes through capital programme and they will form part of strategic and investment plans – subject to replacement/repair working arrangements as A.1.9. 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 west London riverside is increasingly enjoyed and respected by the people who live and work there and those who visit. This means that the actions established in A.1.9. and A.1.10. will be continued by whoever is looking after our environment at that time. If you have views about the long-term future management of west London's riverside, we would like to hear them.</p> <p>This consultation provides an opportunity for you to have these views recorded and presented as part of an ongoing vision statement to those who follow us 60 to 100 years from now.</p>

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