

River Tame Flood Risk Management Strategy

**Environmental Report
May 2009**

Contents

APPENDIX C: Results of Option Screening

**APPENDIX D: Summary of Options Appraisal -
Individual Flood Cells**

APPENDIX C: Results of Option Screening

Initial Option Number:	IO 1	IO 2	IO 3	IO 4	IO 5	IO 6
Details of Option:	Do Nothing	Do Minimum	Re-engineer / re-design existing defences	Raise existing defences	Use temporary defences	Utilise third party structures as flood defences
Technical Objective 1: Is the option likely to reduce flood risk and / or flood damage caused by the River Tame?			Yes	Yes	Yes	No. EA needs to adopt third party structures if shown to be acting as key defences
Technical Objective 2: Is this option something that could be promoted within the remit of the Tame Strategy?			Yes. Existing defences already accepted. Re-design should provide improvements.	Yes. Existing defences accepted. Raising defences likely to be viewed favourably by public in high risk areas.	No. EA policy moving away from use of temporary defences, due to potential problems with storage, transport etc. Flashy catchment – flood warning lead time probably not suitable	No.
Economic Objective 1: Are the costs associated with the option broadly comparable with the benefits in terms of flood damages avoided?			Yes	Yes	Yes	Yes
Environmental Objective 1: Is the option likely to cause significant environmental impacts that could not be mitigated?			No. No significant adverse effects likely. Any re-design of defences could incorporate aesthetic improvements.	No	No. Any impacts (e.g. visual) would only be temporary therefore unlikely to be significant.	No. Structures exist at present therefore no additional environmental impacts would occur.
Environmental Objective 2: Is there potential for the option to be sustainable? "Sustainable schemes are defined as schemes which take account of the interrelationships with other defences, developments and processes within a catchment and which avoid as far as possible tying future generations into inflexible and expensive options for defence". (Defra PAG5)			No. No significant adverse effects likely. Any re-design of defences could incorporate aesthetic improvements.	No	No. Any impacts (e.g. visual) would only be temporary therefore unlikely to be significant.	No. Structures exist at present therefore no additional environmental impacts would occur.
Other Factors:				Potential for adverse effects (visual impact). However significance of effects would depend on degree of additional height required and length of defences affected.		
Conclusion: Should the option be taken forward for further assessment?	Yes – this option is always considered as a baseline against which the other options can be compared	Yes – this option is always considered as a baseline against which the other options can be compared	Yes. Use of existing defences would minimise material required for construction. Does not restrict long term options.	Yes. Some construction work required. However, defence height increase can be designed to provide protection for medium – long term.	No. Significant manpower needed each time required. Unlikely to be long term solution.	Yes. Use of existing structures minimises materials required for construction. Unlikely to restrict long term options.

Supporting Evidence:	N/A	N/A	River Tame Strategy Phase 2 indicates that this will be a viable option in places	River Tame Strategy Phase 2 indicates that this will be a viable option in places	Current EA Policy suggests a move away from these. Pitt Review states should not be a long term solution, Plus the Tame Catchment is too flashy	Modelling has shown that some 3rd party embankments / structures / walls have been identified as critical and have a significant impact if removed - see Tame SFRM Undefended Runs for evidence.
Revised Option Number (if taken forward) (and sub-option number)	Option 1	Option 2	Option 6 (6a)	Option 6 (6a)	Option 6 (6b)	Option 6 (6c)

Initial Option Number:	IO 7	IO 8	IO 9	IO 10	IO 11	IO 12
Details of Option:	Optimise use of existing storage	Increase existing storage areas	Create new storage areas	Utilise lakes at Lea Marston	Tributary storage	Create bypass/ relief channels
Technical Objective 1: Is the option likely to reduce flood risk and / or flood damage caused by the River Tame?	Yes	Yes	Yes	No. This area is already flooded during the higher return period events. Very high embankments would have to be created to store water at this location for large flood events. This would also alter the rating at the gauge. The Purification Scheme may also be compromised.	Yes	Yes
Technical Objective 2: Is this option something that could be promoted within the remit of the Tame Strategy?	Yes. Existing storage areas currently accepted. Optimising their use unlikely to be viewed unfavourably.	Yes. Existing storage areas currently accepted. Optimising their use unlikely to be viewed unfavourably.	Yes If technical benefits can be demonstrated, likely to be viewed favourably due to associated environmental/ social enhancement opportunities.	No. Impact on function of lake in improving water quality would need to be investigated.	Yes. If shown to be technically beneficial, could be promoted through proposed large scale developments (e.g. Anker Valley).	Yes. May be viewed unfavourably due to e.g. potential H&S impacts. However, possible to promote as joint solution with Network Rail in some areas.
Economic Objective 1: Are the costs associated with the option broadly comparable with the benefits in terms of flood damages avoided?	Yes	Yes - potential for partnership approach.	Probably - potential for partnership approach / RSPB, Wildlife Trusts, Sports and recreation areas.	No - limited scope for additional storage	Probably - potential for partnership approach / RSPB, Wildlife Trusts, Sports and recreation areas	Detailed flood cell modelling required
Environmental Objective 1: Is the option likely to cause significant environmental impacts that could not be mitigated?	No. These storage areas exist at present. Optimising use unlikely to result in new environmental impacts.	No. Potential impacts depend on nature of ground that would be used to create additional area. Potential adverse effects relate to e.g. presence of contaminated land, however these could be mitigated. Environmental enhancement opportunities exist.	No. Potential impacts depend on nature of ground that would be used to create new areas. Potential adverse effects relate to e.g. presence of contaminated land, however these could be mitigated. Environmental enhancement opportunities exist.	No. No significant adverse effects expected although it could conflict with current purification role function.	No. Environmental impacts depend on areas selected (e.g. for River Blythe SSSI any options need to be agreed with Natural England in order to avoid/mitigate impacts). Potential environmental enhancement opportunities exist.	No. Potential adverse impacts to e.g. scheduled structures (e.g. Water Orton bridge) could be mitigated through working closely with English Heritage.
Environmental Objective 2: Is there potential for the option to be sustainable? "Sustainable schemes are defined as schemes which take account of the interrelationships with other defences, developments and processes within a catchment and which avoid as far as possible tying future generations into inflexible and expensive options for defence". (Defra PAG5)	Yes. Optimising existing storage areas unlikely to require significant additional construction work. Storage likely to contribute to flood defence into the future.	Yes. Some additional construction work required. However, increasing existing storage areas likely to contribute to flood defence into the future.	Yes. Some additional construction work required. However storage areas likely to contribute to flood defence into the future.	Yes. No significant additional construction required. Storage areas likely to contribute to flood defence into the future.	Yes. Some additional construction work likely to be required. However storage areas likely to contribute to flood defence into the future.	Unsure. Potentially high costs and construction impacts. Also need to asses impact on flood risk to downstream areas.
Other Factors:						

Conclusion: Should the option be taken forward for further assessment?	Yes - this is a strategically sustainable option for the catchment.	Yes - this is a strategically sustainable option for the catchment.	Yes - this is a strategically sustainable option for the catchment.	No.	Yes - undertake initial investigations	Yes - should not be ruled out at this stage. Localised assessments may indicate that this is a potential option.
Supporting Evidence: Details of Supporting Evidence (if applicable)	N/A - this will become Option 4 for the Tame Strategy. Ideally this will solve all flood issues in the catchment.	N/A - this will become Option 5 for the Tame Strategy. If Option 4 doesn't solve all flood issues in the catchment, then seek to increase existing storage areas.	N/A - this will become part of Option 5 for the Tame Strategy. If Option 5a doesn't solve all flood issues in the catchment, then seek to create new storage areas.	N/A Text in this table is sufficient	MapInfo investigations that HG / LG has undertaken.	N/A at this stage - details will come out of benefit cost assessment if this is selected for further analysis locally.
Revised Option Number (if taken forward)	Option 4	Option 5 (5a)	Option 5 (5b)	N/A	Option 5 (5c)	Option 6 (6d)

Initial Option Number:	IO 13	IO 14	IO 15	IO 16	IO 17
Details of Option:	Open up culverts	Enlarge bridges / remove obstructions	Dredge/ de-silt river	Enlarge channels (including set back defences e.g. to flood agricultural land).	Sign more people up to FWD
Technical 1: Is the option likely to reduce flood risk and / or flood damage caused by the River Tame?	Yes	Yes	Yes	Yes	Yes
Technical 2: Is this option something that could be promoted within the remit of the Tame Strategy?	Yes. May be viewed unfavourably due to e.g. potential H&S impacts.	Yes. Unlikely to be viewed unfavourably, provided work closely with owners / other stakeholders (e.g. Highways Agency, English Heritage).	No.	Yes	Yes
Economic 1: Are the costs associated with the option broadly comparable with the benefits in terms of flood damages avoided?	Detailed flood cell modelling required	Detailed flood cell modelling required	No Licenced landfill costs would be too high	Probably - benefit cost assessments will provide further information	Yes
Environmental 1: Is the option likely to cause significant environmental impacts that could not be mitigated?	No. No significant adverse environmental impacts identified. Potential environmental benefits (e.g. water quality, biodiversity, amenity).	No. Potential adverse impacts to e.g. scheduled structures (e.g. Water Orton bridge) could be mitigated through working closely with English Heritage.	Yes. Extent of environmental impacts (e.g. on water quality and ecology) would depend on nature and frequency of dredging.	Unsure. Potential adverse effects on channel morphology, depending on how enlargement implemented. Potential impacts depend on nature of ground e.g. presence of contaminated land, however these could be mitigated. Environmental enhancement opportunities exist.	No.
Environmental 2: Is there potential for the option to be sustainable? "Sustainable schemes are defined as schemes which take account of the interrelationships with other defences, developments and processes within a catchment and which avoid as far as possible tying future generations into inflexible and expensive options for defence". (Defra PAG5)	Yes. Some construction work required. However unlikely to restrict long term solutions for flood defence. Potential issues regarding increased velocities and erosion.	Yes. Some construction work required. However unlikely to restrict long term solutions for flood defence. Potential issues regarding increased velocities and erosion.	No. Dredging is not sustainable in long term as must be carried out on regular basis.	Unsure. Impact on flood risk for downstream areas needs to be considered. In long term drive to more naturalised river channels, therefore this option may create additional work for future.	Yes. No adverse impacts on future flood risk management expected.
Other Factors:					
Conclusion: Should the option be taken forward for further assessment?	Yes	Yes	No	Yes	Yes

Supporting Evidence: Details of Supporting Evidence (if applicable)	Sensitivity analysis modelling undertaken for Early Warning No. 8	Sensitivity analysis modelling undertaken for Early Warning No. 8	N/A Text in this table is sufficient	Would require additional studies outside of the original Tame Strategy scope such as geomorphological assessments	
Revised Option Number (if taken forward)	Option 6 (6e)	Option 7 (7a & 7b)	N/A	Option 6 (6g)	Option 8 (8a)

Initial Option Number:	IO 18	IO 19	IO 20	IO 21	IO 22	IO 23
Details of Option:	Use planning controls to limit redevelopment of land within floodplain and promote 'Blue Corridor'	Improve sewerage network to increase storage	Use canal as flood storage channel	Alter farming / land management practices to reduce runoff	Promote greater use of SUDS to reduce surface water run-off	Investigate opportunities for flood storage associated with aggregate workings restoration.
Technical 1: Is the option likely to reduce flood risk and / or flood damage caused by the River Tame?	Yes	No	No - canals have very limited free board and have waste weirs into watercourses	No - upper catchment is heavily urbanised	Yes	Possibly as flood storage areas could be created. However, would benefit River Trent not River Tame as only viable locations are downstream of Elford
Technical 2: Is this option something that could be promoted within the remit of the Tame Strategy?	Yes. Would require 'buy-in' of range of stakeholders (esp. planning authorities). However meets EA and Government policies (e.g. MSFW).	No. Would require 'buy in' of Severn Trent Water and Ofwat - but not practical anyway. Capacity required would be unfeasible	Unsure. Would require 'buy in' of British Waterways plus canal users.	Yes. Pilot projects for such schemes in place in nearby areas. WFD / diffuse pollution reduction may provide additional driver for promotion.	Yes.	Yes but as a policy recommendation. Would require 'buy in' from aggregate companies, planning authorities.
Economic 1: Are the costs associated with the option broadly comparable with the benefits in terms of flood damages avoided?	Yes	No	N/A	No	Yes	No for River Tame Catchment
Environmental 1: Is the option likely to cause significant environmental impacts that could not be mitigated?	No Potential adverse impacts on e.g. water quality if contaminated land in floodplain. However this could be mitigated.	No. No significant adverse effects expected that cannot be mitigated. However changes to sewer network generally result in significant disruption in short term. Potential water quality improvements through reduced overflow from sewer network.	Unsure. Potential impacts on water quality of canal through transfer of river water into canal at high flows.	No. No significant adverse impacts anticipated. Potential environmental benefits (e.g. water quality, soils).	No. No significant adverse impacts anticipated. Potential environmental benefits (e.g. water quality).	No. No significant adverse impacts anticipated. Potential associated environmental benefits (e.g. landscape, habitat creation).
Environmental 2: Is there potential for the option to be sustainable? "Sustainable schemes are defined as schemes which take account of the interrelationships with other defences, developments and processes within a catchment and which avoid as far as possible tying future generations into inflexible and expensive options for defence". (Defra PAG5)	Yes. Most sustainable long term flood risk management option is to create space for water through such initiatives.	No. Increased sewerage network storage capacity likely to require significant construction / disruption and high costs.	No. Not with Climate Change implications. Will move flood risk to additional areas.	Yes. Option will not restrict options available in future.	Yes. Option will not restrict options available in future.	Yes. Option will not restrict options available in future.

Other Factors:		Discussions with Severn Trent Water have confirmed this is an unacceptable option- see document - "Questions for Severn Trent - Responses.doc" (S:\Projects\Water\WNRTSU - Tame Strategy Update\Docs\Incoming\Severn Trent)				
Conclusion: Should the option be taken forward for further assessment?	Yes - should be taken forward, but unless clear areas come out of the benefit cost assessment, this will be a policy recommendation.	No	No	Not applicable to Tame Catchment.	Yes as a policy recommendation	Yes as a policy recommendation
Supporting Evidence: Details of Supporting Evidence (if applicable)	N/A	N/A	N/A	Only potential areas would be between Birminghamd and Tamworth, and downstream of Tamworth - however, these areas are only suitable for storage.	Pitt Review and Local SFRA Reports	Halcrow Uttoxeter Quarry Study 2008 for Aggregate Industries
Revised Option Number (if taken forward)	Option 8 (8b)	N/A	N/A	N/A	Option 8 (8c)	Option 8 (8d)

Initial Option Number:	IO 24	IO 25	IO 26	IO 27	IO 28	IO 29
Details of Option:	Improve warning / flood proofing information for new developments in floodplain	Increase Infiltration - building design, green roofs, permeable land cover.	Flood Resilience measures to properties	Development Control - prevent inappropriate development in the floodplain	Improved Management of Flood Events	Use roads as a carrier - manage flow on roads to carry water and then allow back to river
Technical 1: Is the option likely to reduce flood risk and / or flood damage caused by the River Tame?	Yes - reducing risk to property damage and life	Possibly	Yes - reducing risk to property damage and life	Yes	Yes	No
Technical 2: Is this option something that could be promoted within the remit of the Tame Strategy?	Yes as a policy recommendation	Yes as a policy recommendation	Yes as a policy recommendation	Yes as a policy recommendation - this should be happening at present	Yes as a policy recommendation	No
Economic 1: Are the costs associated with the option broadly comparable with the benefits in terms of flood damages avoided?	Yes	N/A - Costs would be with developers / house owners.	Yes	Yes	Yes	N/A
Environmental 1: Is the option likely to cause significant environmental impacts that could not be mitigated?	No. No significant adverse impacts anticipated.	No. No significant adverse impacts anticipated.	No. No significant adverse impacts anticipated.	No	No	High probability of contamination and clean up issues

Environmental 2: Is there potential for the option to be sustainable? "Sustainable schemes are defined as schemes which take account of the interrelationships with other defences, developments and processes within a catchment and which avoid as far as possible tying future generations into inflexible and expensive options for defence". (Defra PAG5)	Yes. Option will not restrict options available in future.	Yes. Option will not restrict options available in future.	Yes. Option will not restrict options available in future.	Yes	Yes	Unsure
Other factors						Health and Safety Issues, Lack of access for emergency services, conflicts with PPS25 policies for having dry access during flood events.
Conclusion: Should the option be taken forward for further assessment?	Yes as a policy recommendation	Yes as a policy recommendation	Yes as a policy recommendation	Yes as a policy recommendation	Yes as a policy recommendation	No
Supporting Evidence: Details of Supporting Evidence (if applicable)						Based on modelling and mapping results to date, knowledge gained on Phase 2, and other Halcrow studies such as Woodborough PSR.
Revised Option Number (if taken forward)	Option 8 (8e)	Option 8 (8f)	Option 8 (8e)	Option 8 (8g)	Option 8 (8h)	N/A

APPENDIX D: Summary of Options Appraisal – Individual Flood Cells

Table 25: Flood Cell 1

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate beneficial (++)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Minor beneficial (+)	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Moderate adverse (--)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would achieve the greatest positive benefits against the human health and population and material assets objectives. However there would be adverse effects against the landscape and visual objective.</p>							

Table 26: Flood Cell 2

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
The preferred option for this reach, taking into account environmental criteria only is Option 5: Increase Storage . This option would achieve the greatest number of positive benefits against a number of objectives and would not result in any moderate or major adverse effects.							

Table 27: Flood Cell 3

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Moderate beneficial (++)	Minor beneficial (+)
	To contribute to achieving UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Moderate beneficial (++)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Moderate adverse (--)	Minor beneficial (+)	Minor beneficial (+)	Neutral	Neutral
	To protect and enhance recreation and amenity facilities	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Minor beneficial (+)	Minor beneficial (+)	Neutral	Minor beneficial (+)	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)	Neutral	Minor adverse (-)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	Yes	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 5: Increase Storage. This option would achieve the greatest number of positive benefits, including two moderate beneficial effects against the biodiversity objectives. It would not result in any moderate or major adverse effects.</p>							

Table 28: Flood Cell 4

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	To contribute to achieving UKBAP and local BAP objectives	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate beneficial (++)
	To protect and enhance recreation and amenity facilities	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	Yes	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. There is little to distinguish between the options in this cell, however Option 6 has moderate beneficial impacts against the human health and population objective. It would not result in any moderate or major adverse effects.</p>							

Table 29: Flood Cell 5

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
There is little to distinguish between the options in this cell. However the option with the greatest number of positive effects and least number of negative effects is Option 5: Increased Storage .							

Table 30: Flood Cell 6

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Moderate adverse (-)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	N/A	N/A	No	Yes
Economic assessment							✓
Preferred option (overall)							✓
There is little to distinguish between the options in this cell. However the preferred option, in terms of protection of people and property is Option 6: Localised Improvements . However this option does have adverse effects against the landscape and visual objective.							

Table 31: Flood Cell 7

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
There is little to distinguish between the options in this cell. However the option with the greatest number of positive effects and least number of negative effects is Option 5: Increased Storage .							

Table 32: Flood Cell 8

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
There is little to distinguish between the options in this cell. However the option with the greatest number of positive effects and least number of negative effects is Option 5: Increased Storage .							

Table 33: Flood Cell 9

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate beneficial (++)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Minor beneficial (+)	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment							✓
Preferred option (overall)							✓
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. There is little to distinguish between the options in this cell, however Option 6 has moderate beneficial impacts against the human health and population objective. It would not result in any moderate or major adverse effects.</p>							

Table 34: Flood Cell 10

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect and enhance recreation and amenity facilities	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Moderate adverse (--)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
Preferred option (environment)			✓				
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
There is little to distinguish between the options in this cell and only Option 1 would result in moderate adverse effects. Option 2: Do Minimum achieves the greatest number of positive effects.							

Table 35: Flood Cell 11

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Major adverse (---)	Moderate adverse (--)	Major adverse (---)	Moderate adverse (--)	Moderate beneficial (++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Moderate adverse (--)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would achieve the greatest positive benefits against the human health and population and material assets objectives. However there would be adverse effects against the landscape and visual objective.</p>							

Table 36: Flood Cell 12

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Moderate beneficial (++)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major beneficial (+++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Major adverse (---)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment							✓
Preferred option (overall)							✓
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would achieve the greatest positive benefits against the human health and population and material assets objectives. However there would be adverse effects against the landscape and visual objective.</p>							

Table 37: Flood Cell 13

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Major adverse (---)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
Preferred option (environment)				✓			
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 3: Maintain existing standard of protection. There is little to distinguish between the options. Options 1 and 2 would result in major adverse impacts, and Options 4 and 5 are not technically feasible in this cell.</p>							

Table 38: Flood Cell 14

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Major adverse (---)	Major beneficial (+++)	Major beneficial (+++)	Moderate beneficial (++)	Major beneficial (+++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Moderate adverse (--)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
There is little to distinguish between Options 3-6 in this cell. However the option with the greatest number of positive effects and least number of negative effects is Option 5: Increased Storage .							

Table 39: Flood Cell 15

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Moderate adverse (--)	Major beneficial (+++)	Minor beneficial (+)
	To contribute to achieving UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Major beneficial (+++)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Major adverse (---)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate beneficial (++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)	Neutral	Minor adverse (-)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	Yes	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 5: Increase Storage. This option would achieve major positive benefits against the biodiversity objectives, although under this option there would continue to be negative effects against the infrastructure objective.</p>							

Table 40: Flood Cell 16

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Moderate beneficial (++)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Moderate beneficial (++)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor beneficial (+)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Moderate adverse (--)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	Yes	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
The preferred option for this reach, taking into account environmental criteria only is Option 5: Increase Storage . This option would achieve moderate positive benefits against the biodiversity objectives, and no moderate or major adverse effects.							

Table 41: Flood Cell 17

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Major adverse (---)	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Moderate beneficial (++)
	To protect and enhance recreation and amenity facilities	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Major adverse (---)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment							✓
Preferred option (overall)							✓
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would achieve the greatest positive benefits against the human health and population objectives. However there would be adverse effects against the landscape and visual objective.</p>							

Table 42: Flood Cell 18

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)	Neutral	Minor adverse (-)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
Preferred option (environment)			✓				
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
There is little to distinguish between the options in this cell and only Option 1 would result in moderate adverse effects. Option 2: Do Minimum achieves the greatest number of positive effects.							

Table 43: Flood Cell 19

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Major adverse (—)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment							✓
Preferred option (overall)							✓
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would achieve the greatest positive benefits against the human health and population objectives. However there would be adverse effects against the landscape and visual objective.</p>							

Table 44: Flood Cell 20

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major beneficial (+++)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Major adverse (---)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment							✓
Preferred option (overall)							✓
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. All other options would have major adverse effects against the human health and population objective. However this objective will result in adverse effects against the landscape and visual objective.</p>							

Table 45: Flood Cell 21

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate beneficial (++)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Major beneficial (+++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Moderate beneficial (++)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Major adverse (---)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements . This option would have the greatest positive effects against the human health and population, material assets and archaeological objectives. However this objective will result in adverse effects against the landscape and visual objective.							

Table 46: Flood Cell 22

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major beneficial (+++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Major adverse (---)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	N/A	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would have the greatest positive effects against the human health and population and material assets objectives. However this objective will result in adverse effects against the landscape and visual objective.</p>							

Table 47: Flood Cell 23

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major beneficial (+++)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Moderate beneficial (++)	Moderate beneficial (++)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major beneficial (+++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Major adverse (---)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment							✓
Preferred option (overall)							✓
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would have the greatest positive effects against the human health and population, material assets and archaeological objectives. However this objective will result in adverse effects against the landscape and visual objective.</p>							

Table 48: Flood Cell 24

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate beneficial (++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
There is little to distinguish between the options in this flood cell. However the preferred option taking into account environmental criteria is Option 6: Localised improvements , as this option will achieve positive benefits against the infrastructure objective.							

Table 49: Flood Cell 25

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Major adverse (---)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Major beneficial (+++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)	Neutral	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Major adverse (---)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would have the greatest positive effects against the human health and population, material assets and archaeological objectives. However this objective will result in adverse effects against the landscape and visual objective.</p>							

Table 50: Flood Cell 26

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Moderate beneficial (++)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Neutral	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Moderate adverse (--)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)	Moderate beneficial (++)	Minor beneficial (+)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 5: Increase Storage. This option would achieve moderate positive benefits against the biodiversity and landscape character objectives. The adverse impacts against the material assets objective would be the same with any of options 3-6.</p>							

Table 51: Flood Cell 27

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Moderate beneficial (++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Neutral	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements . This option would have the greatest positive effects against the human health and population and material assets objectives.							

Table 52: Flood Cell 28

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Moderate beneficial (++)	Minor beneficial (+)
	To contribute to achieving UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To enhance biodiversity in the urban environment	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect existing material assets	To protect infrastructure	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)	Major beneficial (+++)	Minor beneficial (+)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment							✓
Preferred option (overall)							✓
<p>The preferred option for this reach, taking into account environmental criteria only is Option 5: Increase Storage. This option would achieve moderate positive benefits against the biodiversity and landscape character objectives. The adverse effects against the population, material assets and land quality objectives would be the same with all options.</p>							

Table 53: Flood Cell 29

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect existing material assets	To protect infrastructure	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Moderate beneficial (++)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
Preferred option (environment)				✓			
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 3: Maintain existing standard of protection. There is little to distinguish between the options. Option 5 could not be implemented in this cell as no suitable areas have been identified. Option 3 is preferable to Option 6 against the land quality objective.</p>							

Table 54: Flood Cell 30

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect and enhance recreation and amenity facilities	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Minor adverse (-)	Minor adverse (-)	Neutral	Neutral	Neutral	Neutral
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect existing material assets	To protect infrastructure	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
Preferred option (environment)				✓			
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
There is little to distinguish between the options in this cell. Options 1 and 2 have the greatest number of positive effects and the extent of the adverse impacts of Option 2 is less than Option 1. Option 2: Do Minimum is therefore the preferred option taking into account environmental criteria.							

Table 55: Flood Cell 31

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To contribute to achieving UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To enhance biodiversity in the urban environment	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Moderate adverse (--)	Major beneficial (+++)
	To protect and enhance recreation and amenity facilities	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Neutral	Neutral	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Moderate beneficial (++)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would have the greatest positive effects against the human health and population objectives. However this objective will result in adverse effects against the landscape and visual objective.</p>							

Table 56: Flood Cell 32

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Major adverse (---)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To protect and enhance recreation and amenity facilities	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Neutral	Neutral	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor beneficial (+)	Minor beneficial (+)	Neutral	Neutral	Neutral	Neutral
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	N/A	N/A	No	Yes
Economic assessment							✓
Preferred option (overall)							✓
The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements . This option would have the greatest number of positive effects and no major or moderate adverse effects.							

Table 57: Flood Cell 33

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To contribute to achieving UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Moderate beneficial (++)	Minor adverse (-)
	To enhance biodiversity in the urban environment	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Minor adverse (-)	Major beneficial (+++)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Minor beneficial (+)	Minor beneficial (+)	Neutral	Neutral	Minor beneficial (+)	Minor beneficial (+)
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Moderate adverse (--)	Minor adverse (-)
	To protect designated archaeological and historic features within the floodplain	Moderate adverse (--)	Moderate adverse (--)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor beneficial (+)	Minor beneficial (+)	Neutral	Neutral	Major beneficial (+++)	Moderate adverse (--)
Preferred option (environment)						✓	
Technical feasibility		Yes	Yes	Yes	N/A	Yes	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>The preferred option for this reach, taking into account environmental criteria only is Option 5: Increase Storage. This option would achieve moderate/ major positive benefits against the biodiversity and landscape character objectives, however would result in adverse effects against the human health and population and archaeology objectives.</p>							

Table 58: Flood Cell 34

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To enhance biodiversity in the urban environment	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
	To protect and enhance recreation and amenity facilities	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Moderate adverse (--)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)	Minor adverse (-)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect existing material assets	To protect infrastructure	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Minor beneficial (+)	Minor adverse (-)	Minor adverse (-)	Minor beneficial (+)	Minor beneficial (+)
	To protect designated archaeological and historic features within the floodplain	Moderate adverse (--)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Preferred option (environment)			✓				
Technical feasibility		Yes	Yes	Yes	N/A	No	Yes
Economic assessment				✓			
Preferred option (overall)				✓			
<p>There is little to distinguish between Options 2- 5 & 6 in this flood cell. As option 5 cannot be implemented within the flood cell the preferred option taking into account environmental criteria is Option 2 as this will require less physical works than Option 6.</p>							

Table 59: Flood Cell 35

Environmental Objective	Sub-objectives	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
To protect and where possible enhance biodiversity	To avoid damage to designated wildlife sites	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	To <i>contribute to achieving</i> UKBAP and local BAP objectives	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
	To enhance biodiversity in the urban environment	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
To avoid, and where possible enhance, effects on human health and population	To protect people and their property from the adverse effects of flooding	Major adverse (---)	Moderate adverse (--)	Moderate adverse (--)	Moderate adverse (--)	Minor adverse (-)	Moderate beneficial (++)
	To protect and enhance recreation and amenity facilities	Major adverse (---)	Major adverse (---)	Moderate adverse (--)	Major adverse (---)	Major adverse (---)	Major adverse (---)
To protect and enhance land quality	To protect valuable land from adverse effects of flooding and safeguard soil quality and quantity	Major adverse (---)	Major adverse (---)	Moderate adverse (--)	Major adverse (---)	Major adverse (---)	Major adverse (---)
To protect and enhance water	Contribute to maintaining or improving water quality standards where feasible. Support achievement of GES/GEP under the WFD	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	Protect geomorphological features for the river and floodplain and, where possible, provide opportunities for enhancement.	Neutral	Neutral	Moderate beneficial (++)	Neutral	Minor beneficial (+)	Minor beneficial (+)
To protect existing material assets	To protect infrastructure	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)	Minor beneficial (+)
To protect and enhance cultural heritage features	To minimise adverse effects on undiscovered or buried archaeology	Minor beneficial (+)	Moderate beneficial (++)	Moderate beneficial (++)	Moderate beneficial (++)	Major beneficial (+++)	Major beneficial (+++)
	To protect designated archaeological and historic features within the floodplain	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)	Major adverse (---)
To protect and enhance landscape character/visual amenity	To avoid detrimental effects and enhance landscape character objectives	Minor beneficial (+)	Minor beneficial (+)	Major beneficial (+++)	Minor beneficial (+)	Neutral	Minor adverse (-)
Preferred option (environment)							✓
Technical feasibility		Yes	Yes	N/A	N/A	No	Yes
Economic assessment				✓			.
Preferred option (overall)			.	✓			.
<p>The preferred option for this reach, taking into account environmental criteria only is Option 6: Localised Improvements. This option would have the greatest positive effects against the human health and population and archaeological objectives and the negative effects would be similar for most other options.</p>							