

## Alternative Options Note

<b>Date:</b>	10 February 2023	<b>Jacobs U.K. Limited</b>
<b>Project name:</b>	Oxford Flood Alleviation Scheme	The West Wing
<b>Project no:</b>	684232CH	1 Glass Wharf
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## 1. Introduction

This note has been produced in response to a Regulation 25 under the Town and County Planning Regulations to provide additional information in support of a planning application, MW.0027/22 – validated 31 March 2022. Additional information was requested around the alternative channel routes that were investigated during the design development and further information in relation to irreplaceable habitats and Kennington Pond Local Wildlife Site.

The additional information provided in this note supplements and provides additional detail to the information already provided in Section 2.3 of the Environmental Statement (ES) submitted with the planning application and should be read in conjunction with the ES.

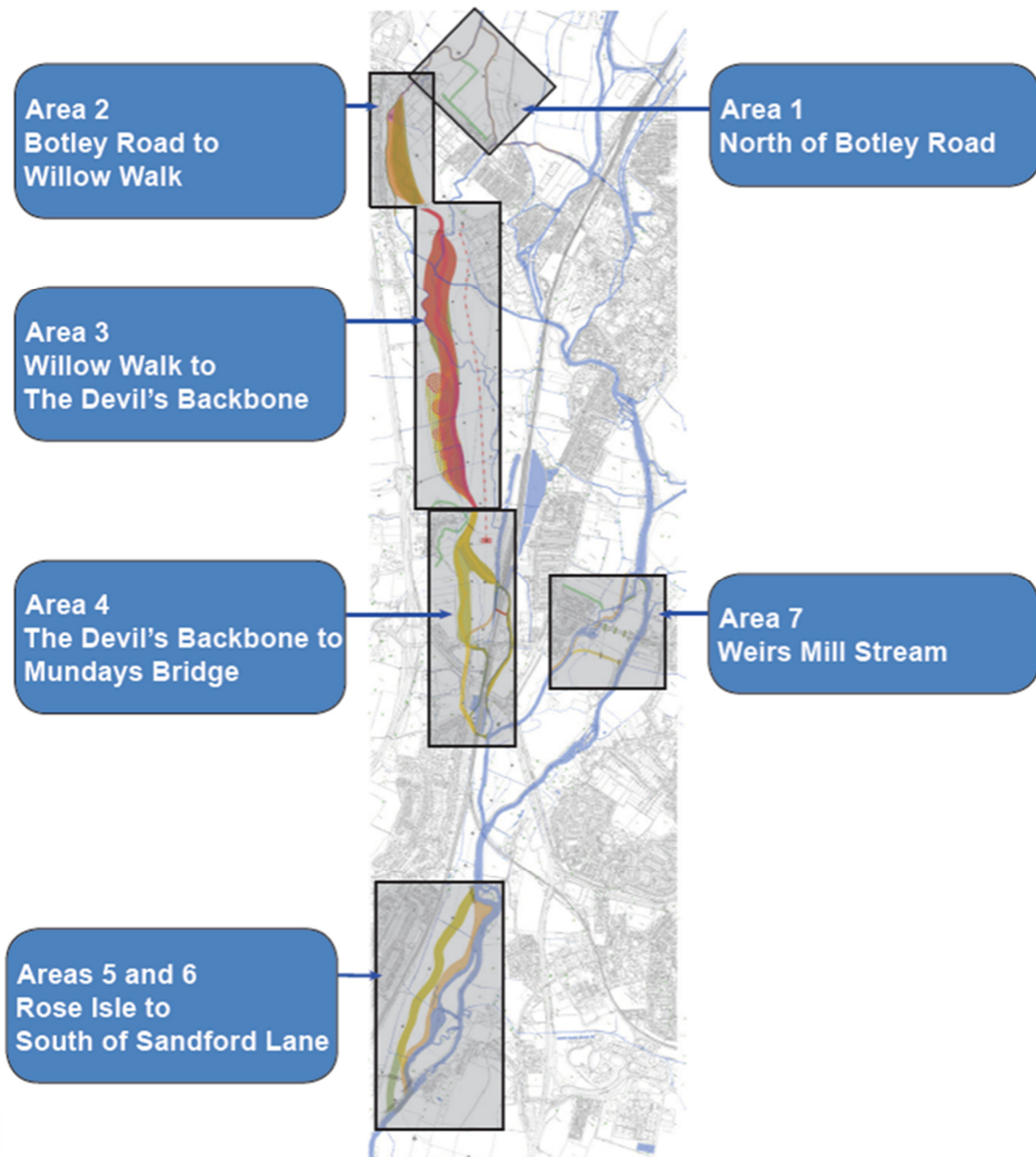
## 2. Options Assessment

### 2.1 Channel Alignment

The ‘various alignments and sizes’ for the scheme referred to in section 2.3 of the Environmental Statement (ES) were assessed by following the Environment Agency project appraisal and design process and through consultation with the public at strategic milestones in the project. This helped to inform the Environmental Impact Assessment and shape the design. An explanation of the high-level options appraisal is set out Section 2.3.1 of the ES and the appraisal is outlined in the Oxford Flood Risk Management Strategy 2010. This identified a phased approach to reducing flood risk in Oxford, with Phase 2 being a scheme to increase capacity in the floodplain by creating a new channel to the west of the city. This is what we now know as the Oxford Flood Alleviation Scheme.

The general alignment of the channel was dictated by topographical, environmental and utility/infrastructure constraints in the area and the detailed alignment has been developed by means of an appraisal and design process that started in 2014.

Section 2.3.3 of the ES explains the process followed for consideration of alternative alignments for the scheme and references the division of the scheme into areas numbered 1 to 7. The figure below indicates the areas that were considered.



It was at this stage in the process that we first consulted the public (January 2016) and sought their views on the scheme alignment as reported in the Statement of Community Involvement (SCI), section 7.2. Appendix A of the SCI submitted with the planning application includes a report detailing this public consultation exercise.

The scheme was broken down into 7 areas, generally due to physical constraints and are shown in Appendix 1 to this report. Between 3 to 5 different channel alignments for each area were then identified. The public were asked to comment on each of these alignments during the public consultation and confirm their preferred option. This feedback, plus a technical review of each option was then incorporated into a 2 stage multi-criteria analysis (MCA) process. This is explained in Section 7.2 of the SCI.

In the MCA, each option was scored against Social, Technical, Environmental and Institutional Objectives, with appropriately qualified and experienced technical specialists undertaking the review and scoring. The results from the consultation process fed into the appraisal process as well and this included feedback from landowners, public, Local Authorities and other interested parties.

The Oxford Flood Alleviation Multi-Criteria Options Report (2017) is attached as Appendix A of this Note. The social objectives included opportunities for the improvement of landscapes and the environmental objectives included the opportunities for the improvement of ecology.

Following this MCA process some areas of the proposed scheme were then removed (Areas 5, 6 and 7) and the scheme was reduced to 4 Areas. The results of the appraisal process confirmed the optimised preferred corridor for the channel whilst meeting the other objectives for the scheme. It was this option which was then taken forward to outline design.

## 2.2 Hinksey Meadow Area

Hinksey Meadow was in Area 2 in this process, covering the area from just downstream of Botley Road to Willow Walk. The 4 options which were part of the public consultation are shown here and are also in the SCI Appendix.





Early appraisal work had identified that lowering the floodplain near to the Seacourt Stream at this location was the most viable option to increase flood flow capacity and reduce flooding in the Botley Road area. The area is heavily constrained by existing housing, offices and commercial property. Options for the alignment of the new stream/channel involving the demolition of or significant impact to properties, either residential or commercial, were not considered to be reasonable. The design has always focused on working with the natural floodplain.

During the public consultation many people expressed their support for Options 2A and 2B because they would have retained the existing trees along the east bank of Seacourt Stream. The MCA confirmed that the preferred option for Area 2 was 2A, which was a wide and shallow channel to direct flood flows across the meadow. However, further botanical surveys and ongoing consultation with the landowner and environmental stakeholders highlighted the ecological importance of Hinksey Meadow resulting in the preferred option being changed to a narrower version of 2C; a narrower channel along the western edge of Hinksey Meadow to reduce the direct impacts on the MG4 grassland.

The final layout in Area 2 was made as narrow as possible to reduce the amount of MG4 grassland lost whilst still providing the necessary flood benefits; ensuring the land could still be managed as it is now and negate the need for hard engineering. To further minimise impacts on the MG4, we removed the usual need for a 20m wide temporary haul route on the eastern side of the lowered floodplain. Instead, the temporary working access track will be located within the footprint of the permanent works. Access outside of the lowered area will be strictly limited to a 1m wide strip so that fencing can be erected. Maintenance will also be undertaken from within the lowered area to avoid impacts on the remaining MG4 grassland. The extract from planning drawing IMSE500177-CH2-00-00-VS-PL-0027 – General Scheme Overview provided overleaf shows the final proposed layout of the second stage channel in this area which minimises the impacts on Hinksey Meadow.



*Final channel arrangement in Area 2*

## 2.3 Kennington Pond Area

Kennington Pond was within Area 4 and 3 options for this area were considered during the public consultation and the MCA.



*Option 4A*

*Option 4B*

*Option 4C*

Option 4B was the most strongly supported route by the public and respondents who supported this choice felt that it would make best use of existing river channels and would have the least visual impact. However, Option 4A, a single two stage channel, came out as the preferred option in the MCA scoring. This option scored higher than the other two options in Area 4 in the assessment criteria as it minimised the hard engineering works and flow control structures related to splitting flows between different channels, which in turn minimises the risk of blockages and maintenance. Further detail on this is provided in Appendix B and C.4 in the Oxford Flood Alleviation Multi-Criteria Options Report (2017) which is included as Appendix A of this note.

The preferred option was further refined as more survey work and consultation was carried out. Due to the existing constraints in the Redbridge area including the railway, A423 Oxford Southern bypass, housing, commercial and industrial developments, the space available to accommodate flood flows is limited and we have not been able to avoid impacting the Kennington Pond Local Wildlife Site (LWS). We have reduced the impacts on Kennington Pond LWS by fitting the channel between the existing electricity pylon and railway, something we didn't initially think possible.

Working collaboratively with Oxfordshire County Council on the A423 Kennington Railway Bridge replacement has also reduced the impacts on the northern end of Kennington Pond LWS.

This process demonstrates how we sought to avoid and then reduce the impact on Kennington Pond, in accordance with the NPPF paragraph 180 (a). We are aware of the importance of this LWS and our design has been developed to reinstate as much of the pond as possible including the current groundwater feed and frequency of inundation from fluvial flows. The mitigation for remaining impacts to further protect Kennington Pond is set out in the ES in Section Table 8.10 /ES Appendix I-6 Landscape General Arrangement Drawing IMSE500177-CH2-L00-A4-VS-L-0612-16 and I-8 Figure 7.42 and includes the specific species related strategy for Whorled Water-Milfoil outlined in Appendix D-25 of the ES. If a separate Kennington Pond Mitigation Strategy is required as a condition of any planning permission granted, we would comply with this.

The extract from planning drawing IMSE500177-CH2-00-00-VS-PL-0027 – General Scheme Overview provided below shows the final proposed layout of the second stage channel in this area which minimises the impacts on Kennington Pond.



*Final channel arrangement in Area 4*

As part of the scheme, we are also proposing several smaller off-line ponds outside of the lowered floodplain which will have similar water quality characteristics to Kennington Pond. In response to feedback from the Freshwater Habitat Trust, we have increased the size of one of those ponds so that it replicates Kennington Pond as it is now.

This section has explained the process we went through considering reasonable alternatives for the alignment of the channel and in particular the areas involving Hinksey Meadow and Kennington Pond. It demonstrates, along with the consultation and MCA the consideration given to the various options and how we looked to reduce the ecological impacts of the flood alleviation scheme. This includes trying to avoid LWSs along the route of the scheme.

The mitigation for any impacts on LWSs has been addressed throughout the ES but as with Kennington Pond if a specific strategy for LWSs is required as a condition of any planning permission we can also provide this.

### **3. Irreplaceable Habitats**

Table 8.2 of the ES confirms that Hinksey Meadow is considered to be an irreplaceable habitat. The NPPF at paragraph 180 (c) states ‘development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists’. The footnote to this, footnote 63, explains ‘For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.’

Our scheme is one such infrastructure project where we believe the public benefit outweighs the impact on Hinksey Meadow. The benefits of the scheme are outlined throughout the ES and in the Planning Statement submitted with the planning application. The benefits of the scheme are presented in the following section.

## **4. Scheme Benefits**

### **4.1 Reduction in Flood Risk**

The Oxford Flood Alleviation Scheme is designed to reduce the likelihood of flooding for all homes and businesses currently at risk of flooding from the River Thames in Oxford. Over 1,050 properties will benefit from a standard of protection greater than a 1% AEP from the scheme on opening. The scheme will remain in place beyond its design life but the reduction in risk will gradually reduce over time if climate change materialises as predicted.

Flooding in Oxford also causes disruption for transport with frequent closures of the Botley Road and Abingdon Road, two of the main routes into the city and the mainline railway. The scheme will help to keep these routes open during flood events. This will improve the wider access for sustainable travel, cycle routes and footpaths, as well as the railway line.

The scheme will also offer greater resilience to important utilities such as the sewer network, electricity substations and broadband communications.

These flood risk benefits on their own benefit the public to such an extent that outweighs the impact on the habitat of the Hinksey Meadow but there are other benefits because of the scheme.

### **4.2 Economic benefits**

The scheme will increase protection for local businesses, tourism and the local community in Oxford that are at flood risk that will only increase with climate change. If the scheme does not go ahead the impacts of climate change mean that approximately 5600 properties will be at flood risk by 2080 (both residential and commercial properties). The implementation of the scheme will provide certainty and resilience for Oxford, resulting in less property damage from flooding. Businesses will be able to remain open longer during flood events and the reduction in flood risk will lead to less disruption to travel including commuters, and tourists with the knock-on benefit to businesses. National and local businesses will have more willingness to invest in locations within the vicinity. Additionally, there are benefits to areas outside Oxford benefitting from the reduced risk to the rail line.

### **4.3 Habitat Creation**

We are creating a wetland wildlife corridor as part of the scheme. This will help to link up existing high quality wetland wildlife sites to the west of Oxford; Port Meadow to the north and Iffley Meadows to the south. We have designed a scheme that is sustainable – that will be managed largely through conservation grazing and low-impact agricultural operations such as hay cutting. These mimic the existing land use practises and landscape and result in a new area of MG4 lowland meadow that is twice the size of the existing area of MG4 in Hinksey Meadow.

As well as being of importance locally, it will also contribute to the national wetland restoration of freshwater habitats. The Freshwater Habitat Trust have highlighted that high quality, unpolluted freshwaters are now restricted to a small number of hotspots, of which Oxford is one, and prioritisation of wetland restoration and creation schemes is being encouraged in these areas as they are most likely to deliver significant biodiversity benefits.

The scheme will meet Water Framework Directive measures and support England Biodiversity 2020 requirements.

### **4.4 Access**

As well as reducing flood risk to transport links, cycle routes and footpaths as outlined above, there will be improvements to some of the footpaths and cycleways. We will also be creating a new track along much of the scheme to allow access for maintenance. A proportion of the track will be made into a permissive path that the public are allowed to use.

### **4.5 Health**

The reduction in flood risk brought by the scheme will bring associated positive effects on the peace of mind and wellness of those living, working and visiting the area. In the absence of the Scheme, local community assets, businesses and access routes for commuting and travelling in and around the city will continue to be vulnerable to flooding, which will have significant adverse effects on human health. These effects will be exacerbated by climate change, which will increase the extent, severity and frequency of flooding.

The increasing population growth will place increasing strain on existing resources vulnerable to flooding. The Scheme will provide some significant health and well-being benefits that have been developed and promoted as an integral part of the Scheme by:

- Landscape and wildlife enhancements through the creation of a new natural looking channel and increased blue infrastructure;
- Improvements to green infrastructure by improving the surfacing of existing public footpaths;
- A proportion of our maintenance track will be made into a permissive path that the public are allowed to use, except when maintenance or other activities would conflict with this, and on land that the Environment Agency will retain ownership of we will maintain current permissive footpath routes commonly used by the public; and
- Creation of new amenity features through the installation of interpretation boards around the Old Abingdon Road Scheduled Monument.



The mental and physical health of residents and visitors to Oxford will be improved by the scheme. There will be less stress and anxiety with a greater confidence that properties and businesses are at a reduced risk of flooding. The improvements to the outdoor environment, particularly in terms of improvements to footpaths and cycleways will improve both physical and mental health providing greater attraction to exercise in the area. The reduction in flood risk to critical infrastructure in Oxford will significantly reduce stress and anxiety for travellers and commuters and is a major beneficial impact of the Scheme, influencing key indicators of health and fitness.

## 5. Summary

The information provided in the original ES and additional information provided in this note clearly demonstrates that the design development of the scheme considered all reasonable alternatives and followed good design practice to ensure that impacts of the scheme were mitigated as far as possible in all areas.

The route finally chosen and presented in the planning submission minimises the impacts on the MG4 area in Hinksey Meadow and to Kennington Pond. However, the scheme is needed to address the wholly exceptional circumstances of reducing known ongoing flood risk to properties and critical infrastructure in the City of Oxford which outweighs the impacts, and the mitigation and compensation proposed is reasonable and achievable.

**Appendix A - Multi-Criteria Options Appraisal (2017)**