

## Appendix D - National scale assessment matrices

This appendix presents the environmental effects of the flood risk management objectives and actions (data collection and monitoring, and planning and resilience actions) that have been assessed at a national scale. The assessment has been made using a set of SEA objectives and assessment question (see Chapter 4.4 of the main environmental report).

**Table D1: Assessment of objectives**

Flood Risk Management Plan Objectives	Population and Human Health	Biodiversity	Soil	Water	Climatic factors	Material assets	Cultural Heritage	Landscape	Summary of Assessment
<p><b>Reduce the risk of flooding</b> from the &lt;source name&gt; to &lt;receptor&gt; (list key receptors if appropriate) in &lt;target area name&gt;</p>	+	+	+	+	+	+	+	+	<p><b>OBJECTIVES TO REDUCE THE RISK OF FLOODING</b></p> <p>These objectives seek to reduce overall flood risk. The objectives are compatible with all the SEA objectives. The key areas of compatibility are with the SEA objectives for population and human health and material assets; with the delivery of significant benefits in terms of protecting people, properties and infrastructure, and associated benefits to health and wellbeing.</p> <p>Reducing flood risk, and avoiding an increase in future flooding, avoids or reduces the energy use and resources needed to clean up, dry out and replace the fabric and contents of properties. These flood risk management objectives are also compatible with the SEA objectives for biodiversity, landscape and cultural heritage, where sites and assets will benefit from avoiding a reduction in flood risk.</p>

Flood Risk Management Plan Objectives	Population and Human Health	Biodiversity	Soil	Water	Climatic factors	Material assets	Cultural Heritage	Landscape	Summary of Assessment
									SEA objectives for water and soil are also compatible as avoiding an increase in flood risk will support the protection of soil resource including carbon rich soils and water bodies.
<p><b>Avoid an increase in flood risk</b> by the appropriate management and maintenance of &lt;name&gt; flood protection scheme</p>	+	+	+	+	+	+	+	+	<p><b>OBJECTIVES TO AVOID AN INCREASE IN FLOOD RISK</b></p> <p>These objectives seek to avoid a future increase in flood risk. The objectives are compatible with all the SEA objectives apart from material assets where there is a negligible relationship with reducing resource consumption.</p> <p>The key areas of compatibility are with the SEA objectives for population and human health and material assets; with the delivery of significant benefits in terms of protecting people, properties and infrastructure, and associated benefits to health and wellbeing. Reducing flood risk, and avoiding an increase in future flooding, avoids or reduces the energy use and resources needed to clean up, dry out and replace the fabric and contents of properties.</p>
<p><b>Avoid an increase in flood risk</b> in &lt;target area name&gt; by the appropriate protection, management and maintenance of &lt;type&gt; natural features in &lt; catchments or coastal area&gt;</p>	+	+	+	+	+	+	+	+	<p>These flood risk management objectives are also compatible with the SEA objectives for biodiversity, landscape and cultural heritage, where sites and assets will benefit from avoiding an increase in flood risk. SEA objectives water and soil are also compatible as avoiding an</p>

Flood Risk Management Plan Objectives	Population and Human Health	Biodiversity	Soil	Water	Climatic factors	Material assets	Cultural Heritage	Landscape	Summary of Assessment
<b>Avoid inappropriate development that increases flood risk in &lt;target area name&gt;</b>	+	+	+	+	+	+	+	+	increase in flood risk will support the protection of soil resource including carbon rich soils and water bodies.
<b>Prepare for current flood risk and/or future flooding in &lt;target area name&gt; as a result of climate change</b>	+	+	+	+	+	+	+	+	<p><b>OBJECTIVES TO PREPARE FOR CURRENT AND FUTURE FLOODING</b></p> <p>These objectives are compatible with all the SEA objectives. The key area of compatibility is with the SEA objective on climatic factors with the focus of the objectives to provide resilience in terms of future climate change.</p> <p>These flood risk management objectives are also compatible with the SEA objectives for population and human health and material assets; with the delivery of significant benefits in terms of protecting people, properties and infrastructure from future flood risk, and associated benefits to health and wellbeing. Reducing flood risk, and avoiding an increase in future flooding, avoids or reduces the energy use and resources needed to clean up, dry out and replace the fabric and contents of properties.</p> <p>These flood risk management objectives are also compatible with the SEA objectives for biodiversity, landscape and cultural heritage, where sites and assets will benefit from avoiding future flood risk. SEA objectives for water and soil are also compatible as avoiding mitigating</p>

Flood Risk Management Plan Objectives	Population and Human Health	Biodiversity	Soil	Water	Climatic factors	Material assets	Cultural Heritage	Landscape	Summary of Assessment
									future flood risk will support the protection of soil resource including carbon rich soils and water bodies.
<b>Improve data and understanding</b> of <source> flooding in <target area name>	+	0	0	0	0	0	0	0	<p><b>OBJECTIVES TO IMPROVE DATA AND UNDERSTANDING</b></p> <p>These objectives will have a predominately negligible relationship with the SEA objectives due the fact they are targeted and improving data and understanding and actively seeking to reduce risk from flooding.</p>
<b>Improve data and understanding</b> of <issue> (e.g. erosion) related to <source> flooding in <target area name>	+	+	+	+	+	+	+	+	Where the objective related to an improved understanding of specific issues (i.e. erosion related to flooding) this is compatible with SEA objectives as it supports the protection of sites and assets.
<b>Improve data and understanding</b> of the <name> flood protection asset in <target area name>	+	0	0	0	+	+	0	0	

**Table D2: Assessment – Data collection and mapping**

SEA Objective	Scores	Commentary (including indirect, direct and cumulative)	Mitigation/Recommendations
<b>Population and human health</b>	0	Given that the focus of these actions is to improve understanding of flood risk and to determine where or if new flood studies will be required, it is considered that these actions will have a neutral effect on population and human health. These actions, however, do play an important role in flood risk management. Improved flood mapping, for example, enables better land use planning, helps the public to understand the risk to their communities and to take action to protect themselves, and enables us to identify where flood risk management actions may be needed in future. This early review will provide opportunity to identify where potential benefits to population and human health could be achieved and will allow for identification of the target areas at greatest risk.	The environmental constraints review undertaken for all target areas and presented at a Local Plan District scale in Appendices E to R should be considered alongside these actions and inform any future flood studies that could arise.
<b>Biodiversity, flora and fauna</b>	0	Given that the focus of these actions is to improve understanding of flood risk and to determine where or if new flood studies will be required, it is considered that these actions will have a neutral effect on biodiversity.	
<b>Soil</b>	0	Given that the focus of these actions is to improve understanding of flood risk and to determine where or if new flood studies will be required, it is considered that these actions will have a neutral effect on biodiversity. Monitoring and survey may have benefits as it could help to better predict and mitigate potential negative effects on soil.	
<b>Water</b>	0	Given that the focus of these actions is to improve understanding of flood risk and to determine where or if new flood studies will be required, it is considered that these actions will have a neutral effect on water. A sewer flooding assessment may have benefits in helping avoid impacts to water quality.	

SEA Objective	Scores	Commentary (including indirect, direct and cumulative)	Mitigation/Recommendations
<b>Climatic factors</b>	0	Given that the focus of these actions is to improve understanding of flood risk and to determine where or if new flood studies will be required, it is considered that these actions will have a neutral effect on climatic factors.	
<b>Material assets</b>	0	Given that the focus of these actions is to improve understanding of flood risk and to determine where or if new flood studies will be required, it is considered that these actions will have a neutral effect on material assets. This early review will provide opportunity to identify where potential benefits material assets could be achieved and will allow for identification of the target areas at greatest risk.	
<b>Cultural Heritage</b>	0	Given that the focus of these actions is to improve understanding of flood risk and to determine where or if new flood studies will be required, it is considered that these actions will have a neutral effect on cultural heritage.	
<b>Landscape</b>	0	Given that the focus of these actions is to improve understanding of flood risk and to determine where or if new flood studies will be required, it is considered that these actions will have a neutral effect on landscape.	

**Table D3: Assessment – Planning and Resilience**

SEA Objective	Scores	Commentary (including indirect, direct and cumulative)	Mitigation/Recommendations
<b>Population and human health</b>	++	Significant positive effects predicted as the focus of these actions is to reduce flood risk to people and properties and infrastructure therefore with the actions supporting improving health and wellbeing. Engaging with the community and the creation of community resilience groups will also enhance wellbeing, subject to further specific environmental assessment.	The identification of environmental constraints undertaken for each target area and associated wider catchment and coastal areas, as presented for each Local Plan District in Appendices E to R. This should be used to inform the implementation of such actions, identifying any potential issues that may need to be addressed through sensitive design and mitigation, subject to further specific environmental assessment.
<b>Biodiversity, flora and fauna</b>	0	Neutral effects are predicted with the potential for some protection of natural habitat/designated sites from increased flood risk if present, although this unlikely to be of any substantive benefit, and any measures would need to be sensitively designed.	
<b>Soil</b>	0	Neutral effects are predicted.	
<b>Water</b>	0	Neutral effects are predicted.	
<b>Climatic factors</b>	+	Positive effects are predicted as the actions will support resilience in terms of future climate change. Positive effects from actions such as flood warning and resilience could help respond to sea level rise and increased rainfall.	
<b>Material assets</b>	++	Significant positive effects are predicted as the focus of these actions is to reduce flood risk to properties and infrastructure. Reducing flood risk, and avoiding an increase in future flooding, avoids or reduces the energy use and resources needed to clean up, dry out and replace the fabric and contents of properties.	

SEA Objective	Scores	Commentary (including indirect, direct and cumulative)	Mitigation/Recommendations
<b>Cultural Heritage</b>	+	Positive effects are predicted with the protection of cultural heritage assets through reduced flood risk; however, consideration should be given to the design of property resilience measures to avoid impact to the setting of historic buildings/structures.	
<b>Landscape</b>	0	Neutral effects are predicted with the potential for some protection of landscape character from increased flood risk if present, although this unlikely to be of any substantive benefit, and any measures would need to be sensitively designed.	