

5. ENVIRONMENTAL CONSIDERATIONS

5.1 Introduction

The environmental issues and the aspects of the environment that must be considered in the SEA process are identified in Schedule 2 of Article 12 of the Regulations and are listed in **Table 5-1**.

It is important to refine the scope of the SEA to gain an understanding of how many of these aspects and issues may potentially be impacted by activities arising from the implementation of the “recommended strategy” (which is effectively “The Plan”) in order to ensure key issues are focussed on at an early stage.

An initial broad assessment (see **Table 5-1**) of the likely significant effects of implementing the “recommended strategy” on each aspect of the environment has been carried out in order to identify the Primary and Secondary Key Issues on which to focus the SEA. These assessments are based on the likely magnitude of the impact and the sensitivity of the environmental aspect, national and international legislation and other relevant plans and programmes. An environmental objective against which the effectiveness of the implementation of the “recommended strategy” will be assessed is identified for each identified key issue.

Key issues and inspirational, environmental objectives as outlined in Table 6-1 may be revised following observations and submissions received on foot of the scoping consultation. Some preliminary key issues which may arise from the implementation of the various strategies of the CFRMP are outlined in **Table 5-1**.

Table 5-1: Preliminary Key Issues Arising from the Implementation of Key Strategies of the CFRMP

Option	Key Issues / Impacts
'DO MINIMUM'	
<p>This entails that no further flood defence works take place. The current management of current flood practices along the river would be kept in place. This option is used for comparing the various flood management options, in terms of their effectiveness, benefits and costs.</p> <p>Repair of breeches and continue of current management practices</p>	<p>Since no new flood measures would be put in place the negative impacts seen from previous flood events would continue to occur</p> <p>Climate change would further increases the risk of flooding</p> <p>Effectiveness of existing flood measures may gradually be rendered more and more ineffective.</p> <p>There would be an increase in impacts of flooding on safety and communities.</p> <p>Flooding can result in intermittent discharges from Combined Sewer Overflow (CSO's) and Surface Water Outfall (SWO'S) and storm tanks can lead to adverse affects on the quality of water in urban areas (Foundation of water Research, 1998). These impacts include; a reduction of dissolved Oxygen (DO) leading to degradation of dissolved Biochemical Oxygen Demand (BOD) and an increase in river concentrations of ammonia, bacteria, Chemical Oxygen Demand (COD) and suspended sediments as well as heavy metals and other toxic substances (Foundation of Water Research, 1998). If flood defence works are not put in place there is an increased risk of such adverse impacts occurring.</p> <p>If no flood defence measures are put in place then the likelihood of habitat loss from the inundation of flood waters is increased. The inundation of flood waters to wetlands can reduce their biodiversity (Foundation for Water Research, 1998). Flooding can reduce the level of dissolved oxygen (DO) in a river and aquatic vegetation can be sensitive to such changes (Foundation for Water Research, 1998)</p> <p>There would be considerable economic impacts through damage to infrastructure, industry and housing.</p> <p>Designated areas, recreational areas and public parks would be affected by increased flooding.</p>

Option	Key Issues / Impacts
STORAGE/ATTENUATION SCHEME	
<p>A regional storage attenuation scheme that would store run-off from the catchment. Offline storage may also be created which involves the creation of embankments which are designed to overtop at a certain level.</p>	<p>The insertion of an attenuation/storage scheme may allow flood defences to be lowered downstream by reducing the river flow downstream. This may have a negative effect on habitats downstream during drier spells. Change in landscape character and views along the river Economic implications may arise such as compensation to landowners Large amounts of land may be required and problems may arise with location. May be problems for fish movement created from on line storage. Significant biodiversity benefits could be gained by extending offline storage to the natural floodplain Habitats and fisheries may be created.</p>
EXISTING RESERVOIRS	
<p>Additional storage may be created in existing reservoirs.</p>	<p>May lead to problems with the water supply. May impact on the current biodiversity existing reservoir. Improved weather predictions would be essential. System of reservoir management for flood and drought conditions to be put in place.</p>
DEFENCES	
<p>This would involve raising existing or constructing new flood defences. Removal of existing culverts from tributaries.</p>	<p>May have negative impacts on water quality during the construction phase from potentially polluting material such as cement, concrete, diesel, hydraulic fluid or paint. Short term negative impacts on the surrounding ecology. Including impacts to flow rates. Decrease the risk of flooding and have overall benefit human health, population and material assets Potential for habitat creation e.g. incorporation of artificial holts for otter populations.</p> <p>Positive effects for ecology by the removal of existing culverts, which would facilitate increased fish movements (WFD& GES, Geomorphology).</p>

Option	Key Issues / Impacts
CHANNEL WIDENING	
<p>Widening and deepening of the river channel</p>	<p>Destruction of river channel and bank habitats causing impacts to biodiversity and fisheries. Water quality problems during the construction phase including the potential release of contaminants Potential impacts on bridges, weirs and monuments adjacent to the river. Loss to visual and recreation facilities. Potential for habitat creation, e.g. including the incorporation of artificial holts for otter populations. Restrictions to construction work due to spatial restriction from nearby properties/private land. Creation of pools and riffles for fish. Impacts on flow regime at times of medium and low flows.</p>
ALTERING BRIDGES	
<p>Bridges may create significant restrictions to flow during flood events. Bridges may get blocked with debris carried by flood waters. Modifications may involve the underpinning or raising the soffits on bridges, widening bridges, removal of central piers and removal of screens on tributaries.</p>	<p>Disruption to road and traffic users during construction Loss of heritage, dependant on the heritage value of the bridge. Loss of habitats; Bridge improvements and other maintenance works may displace bat habitats. Loss to visual and recreation facilities. Potential for habitat creation, roosts for bats Possible disturbance to river during construction Impacts to Protected Structures, National Monuments Potential landscape and visual impacts</p>
ALTERING WEIRS	
<p>Weirs can increase the flow and reduce flooding in one section but may possibly increase the flow in another section. Alterations or removal of weirs may be identified as a key strategy in the CFRMP.</p>	<p>Loss of heritage, dependent on the heritage value of the weir. Loss of habitats; weir alterations and other maintenance works may destroy habitats. Potential for habitat creation. Problems may arise with the ownership of weirs within the catchment. Economic implications may arise such as compensation to landowners.</p>

Option	Key Issues / Impacts
LAND-USE MANAGEMENT, PLANNING AND DEVELOPMENT CONTROL	
<p>Certain areas may be designated to be free from future planning, so as to increase infiltration and reduce run-off. The use of sustainable drainage systems to reduce run-off and increase infiltration in future developments. Access to the river for key maintenance works and increase in public amenity areas. The use of filter strips and swales, filter drains and permeable and porous pavements.</p>	<p>Increase to the use of green space as public amenity areas Potential to plant trees in areas designated free from planning and thus increasing habitats and biodiversity. New trees planted will be away from the riverbank. Decrease in run-off and hence a reduction in flooding. Construction of truck paths at key points along the river for river maintenance can be used as pedestrian/ cycle lanes when not in use. Potential for the creation of new pedestrian walk ways and cycle lanes</p>