River Thames Scheme

Supplementary Consultation 3 September to 7 October 2024

Ferris Meadow Lake Options Appraisal Report

Appendix B - Technical and Feasibility Appraisal Matrix

APPENDIX B: TECHNICAL AND FEASIBILITY APPRAISAL MATRIX

1.1 Impact on Existing Structures Appraisal Matrix

IMPACT ON EXISTING STRUCTURES APPRAISAL MATRIX
Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001

Impact to Existing Structures RAG rating definitions:

Red: Significant changes to existing structures required
Amber: Some changes to existing structures required
Green: No changes to existing structures required

Option 1 - Retain current flood relief channel alignment through Ferris Meadow Lake		**Option 2 - Direct the flood relief channel north of Ferris Meadow Lake into the Chap**		**Option 3 - Divert the flood relief channel along the west side of Ferris Meadow Lake**		**Option 4 - Divide the flood relief channel between the Chap and west of Ferris Meadow Lake**		**Option 5 - Underground engineered solution.**	
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
There are no impacts to existing structures.	No changes to existing structures required	Removal of existing Culvert under Ferry Lane, to be replaced by a new bridge (LA12). This will also require the alignment of Ferry Lane to be altered (moved to the west) order to construct the bridge due to close proximity to properties in Desborough Close. Relocation of the sailing club building and access road. Boat mooring/berths will need to be removed along the south bank of the Chap (and potentially for the north bank) for construction and reinstated afterwards.	Significant changes to existing structures required	There are no impacts to existing structures.	No changes to existing structures required	Removal of existing culvert under Ferry Lane, to be replaced by a new bridge (LA12). Possible relocation of the sailing club building and access road. Boat mooring/berths may need to be removed along the south bank of the Chap (and potentially for the north bank) for construction and reinstated afterwards.	Some changes to existing structures required	There are no impacts to existing structures.	No changes to existing structures required

IMPACT TO EXISTING STRUCTURES APPRAISAL MATRIX **Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001**									
Impact to Existing Structures RAG rating definitions : Red: Significant changes to existing structures required Amber: Some changes to existing structures required Green: No changes to existing structures required									
Option 6a - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap <u>without</u> additional control structure		**Option 6b - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap with additional control structure**		**Option 7 - RTS Channel and Swimming Lake separation**		**Option 8 – Open Connection to River Thames with Future Potential for a Marina**			
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
Connection into “the Chap” for augmented flow is via the existing culvert under Ferry Lane. Condition survey needed to confirm if any minor repairs are required. There are no other impacts to existing structures.	No changes to existing structures required	Connection into “the Chap” for augmented flow would be via the existing culvert under Ferry Lane. Condition survey needed to confirm if any minor repairs are required. There are no other impacts to existing structures.	No changes to existing structures required	There are no impacts to existing structures.	No changes to existing structures required	There are no impacts to existing structures.	No changes to existing structures required		

1.2 Buildability Appraisal Matrix

BUIDABILITY APPRAISAL MATRIX **Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001**									
Buildability RAG rating definitions: Red: High risk to programme/high level buildability issues Amber: Moderate risk to programme/ buildability issues Green: Low risk to programme/ buildability issues.									
Option 1 - Retain current flood relief channel alignment through Ferris Meadow Lake		**Option 2 - Direct the flood relief channel north of Ferris Meadow Lake into the Chap**		**Option 3 - Divert the flood relief channel along the west side of Ferris Meadow Lake**		**Option 4 - Divide the flood relief channel between the Chap and west of Ferris Meadow Lake**		**Option 5 - Underground engineered solution.**	
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
• Minimum landfill excavation, remediation and processing. • Large cofferdam into Thames and lake for construction of FCS19/FBR7. • LA12 as per current design • Silt and pollution control in Ferris Meadow Lake required. • Minimum impact from noise and vibration to residents	Low risk to programme/ buildability issues.	• Construction of FCS19 to west of Ferry Lane and hence excavation through landfill site more extensive than Options 1, 6a, 6b & 7 • LA12 footprint smaller than in Option 1, 3, 6a &6b • Sailing club, demolish existing and construct replacement. • Multiple residences affected on “The Chap”. • Sheet piling works increased and closer to residents. • LA12 may affect private residents. • Excavation through Chap and banks	High risk to programme/high level buildability issues	• Construction of FCS19 to west of Ferry Lane • Construction can be done without a cofferdam in the lake. • Large cofferdam into Thames River • LA12 as per current design • Increased sheet piling works including lake top of bank. • Excavation through landfill site more extensive than Options 1, 6a, 6b, 7 & 8. • Removes existing storage land by lake • Restricts access to construct ATR bridge over River Thames • Increase in excavation of natural grounds • Archaeological risk south of lake	Moderate risk to programme/ buildability issues	• Construction of FCS19 to west of Ferry Lane and hence excavation through landfill site more extensive than Options 1, 6a, 6b & 7 • Construction can be done without a cofferdam in the lake. • Sailing Club access bridge required. • LA12 may affect private residents. • Removes existing storage land by lake • Restricts access to construct ATR bridge over Thames • Multiple residences affected by works on The Chap.	High risk to programme/high level buildability issues	• Uncertainty over technical feasibility due to underlaying aquifers and ground conditions • Large laydown and hardstand area required for duration of works. • Heavy cranage to feed TBM material. • Deep shaft through poor ground and consider groundwater • Extensive excavation through landfill site. • FBR7 not required. • Water treatment and dewatering for shafts. • Large delivery and construction logistics required at launch and retrieval locations.	High risk to programme/high level buildability issues

BUIDABILITY APPRAISAL MATRIX

Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001

Buildability RAG rating definitions :

Red: High risk to programme/high level buildability issues
Amber: Moderate risk to programme/ buildability issues
Green: Low risk to programme/ buildability issues

Option 6a - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap <u>without</u> additional control structure		**Option 6b - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap <u>with</u> additional control structure**		**Option 7 - RTS Channel and Swimming Lake separation**		**Option 8 – Open Connection to River Thames with Future Potential for a Marina**			
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating		
• Flow control structure required from RTS channel to Chap. • Small increase in material excavated through landfill compared with Option 1. • Small increase in sheet piling in landfill required compared with Option 1. • Large cofferdam into Thames River and lake • LA12 as per current design • Construction of FCS19 & FBR7 • Silt and pollution control in Ferris Meadow Lake required. • Additional sheet pile work compared with Option 1.	Moderate risk to programme/ buildability issues	• Flow control structure required from RTS channel to Chap. • Full gated structure and associated compound required between RTS channel and Ferris Meadow Lake. • Small increase in material excavated through landfill compared with Option 1. • Large cofferdam into Thames River and lake. • Additional sheet pile work compared with Option 1. • LA12 as per current design. • Construction of FCS19 & FBR7 • Silt and pollution control in Ferris Meadow Lake required.	Moderate risk to programme/ buildability issues	• Landfill excavation, remediation and processing as per Option 1 • Large cofferdam into Thames and lake. • Construction of FCS19 & FBR7 • LA12 as per current design • Silt and pollution control in Ferris Meadow Lake required. • Additional pile work with 2no. pile runs and tie ins to banks. • Large quantity of imported fill material. • Requirement for marine barge and plant. • Ferris Meadow Lake occupied for duration of works. • Substantial material deliveries and road use. • Significant construction programme but likely to be able to carry out, concurrently with other works.	Moderate risk to programme/ buildability issues	• Large cofferdam into Thames and lake. • LA12 as per current design • FCS19 relocated west of Ferris Meadow Lake. • Construction of FCS19 to west of Ferry Lane and hence excavation through landfill site more extensive than option 1, 6a, 6b & 7. • FBR7 remains at current scope location. • Reduced construction programme and interface with Ferris Meadow Lake compared with Option 1.	Moderate risk to programme/ buildability issues		

1.3 Operations and Maintenance

OPERATIONS AND MAINTENANCE APPRAISAL MATRIX **Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001**									
Operation and Maintenance RAG rating definitions: Red: Significant operation and maintenance requirements Amber: Moderate operation and maintenance requirements Green: Low operation and maintenance requirements.									
Option 1 - Retain current flood relief channel alignment through Ferris Meadow Lake		**Option 2 - Direct the flood relief channel north of Ferris Meadow Lake into the Chap, including widening the Chap**		**Option 3 - Divert the flood relief channel along the west side of Ferris Meadow Lake**		**Option 4 - Divide the flood relief channel between the Chap and west of Ferris Meadow Lake**		**Option 5 - Underground engineered solution.**	
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
Channel inspection and maintenance of sheet piles to both sides of channel to west of Ferry Lane (1.4km). Ferry Lane bridge (LA12) inspection & maintenance. Outlet weir (75m) and bridge inspection & maintenance.	Low operation and maintenance requirements.	Channel inspection and maintenance consisting of sheet piles to both sides of channel to west of Ferry Lane and south side of Chap (1.8km). Level control weir to west of Ferry Lane (96m long) requiring inspection & maintenance. North bank and bed of Chap which contains scour protection requiring inspection & maintenance.	Moderate operation and maintenance requirements	Channel inspection and maintenance of sheet piles to both sides of channel to west of Ferry Lane and channel around southwest side of lake (2.5km). Level control weir to west of Ferry Lane (96m long) requiring inspection & maintenance.	Moderate operation and maintenance requirements	Channel inspection and maintenance consisting of sheet piles to both sides of channel to west of Ferry Lane, south side of Chap and channel around southwest side of lake (3km). Level control weir to west of Ferry Lane (96m long) requiring inspection & maintenance.	Moderate operation and maintenance requirements	Significant maintenance and inspection requirements for all aspects of the option.	Significant operation and maintenance requirements

OPERATIONS AND MAINTENANCE APPRAISAL MATRIX

Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001

Operation and Maintenance RAG rating definitions :

Red: Significant operation and maintenance requirements
Amber: Moderate operation and maintenance requirements
Green: Low operation and maintenance requirements.

Option 6a - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap <u>without</u> additional control structure		**Option 6b - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap <u>with</u> additional control structure**		**Option 7 - RTS Channel and Swimming Lake separation**		**Option 8 – Open Connection to River Thames with Future Potential for a Marina**			
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
Channel inspection and maintenance of sheet piles to both sides of channel to west of Ferry Lane (from Chertsey Road) and augmented flow channel (1.6km). Ferry Lane bridge (LA12) inspection & maintenance. Outlet weir (75m) and bridge inspection & maintenance. Inspection and maintenance of the existing culvert under Ferry Lane. Penstock to close off the augmentation channel will need operation and maintenance.	Moderate operation and maintenance requirements	Channel inspection and maintenance of sheet piles to both sides of channel to west of Ferry Lane (from Chertsey Road) and augmented flow channel (1.6km). Ferry Lane bridge (LA12) inspection & maintenance. Outlet weir (75m) and bridge inspection & maintenance. Inspection and maintenance of the existing culvert under Ferry Lane. Penstock to close off the augmentation channel will need operation and maintenance. Large, gated structure will have significant operational requirements when RTS is used in flood conditions and this will also be a significant structure to maintain.	Significant operation and maintenance requirements	Channel inspection and maintenance to sheet piles to both sides of channel to west of Ferry Lane (from Chertsey Road) (1.4km). Inspection and maintenance of the sheet piled bund which would divide Ferris Meadow Lake. Length of sheet piles 0.8km. Total sheet piles for inspection and maintenance 2.2km	Moderate operation and maintenance requirements	Channel inspection and maintenance to sheet piles to both sides of channel to west of Ferry Lane (from Chertsey Road) (1.4km). Level control weir to west of Ferry Lane (96m long) requiring inspection & maintenance. Inspection and maintenance of sheet piles at outlet from Ferris Meadow Lake to River Thames.	Moderate operation and maintenance requirements		

1.4 Impact to Utility Services

UTILITY SERVICES AND OTHER STAKEHOLDER OWNED STRUCTURES APPRAISAL MATRIX **Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001** **Impact on and issues surrounding utility Services RAG rating definitions:** Red: Significant utility service diversions required Amber: Moderate utility service diversions required Green: Minimal service diversions required									
Option 1 - Retain current flood relief channel alignment through Ferris Meadow Lake		**Option 2 - Direct the flood relief channel north of Ferris Meadow Lake into the Chap, including widening the Chap**		**Option 3 - Divert the flood relief channel along the west side of Ferris Meadow Lake**		**Option 4 - Divide the flood relief channel between the Chap and west of Ferris Meadow Lake**		**Option 5 - Underground engineered solution.**	
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
The flood relief channel will require a diversion of an existing 500mm diameter water main which runs from the west of Ferry Lane and travels east on the northern edge of Ferris Meadow Lake. Construction of Ferry Lane Crossing (LA12) will result in the following services being temporarily diverted: - Water main - Openreach Telecom (BT) cables (overhead) - Foul water drainage - Low and high voltage electrical cables - Low pressure gas pipes - Street lighting The construction of a pumping station to the south of Ferry Lane Crossing (LA12) would be necessary to enable the foul water gravity main to cross the channel and feed to the existing Thames water pumping station to the north of the Ferry Lane Crossing (LA12).	Moderate utility service diversions required	This option requires similar diversions of services as Option 1. However, as the construction of Ferry Lane Crossing (LA12) now replaces the existing Ferry Lane culvert into the Chap and is further north than in Option 1 there are additional multiple electricity cables present which travel north from an electricity substation to the east of Ferry Lane requiring diverting. The 500mm diameter water main running in an east/west direction would not require such an extensive diversion as option 1 but is likely to require an additional diversion further east along the sailing club access track, together with electricity and communications services to the sailing club. The construction of a pumping station north of Ferry Lane Crossing (LA12)(rather than to the south) would be necessary to enable the foul water gravity main to cross the channel and feed to the existing Thames water pumping station. This could also enable the foul water main visible inside Ferry Lane culvert to be diverted.	Significant utility service diversions required	This option requires the same service diversions as Option 1.	Moderate utility service diversions required	This option requires the same service diversions as Option 2. In addition, the 500mm water main, electricity and communications services running towards the sailing club will need to be diverted to cross a new bridge which will provide access to the sailing club over the channel to the west of the Lake. The construction of a pumping station north of Ferry Lane Crossing (LA12) (rather than to the south)would be necessary to enable the foul water gravity main to cross the channel and feed to the existing Thames water pumping station to the south. This could also enable the foul water main visible inside Ferry Lane culvert to be diverted. The gas main visible inside the Ferry Lane culvert would also require diverting.	Significant utility service diversions required	The construction of a level retention structure and the tunnel shaft in the field to the west of Ferry Lane will require a diversion of the 500mm existing water main to the west of Ferry Lane (as with Option 1, 2 & 3). Tunnelling underneath Ferry Lane (where there are a significant number of services) should mean that the services in the lane can remain. However, consultation with utility companies will be required to confirm that tunnelling underneath the utilities won't affect them. In addition, a gas main and foul water main are visible inside the Ferry Lane culvert. Due to the increased flow through the culvert, there is an increased risk of blockage from debris, and potential for damage to the pipes. Solutions to mitigate this would have to be investigated. This could mean a diversion of the pipes or a means of keeping debris out of the culvert. Potentially there may also be a need for a	Moderate utility service diversions required

		The gas main visible inside the Ferry Lane culvert would also require diversion.						pumping station for the foul water main.	

UTILITY SERVICES AND OTHER STAKEHOLDER OWNED STRUCTURES APPRAISAL MATRIX **Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001**									
Impact on and issues surrounding utility Services RAG rating definitions: Red: Significant utility service diversions required Amber: Moderate utility service diversions required Green: Minimal service diversions required									
Option 6a - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap without additional control structure		**Option 6b - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap with additional control structure**		**Option 7 - RTS Channel and Swimming Lake separation**		**Option 8 – Open Connection to River Thames with Future Potential for a Marina**			
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
The same utility diversions as Option 1, including the construction of a pumping station to the south of Ferry Lane Crossing (LA12) to enable the foul water gravity main to cross the channel and feed to the existing Thames water pumping station to the north. In addition, a gas main and foul water main are visible inside the Ferry Lane culvert. Due to the increased flow through the culvert, there is an increased risk of blockage from debris, and potential for damage to the pipes. Solutions to mitigate this would have to be investigated. This could mean a diversion of the pipes or a means of keeping debris out of the culvert. Potentially there may also be a need for a second pumping station for the foul water main to the north.	Significant utility service diversions required	The same utility diversions as Option 1, including the construction of a pumping station to the south of Ferry Lane Crossing (LA12) to enable the foul water gravity main to cross the channel and feed to the existing Thames water pumping station to the north. In addition, a gas main and foul water main are visible inside the Ferry Lane culvert. Due to the increased flow through the culvert, there is an increased risk of blockage from debris, and potential for damage to the pipes. Solutions to mitigate this would have to be investigated. This could mean a diversion of the pipes or a means of keeping debris out of the culvert. Potentially there may also be a need for a second pumping station for the foul water main to the north.	Significant utility service diversions required	This option requires the same service diversions as Option 1.	Moderate utility service diversions required	This option requires the same service diversions as Option 1.	Moderate utility service diversions required		

1.5 Materials Management Appraisal Matrix

MATERIALS MANAGEMENT APPRAISAL MATRIX **Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001**									
Materials Management Appraisal Criteria: Red: Significant amount of materials and waste excavated Amber: Moderate amount of materials and waste excavated Green: Minimal amount of materials and waste excavated									
Option 1 - Retain current flood relief channel alignment through Ferris Meadow Lake		**Option 2 - Direct the flood relief channel north of Ferris Meadow Lake into the Chap**		**Option 3 - Divert the flood relief channel along the west side of Ferris Meadow Lake**		**Option 4 - Divide the flood relief channel between the Chap and west of Ferris Meadow Lake**		**Option 5 - Underground engineered solution.**	
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
Has least total volume of material to be excavated compared with all other options and also the lowest excavated material in landfill (within land to west of Ferry Lane).	Minimal amount of materials and waste excavated	Fourth greatest total volume of material to be excavated. Third greatest of excavation in landfill (within land to west of Ferry Lane). This waste material is unlikely to be suitable for reuse without processing / treatment. If the excavated waste material is hazardous, it may not be suitable for placement on site even after processing and may incur off-site disposal costs.	Moderate amount of materials and waste excavated	Second greatest total volume of material to be excavated with second greatest of excavation in landfill (within land to west of Ferry Lane). This waste material is unlikely to be suitable for reuse without processing / treatment. If the excavated waste material is hazardous, it may not be suitable for placement on site even after processing and may incur off-site disposal costs. There are significant quantities of excavation required for new channel to west and south of Ferris Meadow Lake. But this is assumed to be naturally occurring material so re-use would potentially be more straight forward.	Significant amount of materials and waste excavated	Third greatest total volume of material to be excavated. The volume in landfill (west of Ferry Lane) is as Option 2. There are significant quantities of excavation required for new channel to west and south of Ferris Meadow Lake, but this volume is less than Option 3 due to the smaller channel required. This is assumed to be naturally occurring material so re-use would potentially be more straight forward.	Moderate amount of materials and waste excavated	Greatest volume of waste material proposed to be excavated. This includes significant quantities from both landfill to west of Ferry Lane and non-landfill to east of Ferry Lane. Excavated waste material from landfill is unlikely to be suitable for reuse without processing / treatment. If the excavated waste material is hazardous, it may not be suitable for placement onsite even after processing and may incur off-site disposal costs. There is a probable recovery of London Clay from tunnelling which could be of benefit to the scheme as there is a potential deficit of impermeable naturally occurring material that will need to be imported.	Significant amount of materials and waste excavated

MATERIALS MANAGEMENT APPRAISAL MATRIX **Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001**									
Materials Management RAG rating definitions: Red: Significant amount of materials and waste excavated Amber: Moderate amount of materials and waste excavated Green: Minimal amount of materials and waste excavated									
Option 6a - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap <u>without</u> additional control structure		**Option 6b - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap <u>with</u> additional control structure**		**Option 7 - RTS Channel and Swimming Lake Separation**		**Option 8 – Open Connection to River Thames with Future Potential for a Marina**			
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
Has second lowest volume of material to be excavated compared with all other options. This is similar to Option 1 but with additional excavation in landfill for augmented flow channel.	Minimal amount of materials and waste excavated	Very similar to Option 6a with an increase in material to be excavated in landfill due to need to create operational compounds for control structure.	Minimal amount of materials and waste excavated	Has an equal volume of material to be excavated to Option 1 and hence joint lowest out of all options. However, there is a need to place fill material between the lake division sheet piles and this can only be clean and naturally occurring material.	Minimal amount of materials and waste excavated	Fifth greatest option for total volume of material to be excavated. The excavation required in landfill (within land to west of Ferry Lane) is similar to that of Option 2. This waste material is unlikely to be suitable for reuse without processing / treatment. If the excavated waste material is hazardous, it may not be suitable for placement onsite even after processing and may incur off-site disposal costs.	Moderate amount of materials and waste excavated		

1.6 Carbon Appraisal Matrix

CARBON APPRAISAL MATRIX **Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001**									
Carbon RAG rating definitions: The carbon footprint is a high level calculation covering significant contributors (steel, concrete and rip rap) Red: Significant carbon footprint. Amber: Moderate carbon footprint. Green: Minimal carbon footprint. .									
Option 1 - Retain current flood relief channel alignment through Ferris Meadow Lake		**Option 2 - Direct the flood relief channel north of Ferris Meadow Lake into the Chap**		**Option 3 - Divert the flood relief channel along the west side of Ferris Meadow Lake**		**Option 4 - Divide the flood relief channel between the Chap and west of Ferris Meadow Lake**		**Option 5 - Underground engineered solution.**	
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
This option includes the smallest use of sheet piles and concrete and hence has the smallest carbon footprint.	Minimal carbon footprint. .	Based on the assumption that sheet piles will only be required on the south bank of the Chap this option has a carbon footprint almost double that of Option 1. Concrete usage makes up approximately 40% of the carbon footprint, sheet piles approximately 45% with rip rap for bed protection making up approximately 15%.	Moderate carbon footprint.	The carbon footprint of this option is just under 2.5 times greater than Option 1. This assumes the need for sheet piles along both sides of the proposed channel to the west of the lake. In this option sheet piles make up over 50% of the carbon footprint, concrete just over 30% and the remainder rip rap for bed protection.	Significant carbon footprint.	The carbon footprint of this option is just over 2.5 times that of option 1. The option contains a large amount of sheet piles as the two separate flood channels are required. In this option sheet piles make up over 60% of the carbon footprint, concrete approximately 25% and rip rap for bed protection 15%.	Significant carbon footprint.	This option has a carbon footprint 3 times that of Option 1 and has the highest footprint of all option. This is mainly due to the large volume of concrete required to line the shafts and tunnel. There are, however, still a significant quantity of sheet piles required in the level retaining structure and the augmented flow channel as in land classed as landfill.	Significant carbon footprint.

CARBON APPRAISAL MATRIX **Report: ENVIMSE500260-CBI-ZZ-3C3-RP-C-00001**									
Carbon RAG rating definitions: The carbon footprint is a high level calculation covering significant contributors (steel, concrete and rip rap) Red: Significant carbon footprint with and limited carbon mitigation measures available. Amber: Moderate carbon footprint with some mitigation measures available Green: Minimal carbon footprint									
Option 6a - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap <u>without</u> additional control structure		**Option 6b - Retain current flood relief channel alignment through Ferris Meadow Lake with augmented flow diversion into the Chap <u>with</u> additional control structure**		**Option 7 - RTS Channel and Swimming Lake Separation**		**Option 8 – Open Connection to River Thames with Future Potential for a Marina**			
Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating	Comment	Rating
This option has the second smallest carbon footprint. The requirement to use sheet piles / concrete base to construct the augmented flow channel as in land classed as landfill is the reason for the carbon footprint being greater than Option 1.	Minimal carbon footprint	There is requirement to use sheet piles / concrete base to construct the augmented flow channel as in land classed as landfill is the reason for the carbon footprint being greater than Option 1.There is also an increase compared with Option 6a due to the additional gated structure.	Moderate carbon footprint with some mitigation measures available	This option contains the same amount of concrete as Option 1 but requires two rows of sheet piles to form a separation bund and hence an increase in carbon footprint. There is a similar carbon impact from the piling as in Option 3 but it does not include as much concrete or rip rap.	Moderate carbon footprint with some mitigation measures available	This option has a similar carbon footprint to Option 7 but the carbon impact is due to extensive requirements for sheet piling and concrete to the west of Ferry Lane as this option contains a large weir structure (also required in Options 2, 3, 4 and 5).	Moderate carbon footprint with some mitigation measures available		

Contact

If you would like to contact us outside of your response to this consultation, you can use one of the options below:

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