

# Report to the Secretary of State for Environment, Food and Rural Affairs

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an Inspector appointed by the Secretary of State for Environment, Food and Rural Affairs

Date: 28 March 2024

# THE WATER RESOURCES ACT 1991 ENVIRONMENT ACT 1995 ACQUISITION OF LAND ACT 1981

Application by the Environment Agency

### The Environment Agency (Oxford Flood Alleviation Scheme) Compulsory Purchase Order (CPO) 2023

Inquiry opened on 14 November 2023

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# ABBREVIATIONS

1981 Act	Acquisition of Land Act 1981
AA	Acquiring Authority
AEP	AEP Annual Exceedance Probability. A flood event may be referred to as having a 1% probability of being equalled or exceeded in any one year, also referred to as an Annual Exceedance Probability (AEP). This chance of the event occurring is present each and every year.
Agency	The Environment Agency
AONB	Area of Outstanding Natural Beauty
Section 19 Application	The application dated 3 May 2023 for a Certificate pursuant to section 19 and paragraph 6(1)(a) of Schedule 3 of the 1981 Act
BCA	Benefit Cost Analysis
BCR	Benefit Cost Ratio
BNG	Biodiversity Net Gain
CD	Core Document as listed on the Inquiry web site
CPO	Compulsory Purchase Order
CPO Guidance (or Guidance)	The 'Guidance on Compulsory Purchase Process and The Crichel Down Rules', DLUHC 2019 (CD 4.10)
DEFRA	Department for the Environment, Food and Rural Affairs
DLUHC	Department for Levelling Up, Housing and Communities
DM	Dalcour Maclaren
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
EMP	Environment Management Plan
ES	Environmental Statement
EqIA	Equality Impact Assessment
Exchange Land	The land proposed within the Order Land as new open space to replace the Lost Open Space
FCERM	Flood and Coastal Erosion Risk Management
FCERM-AG	Flood and Coastal Erosion Risk Management Appraisal Guidance (Environment Agency, 2010)
FHT	Ferry Hinksey Trust
FMP	Flood Meadows Partnership
Flood risk	A combination of the statistical probability of a flood event occurring and the scale of the consequences if it does. So high risk can include circumstances that might not occur very frequently but have very substantial consequences, such as a

	dam failing and also circumstances that occur relatively frequently and have more moderate consequences, causing relatively frequent but less severe harm.
FMP	Flood Meadow Partnership
FRA	Flood Risk Assessment. This is a document that assesses the flood risk to and from a proposed development or scheme. Flood Risk Assessments are prepared to accompany a planning application submitted to the local planning authority. An FRA reviews a proposed development or scheme against the risk of flooding from all relevant sources (e.g. river (fluvial), surface water (pluvial), groundwater etc) and understands any changes in flood risk to or from the development compared with the current (baseline) position.
FSA	Flood Storage Area (FSA)
Framework	National Planning Policy Framework (Revised December 2023)
HOEG	Hinksey and Osney Environment Group
iBCR	incremental Benefits to Cost Ratio
LIDAR	Light Imaging, Detection and Ranging
Lost Open Space	That part of the Order Land currently used for public recreation within the meaning of section 19 of the 1981 Act and which would be lost in the Scheme.
LPA	Local Planning Authority
LWS	Local Wildlife Site
MG4	the mesotrophic grassland communities in the British National Vegetation Classification system.
MG4a	Subset of the mesotrophic grassland communities in the British National Vegetation Classification system
MG15	Fagus sylvatica - Deschampsia flexuosa woodland
NE	Natural England
NFM	Natural Flood Management
NPV	Net Present Value
NVC	National Vegetation Classification
OFAS	Oxford Flood Alleviation Scheme
OFEG	Oxford Flood Environment Group
OFRMS	The Oxford Flood Risk Management Strategy
OPT	Oxford Preservation Trust
The Order	The Environment Agency (Oxford Flood Alleviation Scheme) Compulsory Purchase Order (CPO) 2023
Order Land	Land referred to in the Order
OxCiCo	Oxford City Council
OxCoCo	Oxfordshire County Council
PIM	Pre-Inquiry Meeting

PLP	Property Level Protection
PPG	Planning Practice Guidance
PSED	Public Sector Equality Duty pursuant to the Equality Act 2010
PVD	Present Value Damages
Probability of flooding	The likelihood of a flood event happening is usually expressed in terms of its predicted frequency. This is most often communicated in terms of a percentage. For example, a flood event may be referred to as having a 1% probability of being equalled or exceeded in any one year, also referred to as an Annual Exceedance Probability (AEP). This chance of the event occurring is present each and every year.
PRoW	Public Right of Way
SAC	Special Areas of Conservation
SAM	Scheduled Ancient Monument
Secretary of State	The Secretary of State for Levelling Up, Housing and Communities, or; the Secretary of State for Environment Food and Rural Affairs
Special Parliamentary Procedure (SPP)	The procedure as referred to in section 19 of the Act, and pursuant to the Statutory Orders (Special Procedure) Acts 1945 and 1965, as amended by the Growth and Infrastructure Act 2013
SSSI	Site of Special Scientific Interest
TCFMP	Thames Catchment Flood Management Plan
ТМР	Traffic Management Plan
VoWHDC	Vale of the White Horse District Council

# File Ref: ENV/3326453

# The Environment Agency (Oxford Flood Alleviation Scheme) Compulsory Purchase Order (CPO) 2023

- The Order was made by the Environment Agency under section 154(1), (2) and (3) of the Water Resources Act 1991 and under section 2(1)(a)(iii) and (iv), section 6(1), section 7(1)(a) and (c), section 7(2) and section 37(1)(a) and (b) of the Environment Act 1995 and the Acquisition of Land Act 1981.
- The Order was sealed on 16 February 2023
- The Order, if confirmed, would authorise the Environment Agency to acquire compulsorily the land and the new rights over land described in the Schedule to the Order for the purposes of:
  - a. for the purpose of its functions relating to flood defence in respect of the works, the land described in Schedule 1 and which is delineated and shown shaded pink and shaded pink hatched blue on the map prepared in duplicate, sealed with the common seal of the acquiring authority and marked "Map referred to in the Environment Agency (Oxford Flood Alleviation Scheme) Compulsory Purchase Order 2023";
  - b. for the purpose of its functions relating to flood defence in respect of the works, the new rights described in Schedule 1 over land which is delineated and shown shaded blue, shaded pink hatched blue and shaded green on the said map; and
  - for the purpose of giving in exchange for the land and the new rights referred to in sub paragraphs (a) and (b) above, the land described in Schedule 2 and delineated and shown shaded green on the said map.
- When the Inquiry opened there were 27 remaining Statutory Objections and 22 Non-Statutory Objections.

Summary of Recommendation: that the Order be confirmed with modifications.

# PROCEDURAL MATTERS AND STATUTORY FORMALITIES

- 1. I held a pre-Inquiry meeting (PIM) on 21 September 2023 to discuss procedural matters relating to the Inquiry. There was no discussion of the merits of any cases for or against the proposals. A note following the meeting was circulated to all parties who attended the PIM and had submitted objections or other representations.
- 2. There were 29 statutory objections and 22 non-statutory objections in response to the publication of the Compulsory Purchase Order (CPO). By the close of the Inquiry a total of 24 Statutory objections and 22 non-statutory objections remained extant.
- 3. The Inquiry sat for a total of 14 days. Between the 14 November 2023 and the 13 December 2023 the Inquiry sat at the Kings Centre, Oxford. A further 2 virtual sitting days were held on the 19 and 26 January 2024. The Inquiry was formally closed on the 26 January 2024.
- 4. Helen Wilson of Helen Wilson Consultancy Limited was appointed by the Environment Agency (the Agency) as an independent Programme Officer for the Inquiry. Her role was to assist with the procedural and administrative aspects of the Inquiry, including the programme; I was very grateful for her assistance in the administration of the Inquiry.

- 5. I undertook an accompanied site visit on both the 1 and 4 December 2023. The site visit itineraries are provided at INQ/30a and INQ/30b.
- 6. The Agency confirmed its compliance with the Statutory Formalities (see INQ/5). There were no submissions on legal or procedural matters.
- 7. The Agency made a previous compulsory purchase order on 21 September 2018. However, this was withdrawn in March 2020 following the decision to work jointly with Oxfordshire County Council to design a new solution for the channel under the A423 Kennington Railway bridge. This new solution is incorporated in the CPO scheme now before me.
- A planning application was submitted to Oxfordshire County Council in March 2018 (Planning Application Reference MW.0028/18). However, that application was withdrawn in March 2020 due to concerns surrounding the A423 Railway Road Bridge. A further application was validated in March 2022 (Planning Application reference MW.0027/22). When the Inquiry closed no decision had been made by Oxfordshire County Council on the planning application.
- 9. The planning application has yet to be determined and, therefore, it is not for me to rehearse the planning arguments in this recommendation to the SoS. The legislation places a duty to consider 'evidence that the scheme is unlikely to be blocked by any impediment to implementation'. Accordingly, whilst the obtaining of planning permission is of importance for the CPO, it is for the SoS based on my assessment as set out in this Report to consider whether there are any insurmountable issues which may prevent the grant of planning permission.
- 10. A revised National Planning Policy Framework (the Framework) was adopted in December 2023. I have reflected the revised Framework as appropriate throughout my decision letter.
- 11. This report sets out a brief description of the land covered by the proposed Order, the main points of the cases for the Agency, supporters and objectors; my conclusions; and my recommendations regarding each of the elements. Lists of abbreviations used are set out above and lists of those appearing at the Inquiry and the Inquiry documents are included as appendices. Proofs of evidence and statements are identified and were made available on the <u>Inquiry website</u>. The report takes account of the evidence as given, together with the points brought out through cross examination or in answers to questions of clarification.

#### Report addendums

#### Section 19 application

- 12. The Order is accompanied by an application to the Secretary of State seeking a Certificate pursuant to section 19(1)(a), section 19(1)(aa) and paragraph 6(1)(a) of Schedule 3 of the 1981 Act. Whilst there may be some overlap with the substance of the objections made to the Order, that application is the subject of a separate report to the Department for Levelling Up, Housing and Communities and is attached as an addendum.
- 13. The recommendation is that a Certificate be given and no shortcomings were identified in that regard which may weigh against confirmation of the CPO.

#### Footpath Extinguishment

- 14. The scheme is subject to 4 separate Extinguishment Orders made pursuant to section 32 of the Acquisition of Land Act 1981:
  - Environment Agency(Oxford Flood Alleviation Scheme) (Footpaths 320/16 Hinksey Causeway) Acquisition Extinguishment Order 2023,
  - Environment Agency (Oxford Flood Alleviation Scheme) (Footpath 352/1 Devil's Backbone) Acquisition Extinguishment Order 2023,
  - Environment Agency (Oxford Flood Alleviation Scheme) (Footpath 320/18 South East of Weirs Mill Lane) Acquisition Extinguishment Order 2023, and
  - Environment Agency (Oxford Flood Alleviation Scheme) (Footpath 352/3 South Hinksey to Abingdon Road) Acquisition Extinguishment Order 2023.
- 15. The Orders were dated 30 March 2023. The consideration of the Orders took the form of exchanges of statements of case and comments on statements of case. The closing date for consultation responses was the 1 February 2024.
- 16. The decision was that the Extinguishment Orders be allowed and therefore no shortcomings were identified in that regard which may weigh against confirmation of the CPO.

#### Proposed CPO Modifications

- 17. The Secretary of State has power to make the Orders in a modified form where this would not cause injustice. The modifications proposed to the draft CPO are set out in full at INQ/34a and INQ/34b. Many of these relate to matters of a minor technical nature to correct small drafting errors which have come to light since the Order was published. No additional land would be required to accommodate any of the proposed modifications. The modified Order is as presented/described at the Inquiry and made available as document reference INQ34a. No objections were raised.
- 18. The Agency considered that these are not substantial amendments and I agree. I consider that these modifications would be necessary in the event that the CPO were to be confirmed.

# STATUTORY PROVISIONS AND ACCOMPANYING GUIDANCE

- The Agency has made the CPO under the provisions of section 154(1), (2) and 3 of the Water Resources Act 1991 and under section 2(1)(a)(iii) and (iv), section 6(1), section 7(1)(a) and (c) and section 37(1)(a) and (b) of the Environment Act 1995.
- 20. The Agency may be authorised by the relevant Minister to purchase compulsorily any land anywhere in England and Wales which is required by the Agency for the purposes of, or in connection with, the carrying out of its functions. In this respect, the Acquisition of Land Act 1981 shall apply to any compulsory purchase of any land by the Agency.
- 21. The accompanying CPO Guidance (Guidance on Compulsory purchase process and The Crichel DOWN Rules, 2019) advises generally that acquiring authorities should use compulsory purchase powers where it is expedient to do so, but that an order should only be made where there is a compelling case in the public interest. Compulsory purchase should also be used as a last resort to secure assembly of all the land needed for implementation of a project.

# THE ORDER AND ORDER LAND

- 22. The Order was executed as a deed by the Agency dated 16 February 2023.
- 23. The Order land is shown coloured pink and blue on the Order maps. The exchange land is shown coloured green on the Order maps. The Order Maps are provided at CD1.2. The land and the new rights authorised to be purchased compulsorily under this order are:
  - a. for the purpose of its functions relating to flood defence in respect of the works, the land described in Schedule 1 and which is delineated and shown shaded pink and shaded pink hatched blue on the map prepared in duplicate, sealed with the common seal of the acquiring authority and marked "Map referred to in the Environment Agency (Oxford Flood Alleviation Scheme) Compulsory Purchase Order 2023";
  - b. for the purpose of its functions relating to flood defence in respect of the works, the new rights described in Schedule 1 over land which is delineated and shown shaded blue, shaded pink hatched blue and shaded green on the said map; and
  - c. for the purpose of giving in exchange for the land and the new rights referred to in sub paragraphs (a) and (b) above, the land described in Schedule 2 and delineated and shown shaded green on the said map.
- 24. The CPO would acquire the freehold of all land where the CPO scheme is making a material change in the current land use. This would include the flood channel (including existing watercourses that become part of the flood channel), flood bunds, new and replacement bridges, maintenance tracks, lowering of watercourse bed under bridges, sleeves of land under highway bridges, watercourse control structures, removal of Towles Mill weir, flood embankment and walls, flood wall gates and ramps, drainage outfall flap valves, river gauging stations, diversion and reinforcement of utility services, environmental mitigation land and public open space Exchange Land.
- 25. Additionally, rights would be acquired over land where there will be no land use change but where access is required to operate the CPO scheme. Rights would also be acquired over land which is only needed on a temporary basis, in order to construct the CPO scheme.

#### DESCRIPTION OF THE SITE AND SURROUNDINGS

- 26. The CPO scheme, known as the Oxford Flood Alleviation Scheme (OFAS) covers areas of the River Thames floodplain and channels to the west of Oxford's city centre. The channels include the Seacourt Stream, Bulstake Stream and Hinksey Stream. The proposed works would directly connect with and modify these channels at various points. It extends from slightly north of the A420 Botley Road to south of the A423 ring road, running, in the main, between the A34 to the west and the Oxford to Didcot railway line to the east. It comprises all of the permanent scheme works, and any temporary working areas required for construction of the scheme.
- 27. The footprint of the scheme lies predominantly within flood meadows and agricultural grazing land but also passes through areas of high nature conservation value, allotment

plots, access tracks and a small number of domestic gardens. There are also local sites of wildlife value within the scheme area, and areas of high heritage value including North Hinksey Causeway and the Old Abingdon Road culverts Scheduled Monument (which is considered to have national significance).

- 28. Located approximately 0.8km to the north of the scheme area is the Oxford Meadows Special Area of Conservation (SAC). This site comprises several Sites of Special Scientific Interest (SSSIs), including: Port Meadow (with Wolvercote Common & Green), Pixey and Yarnton Meads, Wolvercote Meadows, and Cassington Meadows.
- 29. The city of Oxford is more or less surrounded by land designated as 'Green Belt'. As set out in the Framework, the fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence. The OFAS is located within the Green Belt to the west of Oxford.

# PLANNING POLICY

The National Planning Policy Framework

- 30. As set out above the revised Framework was published in December 2023 and sets out the Government's planning policies for England and how these should be applied. Planning law requires that applications for planning permission be determined in accordance with the development plan unless material considerations indicate otherwise. The NPPF is a material consideration in planning decisions.
- 31. The thrust of the Framework remains the achievement of Sustainable Development, through 3 objectives:
  - An economic objective to help build a strong, responsive and competitive economy. This includes the requirement to identify and coordinate the provision of infrastructure;
  - A social objective to support strong, vibrant and healthy communities, and by fostering a safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health and social and cultural wellbeing; and
  - An environmental objective to contribute to protecting and enhancing our natural, built and historic environment, which includes adapting to climate change.
- 32. Accordingly, decisions should apply a presumption in favour of sustainable development, which means approving development proposals which accord with an up-to-date development plan.
- 33. In terms of economic development the Framework states, at paragraph 85, that *"Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development. The approach taken should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future."*
- 34. Chapter 8 sets out, amongst other things, that planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to

provide better facilities for users, for example by adding links to existing rights of way networks including National Trails. Chapter 9, at paragraph 115, states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

- 35. As stated in chapter 13, the Government attaches great importance to Green Belts. The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence.
- 36. In terms of biodiversity chapter 15 sets out that planning policies and decisions should contribute to and enhance the natural and local environment. Furthermore, if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.
- 37. When considering the impact of a proposed development on the significance of a designated heritage asset, chapter 16 states, at paragraph 205, that great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.

Oxfordshire County Council Minerals and Waste Core Strategy (2017)

- 38. The Oxfordshire Minerals and Waste Local Plan comprises: Part 1 Core Strategy, which was adopted in September 2017; and Part 2 Site Allocations.
- 39. Relevant policies brought to my attention include:
  - M2 Provision for working aggregate minerals
  - M3 Principal locations for working aggregate minerals
  - M10 Restoration of Minerals Working
  - W3 Waste
  - W6 Landfill and other permanent deposits of waste to land
  - W11 Safeguarded waste
  - C1 Sustainable Development
  - C2 Climate change
  - C3 Flooding
  - C4 Water
  - C5 Local Environment, amenity and economy
  - C7 Biodiversity and Geodiversity
  - C8 Landscape and Historic Environment
  - C9 Historic Environment and Archaeology
  - C10 Transport Policy C10

- C11 Rights of Way
- Policy C12 Green Belt

Oxford Local Plan 2016 – 2036

- 40. The Local Plan sets out the scale and general location of future development, and policies to deliver the vision and objectives of the area until 2036. The Local Plan forms the starting point for determining planning applications within Oxford City.
- 41. Relevant policies brought to my attention include:
  - Policy S1: Presumption in favour of sustainable development
  - Policy E1: Employment sites
  - Policy RE1: Sustainable design and construction
  - Policy RE2: Efficient use of Land
  - Policy RE3: Flood Risk Management
  - Policy RE4: Sustainable and foul drainage, surface and groundwater flow
  - Policy RE 6: Air Quality
  - Policy RE 7: Managing the Impact of Development
  - Policy RE 8: Noise and Vibration
  - Policy RE 9: Land Quality
  - Policy G 1: Protection of Green and Blue Infrastructure Network
  - Policy G 2: Protection of Biodiversity and Geodiversity
  - Policy G3: Green Belt
  - Policy G 4: Allotments and community food growing
  - Policy G5: Existing open space, indoor and outdoor sports and recreation facilities
  - Policy G6: Residential garden land
  - Policy G7: Protection of existing Green Infrastructure features.
  - Policy G8: New and enhanced Green and Blue Infrastructure Network Features
  - Policy DH1: High quality design and placemaking
  - Policy DH3: Designated heritage assets
  - Policy DH4: Archaeological remains
  - Policy DH5: Local heritage assets
  - Policy M1: Prioritising walking, cycling and public transport.
  - Policy M2: Assessing and managing development

#### Vale of White Horse Local Plan

- 42. The Vale of White Horse District Council's (VoWHDC) Local Plan 2031 Part 1: Strategic Sites and Policies, 2016 provides a policy framework for the delivery of sustainable development across the district up to 2031. It will be used to inform decisions on planning applications.
- 43. Relevant policies brought to my attention include:
  - Core Policy 1: Presumption in Favour of Sustainable Development
  - Core Policy 6: Meeting Business and Employment Needs
  - Core Policy 7: Providing Supporting Infrastructure
  - Core Policy 13: The Oxford Green Belt
  - Core Policy 34: A34 Strategy
  - Core Policy 35: Promoting public transport, cycling and walking
  - Core Policy 37: Design and Local Distinctiveness
  - Core Policy 40: Sustainable Design and construction
  - Core Policy 42: Flood Risk
  - Core Policy 45: Green Infrastructure

*Vale of White Horse Local Plan 2031 Part 2 Detailed Policies and Additional Sites 2019* 

- 44. This document provides the detailed policies required to determine planning applications. The relevant policies brought to my attention include:
  - Development Policy 16: Access
  - Development Policy 17: Transport Assessment and Travel Plans
  - Development Policy 23: Impact of Development on amenity
  - Development Policy 26: Air Quality
  - Development Policy 27: Land Affected by Contamination
  - Development Policy 29: Settlement Character and Gaps
  - Development Policy 30: Watercourses
  - Development Policy 31: Protection of Public Rights of Way (PRoW), National Trails and Open Access Areas
  - Development Policy 33: Open Space
  - Development Policy 36: Heritage Assets
  - Development Policy 38: Listed Buildings

North Hinksey Neighbourhood Plan (May 2021)

- 45. The North Hinksey Neighbourhood Plan (NHNP) was adopted in May 2021 and is part of the development plan for the area. It provides some policy detail to the specific area of North Hinksey. Relevant policies include:
  - Policy GS2 Biodiversity, Wildlife Corridors, TPOs and tree canopy cover
  - Policy GS3 Locally Important Views
  - Policy UT1 Flooding and Groundwater

#### National policy

- 46. The Department for Environment, Food and Rural Affairs' (Defra) 25 year Environment Plan (2018), sets out the Government's goals for improving the environment, within a generation, and to leave the environment in a better state than we found it. The goals set out include reducing the risk of harm from environmental hazards, including current and future flood risk and resilience, and mitigating the effects of climate change.
- 47. The Agency produces a national flood and coastal erosion risk management strategy (FCERM) for England. The current strategy was published in July 2020, alongside a new government policy statement on FCERM. This includes measures to create climate resilient places through understanding the impacts of climate change on flood risk.
- 48. The Thames Catchment Flood Risk Management Plan (TCFMP) identifies the scheme as the preferred method of reducing flood risk for Oxford. The TCFMP is a strategic plan that sets out how to manage flood risk in nationally identified flood risk areas for the period 2121-2027, and are statutory plans required by the Flood Risk Regulations 2009.

#### THE PURPOSE OF THE CPO

- 49. Many properties in Oxford, both residential and commercial, as well as roads, the railway and utility infrastructure are at risk of flooding from the rivers in Oxford. If nothing was done to manage flood risk, approximately 2,200 properties would be at risk from internal flooding in a major flood that has a 1% chance of happening each year (1% Annual Exceedance Probability (AEP)). The Agency's existing flood risk management activities reduce this, but around 1,600 properties still remain at risk. The OFAS is designed to reduce the likelihood of flooding for all of these properties currently at risk of flooding from the River Thames in Oxford.
- 50. Moreover, climate change is not only increasing the extent of flooding but also the frequency and scale of disruption to Oxford and the wider area. If no action is taken the modelling results highlight that approximately 5,600 properties will be at flood risk 2080. The results of the detailed design modelling completed for OFAS show that all properties in Oxford that are currently at risk of flooding from the River Thames, will have their flood risk reduced when the scheme is in place.
- 51. The purpose of OFAS is to manage the flood risk to Oxford over the next 100 years, reducing the frequency of flooding by creating more space for water within the existing western floodplain of the city. The scheme addresses flooding from the main channel of the River Thames and from the Hinksey and Bulstake Streams.
- 52. The proposed scheme would be approximately 5km long and would run from north of Botley Road down to south of the A423 southern by-pass where it would re-join the River Thames.

- 53. The first stage would consist of a new stream that would look natural and connect with the existing braided network of streams at different points. The new stream would be permanently wet and carry flowing water all of the time.
- 54. The second stage would consist of a wide shallow sloped channel created by lowering the ground between 0.5m and 1.2m to one or both sides of the first stage stream. This would blend in with the floodplain and would remain dry for most of the time. When river levels are sufficiently high, water would flow along the second stage channel. In some local areas, a second stage channel will be constructed without a first stage stream and vice versa.
- 55. The scheme also proposes the:
  - Provision of new flood defences (embankments and walls) to protect properties which would otherwise continue to flood even with the reduced river levels;
  - Provision of new culverts and bridges to cross highways and footpaths to maintain access routes;
  - Installation of flood gates for access (open under normal, non-flood, conditions) through the new defences noted above;
  - 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, except when maintenance or other activities would conflict with this;
  - Creation of new and/or improved habitat for flora, fauna and fisheries. This habitat creation/restoration forms part of the integrated design of the scheme to help mitigate habitat losses, to meet Water Framework Directive Regulations and support Environment Act 2021 biodiversity net gain targets e.g. new wetland habitat within the footprint of the second stage channel, new channel connecting the Bulstake and Hinksey Streams, habitat improvements including scrapes, ponds and backwaters. The wetland features in the second stage channel will incorporate a variety of profiles and gradients, to include marginal shelves, steep banks and undulating bed profiles to maximise wetland habitat diversity;
  - Removal of Towles Mill Weir will facilitate unimpeded fish passage around Oxford for the first time in over a century;
  - Change of use of land for public recreation to provide exchange for existing open space if required;
  - Change of use of land to provide allotments;
  - There will be 3 telemetry cabinets located at different points across the scheme to monitor flows; and
  - Eastwyke Ditch flood control structure.
- 56. It is acknowledged that temporary flood defences would continue to be deployed, albeit less frequently than at present, as a part of a permanent solution.
- 57. Subject to the necessary approvals the Agency states that construction of the scheme is planned to start in 2024 and is expected to take between 3 years and 5 years. The final programme is dependent on the delivery of the replacement A423 Kennington Railway Bridge by Oxfordshire County Council.

# THE CASE FOR THE ORDER MAKING AUTHORITY: THE ENVIRONMENT AGENCY

58. The material points taken from the closing submissions are as follows and the comments in the supporting footnotes are comments made by the Agency:

#### Introduction

- 59. It is only a matter of time before Oxford suffers from major flooding on the scale of that experienced in 1947.<sup>1</sup> When this happens, over 1,600 properties in Oxford will be internally flooded.<sup>2</sup> Two of the main arterial routes into Oxford will be closed and so will the railway. There will be disruption to power and services. Such an event will destroy property and pose a risk to life. Such a flood could last for over seven days.
- 60. Even the comparatively modest flooding over the last two decades, and even this year, 2024, has caused disruption for many and devastation for some. Some of those directly affected by flooding have given evidence to the Inquiry in support of the scheme, in addition to those representing communities affected.<sup>3</sup> The message from these individuals is clear: they will never forget the trauma and fear that flooding causes. The temporary disruption caused by the construction of the scheme is demonstrably outweighed by the substantial benefits that it will deliver.<sup>4</sup> The serious risk that flooding poses must be dealt with as soon as possible.<sup>5</sup>
- 61. Even those who object to the scheme do not dispute the need for action to be taken to alleviate the effects of flooding in Oxford.<sup>6</sup> There is, therefore, a considerable consensus about the need for the scheme. For the reasons that have been explored in detail during the course of the Inquiry the OFAS is the best solution, and the only scheme before this Inquiry capable of appropriately meeting this need. Without this CPO, the scheme simply cannot be delivered. Indeed, there is no scheme suggested to the Inquiry which could deliver a flood alleviation scheme without the compulsory acquisition of land and rights of a similar extent to those required for the scheme itself.
- 62. The remainder of these closing submissions are structured as follows:
  - The need for the scheme;
  - Scheme design;
  - Benefits of the scheme;
  - Commitment from scheme partners;
  - Justification for the land take;

<sup>&</sup>lt;sup>1</sup> Richard Harding, EiC (Day 1).

<sup>&</sup>lt;sup>2</sup> Richard Harding, Proof, page 12, para 2.8.

<sup>&</sup>lt;sup>3</sup> Andrew Down, Vale of White Horse District Council (Day 3).

<sup>&</sup>lt;sup>4</sup> Adrian Porter, Sup02/1.

<sup>&</sup>lt;sup>5</sup> John Mastroddi, Sup02/2.

<sup>&</sup>lt;sup>6</sup> For example, both Brian Durham and Chris Sugden expressed strong support for all the work of the Oxford Flood Alliance to seek to address flooding. Patricia Murphy expressed "complete support" for a flood alleviation scheme of some sort.

- Alternatives;
- Compliance with the adopted development plan for the area;
- Funding for construction and maintenance;
- Physical and legal impediments;
- CPO as a last resort and efforts to acquire by agreement;
- The CPO Guidance;
- Public sector equality duty;
- Human rights impacts;
- Compliance with section 19 of the Acquisition of Land Act 1981;
- Other matters; and
- Conclusion.

#### The scheme is needed now

- 63. Oxford sits at the confluence of seven rivers, which drain a predominantly rural catchment area of 3,000 square km. Downstream of Oxford, the floodplain significantly narrows to 300m wide, increasing water levels upstream in flood conditions.<sup>7</sup> Due to the in-bank capacity of the river Thames and secondary rivers, water overtops the riverbanks once flows are greater than a <u>1 in 2 event</u>.<sup>8</sup> The River Thames is slow to respond to rainfall, meaning that flood events are long in duration, typically lasting over seven days.<sup>9</sup>
- 64. A long history of development within the western floodplain means that it is heavily populated.<sup>10</sup> The constraining effect of the built environment means that the roads and bridges that cross the current river channels do not have sufficient capacity to pass flood flows, even for the smaller, more frequent flood events like those experienced in recent years. This leads to flood waters backing-up and spilling into vulnerable areas.<sup>11</sup> At present, the standard of protection for properties and infrastructure in the city varies but is as low as <u>1 in 5</u> (20% AEP) in places.<sup>12</sup>
- 65. Oxford has experienced flooding events in 2000, 2003, 2007, 2009, 2011,<sup>13</sup> 2012 and 2013/2014. It has since experienced flooding in January 2024, during the adjournment of the Inquiry. On each occasion, properties have been subject to internal flooding. Photographs from the 2003 floods show the sheer extent of flooding.<sup>14</sup>
- 66. Flooding of the scale experienced in 2007 is currently estimated to have a <u>1 in 10 year</u> return period. During that flood event, residents in Botley and on Osney Island were

<sup>&</sup>lt;sup>7</sup> Richard Harding's Proof, page 13, para 2.17.

<sup>&</sup>lt;sup>8</sup> Richard Harding's Proof, page 13, para 2.18.

<sup>&</sup>lt;sup>9</sup> Richard Harding's Proof, page 14, para 2.19.

<sup>&</sup>lt;sup>10</sup> Thames Catchment Flood Risk Management Plan, pp.24 – 25 (**CD2.6**).

<sup>&</sup>lt;sup>11</sup> Richard Harding, Proof, page 14, para 2.19.

<sup>&</sup>lt;sup>12</sup> Richard Harding, Proof, page 14, para 2.21.

<sup>&</sup>lt;sup>13</sup> Oxford has reportedly experienced internal flooding in 2009 and 2011 but the Environment Agency has been unable to verify figures. Statement of Case, page 5, para 2.9 (**CD1.3**).

<sup>&</sup>lt;sup>14</sup> Richard Harding, EiC, (Day 1) **INQ/8a.** 

evacuated; and two main arterial routes into Oxford were closed, in addition to many other local roads.<sup>15</sup> The mainline railway was closed for over five days.<sup>16</sup>

- 67. Had the scheme been in place, each of the eight flood events that have taken place since 2000, including this year's flooding, would have been avoided.<sup>17</sup>
- 68. The flooding in recent years, whilst devastating for those affected, has been relatively modest in scale. The last recorded major flood in Oxford was in 1947. In the event of a flood of this magnitude, over 1,600 properties in Oxford would be internally flooded, including 300 non-residential properties.<sup>18</sup> Such a flood would also cause major disruption to the road network, railway and utilities. As explained by Richard Harding, *"it's a matter of 'when', not 'if'*"<sup>19</sup> such a catastrophe will occur without a flood alleviation scheme.
- 69. The extensive network of interconnected secondary watercourses in Oxford,<sup>20</sup> most of which are in the western floodplain, means that implementing flood risk measures to one area could leave properties and infrastructure at risk of flooding from another watercourse and could exacerbate flooding in other areas.<sup>21</sup> For this reason, Oxford is treated as a single flood cell for the purposes of developing a flood alleviation solution.<sup>22</sup>

#### Action taken to date

- 70. Oxford does not currently benefit from any formal flood defences.<sup>23</sup> Flooding is currently managed through the Thames Valley Local Resilience Forum Multi Agency Flood Plan<sup>24</sup> and the OxCoCo Flood Plan.<sup>25</sup> As explained by Mr Simpson, the Environment Agency carries out maintenance activities under its statutory powers on the principal watercourses in Oxford to help to reduce flood risk for low order events<sup>26</sup> and monitoring year round flow levels through the Agency's telemetry system.<sup>27</sup> Current maintenance activities include blockage removal, vegetation management and targeted tree works.<sup>28</sup>
- 71. The Agency has already taken additional short-term action to alleviate flooding in Oxford. This has included procuring temporary flood barriers following the floods in

<sup>&</sup>lt;sup>15</sup> Richard Harding, Proof, page 11, para 2.8.

<sup>&</sup>lt;sup>16</sup> Richard Harding, Proof, page 11, para 2.8.

<sup>&</sup>lt;sup>17</sup> Richard Harding, Proof, page 62, para 13.4.

<sup>&</sup>lt;sup>18</sup> Richard Harding, Proof, page 16, para 2.28. See Apx B to the Flood Risk Assessment for an indication of how a major flood would affect Oxford (**CD3.38a**).

<sup>&</sup>lt;sup>19</sup> Richard Harding, EiC (Day 1).

<sup>&</sup>lt;sup>20</sup> See identification of the streams and rivers at CD2.13.

<sup>&</sup>lt;sup>21</sup> Richard Harding, Proof, page 14, para 2.20.

<sup>&</sup>lt;sup>22</sup> Richard Harding, Proof, page 14, para 2.20.

<sup>&</sup>lt;sup>23</sup> Richard Harding, Proof, page 14, para 2.20.

<sup>&</sup>lt;sup>24</sup> Richard Harding, Proof, Apx 6.

<sup>&</sup>lt;sup>25</sup> Richard Harding, Proof, Apx 7.

<sup>&</sup>lt;sup>26</sup> Gareth Simpson, Proof, page 9, para 4.1.

<sup>&</sup>lt;sup>27</sup> Gareth Simpson, Proof, page 5, para 3.9.

<sup>&</sup>lt;sup>28</sup> Gareth Simpson, Proof, page 9, para 4.2.

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2007.<sup>29</sup> These barriers were deployed during winter flooding in 2012/2013 and 2013/2014<sup>30</sup> at South Hinksey Village and Osney Island, and again this month. New culverts were installed in 2014 at pinch points, including at Willow Walk and at the Network Rail access track at Old Abingdon Road.<sup>31</sup> These measures comprise phase 1 of the three-stage strategy for managing flood risk in Oxford, as explained further below.

72. Whilst these measures have helped reduce the localised impact of flooding where deployed, what has been done to date is simply not enough to address the risks of flooding in Oxford and comes at a significant resource cost each time a flood event occurs.

#### Impact of climate change

- 73. The climate emergency facing this country needs no introduction. As recognised in the TCFMP, climate change is the major cause of increased flood risk in the future.<sup>32</sup>
- 74. In response to the Government's UK climate change predictions published in November 2018,<sup>33</sup> the Agency published a new guidance note in July 2020 on climate change allowances.<sup>34</sup> The predicted uplifts for river flood flows for the catchment area of the scheme are 11%, 13% and 30% for the 2020s, 2050s and 2080s.<sup>35</sup> The practical effect of this is that more properties will be at risk from the same flood event than they would be today.<sup>36</sup> Put another way, flood events which would cause disruption and damage to homes and businesses will become more frequent. As Phil Raynor explained<sup>37</sup>, when climate change effects are considered a flood event which would have been a 1 in 100 year (1% AEP) event in 2016 will be a 1 in 50 year (2% AEP) event in the 2020s, and a 1 in 20 year (5% AEP) event in the 2080s. Thus he told the Inquiry that there is no doubt that flooding on a substantial scale of the likes of that experienced in Oxford in 1894, 1903 and 1947 will happen again, especially with the effects of climate change.<sup>38</sup> None of this evidence is questioned by the objectors.

#### Scheme design

#### <u>Key guidance</u>

75. In order for a proposal to secure public funding, HM Treasury requires that an appraisal is carried out in order to determine the value that that proposal would secure in accordance with the Green Book.<sup>39</sup> As HM Treasury funds Flood and Coastal Erosion

<sup>&</sup>lt;sup>29</sup> Gareth Simpson, Proof, page 6, para 3.14.

<sup>&</sup>lt;sup>30</sup> Gareth Simpson, Proof, page 6, para 3.14.

<sup>&</sup>lt;sup>31</sup> Richard Harding, Proof, page 30, para 5.9(a).

<sup>&</sup>lt;sup>32</sup> Page 10, **CD2.6**.

<sup>&</sup>lt;sup>33</sup> CD5.10.

<sup>&</sup>lt;sup>34</sup> CD5.3.

<sup>&</sup>lt;sup>35</sup> Richard Harding, Proof, page 21, para 3.6(a).

<sup>&</sup>lt;sup>36</sup> Richard Harding, Proof, page 50, para 9.11.

<sup>&</sup>lt;sup>37</sup> Phil Raynor, EiC (Day 1); see also INQ/14 Slide 10

<sup>&</sup>lt;sup>38</sup> Phil Raynor, EiC (Day 1).

<sup>&</sup>lt;sup>39</sup> Richard Harding, Proof, page 17, para 3.2.

Risk Management ('FCERM') schemes, a Green Book assessment must be carried out in respect of such schemes. The requirements of the Green Book therefore underpin the Flood and Coastal Erosion Risk Management Appraisal Guidance (FCERM-AG) on evaluating investment in FCERM schemes.<sup>40</sup> All publicly funded flood defence strategies and projects must be assessed against this guidance.<sup>41</sup>

- 76. The FCERM-AG prescribes how a leading option is to be selected, by identifying the option with the highest average benefit:cost ratio (BCR) as the leading option. Options are ranked in order of increasing benefits. Additional benefits of the options are compared to the additional costs required to secure them, providing an incremental benefit:cost ratio ('iBCR').<sup>42</sup> 'Do nothing' and 'do minimum' options are also included within the appraisal, in accordance with the FCERM-AG.<sup>43</sup> The standard appraisal period for flood defence strategies and schemes is 100-years.<sup>44</sup> This is the period that has been used in appraisal of the scheme, although its benefits will extend beyond that period.
- 77. It is notable that the FCERM-AG emphasises the need to adopt a proportionate approach to appraisals.<sup>45</sup> The 2010 version of the FCERM-AG made clear that a project team should "*avoid excessive data collection or abortive works*", which requires non-viable options to be identified efficiently.<sup>46</sup>
- 78. Whilst a number of objectors<sup>47</sup> have criticised the scheme selection process, it is significant that none of those objectors suggest that the approach of applying the FCERM-AG is wrong, or that there is some alternative basis for scheme selection that should have been adopted. Indeed, the two hydrologists called as expert witnesses for objectors agreed that the FCERM-AG was the correct tool to use to select the scheme.<sup>48</sup> It was also accepted that compliance with the FCERM-AG is necessary to do so in order that any flood defence scheme can be funded by Treasury.<sup>49</sup> It is therefore beyond dispute that the scheme has been selected through the application of the relevant guidance on flood risk management measures: a point which underscores the compelling case for the scheme and thus the CPO, and which undermines any suggestion that an alternative should be preferred.
- 79. Notwithstanding that agreed position between all the experts, there are various suggestions from non-statutory objectors and indeed from the advocates for both the Ferry Hinksey Trust (FHT)/Oxford Flood Environment Group (OFEG) and Oxford Preservation Trust (OPT) that alternatives should be preferred because the benefits of those alternatives are not *significantly* lower than those of the scheme. This turns the FCERM-AG on its head. It prescribes a process to optimise the use of public money in flood relief schemes. It does not prescribe a separate series of subjective judgements

<sup>&</sup>lt;sup>40</sup> The 2010 version of the guidance is at **CD5.7.** The guidance was updated in March 2022 (**CD5.6**).

<sup>&</sup>lt;sup>41</sup> Richard Harding, Proof, page 18, para 3.3.

<sup>&</sup>lt;sup>42</sup> Richard Harding, Proof, page 19, para 3.4(b). Section 11.3.2, page 154 (**CD5.6**).

<sup>&</sup>lt;sup>43</sup> Richard Harding, Proof, page 19, para 3.4(b).

<sup>&</sup>lt;sup>44</sup> Richard Harding, Proof, page 20, para 3.4(e).

<sup>&</sup>lt;sup>45</sup> Richard Harding, Proof, page 19, para 3.4(d).

<sup>&</sup>lt;sup>46</sup> Richard Harding, Proof, page 19, para 3.4(d).

<sup>&</sup>lt;sup>47</sup> Most significantly, OFEG/FHT and OPT.

<sup>&</sup>lt;sup>48</sup> Rhys Coombs, XX (Day 4). Clive Carpenter, XX (Day 8).

<sup>&</sup>lt;sup>49</sup> Agreed: Rhys Coombs, XX (Day 4).

as to whether, for example, the additional benefits of the selected options are a "tiny fraction"<sup>50</sup> of the overall benefits. The FCERM-AG is the correct guidance to decide the preferred option for flood alleviation in Oxford.

#### Overview of design development

- 80. The FCERM-AG has not, however, been applied in isolation, but rather following a long period of evolution of the scheme that was initiated following the July 2007 floods. It has been subject to a thorough, detailed and ongoing process of review and has been informed by flood risk modelling. In summary:
  - The Oxford Flood Risk Management Strategy ('OFRMS') was produced in response to the 2007 floods. The strategy, which was approved in September 2010, reviewed over 100 options or combinations of options. The strategy recommended a three-phase approach to managing flood risk in Oxford over the next 100 years.<sup>51</sup> The first phase (Oxford Short Term Measures) was completed in 2014 and involved localised river dredging, vegetation clearance and culvert works.<sup>52</sup> The second phase, which is now this scheme, involves increasing the flow capacity of the river and floodplain system through Oxford.<sup>53</sup> The OFRMS did not at the time identify the precise location or configuration of the conveyance. The third phase will most likely involve upstream flood storage, which would be subject to a separate appraisal if required at a later date to address the effects of climate change.<sup>54</sup>
  - Six technically viable options for the second phase identified in the OFRMS were reviewed in October 2014. This took place following the winter flooding in 2013/2014, which led to the formation of the Sponsoring Group (see paragraph 117 below). In light of the flood events that had recently occurred, the review concluded that the second phase was now both technically and economically viable.<sup>55</sup>
  - The Strategic Outline Case was approved in June 2015. A long list of fourteen viable conveyance options were reviewed, and the recommendation reached was to pursue a new conveyance channel, in combination with the enlargement of existing channels in the western floodplain. <sup>56</sup>
  - The Outline Business Case was approved in November 2017, which reviewed options centred on a conveyance channel. Localised defences were introduced to work in combination with the channel. Fourteen options were subject to a multi-criteria analysis and economic assessment. An economic appraisal of the

<sup>&</sup>lt;sup>50</sup> OPT closing, 94. See also the suggestion at OPT closing 115 of considering "the extent of incremental difference". This approach is <u>not</u> consistent with the FCERM-AG.

<sup>&</sup>lt;sup>51</sup> Richard Harding, Proof, page 3, para 1.8.

<sup>&</sup>lt;sup>52</sup> Richard Harding, Proof, page 3, para 1.8.

<sup>&</sup>lt;sup>53</sup> Richard Harding, Proof, page 25, para 4.0(a).

<sup>&</sup>lt;sup>54</sup> Richard Harding, Proof, page 3, para 1.8.

<sup>&</sup>lt;sup>55</sup> Richard Harding, Proof, page 25, para 4.0(b) and page 35, para 7.6(a)-(c).

<sup>&</sup>lt;sup>56</sup> Richard Harding, Proof, page 25, para 4.0(c).

options was carried out in accordance with the FCERM-AG, which involved comparing each option's iBCR. The outcome of the appraisal favoured a medium conveyance channel with localised defences.<sup>57</sup> The alignment of the channel was determined through detailed design undertaken as part of the Outline Business Case.<sup>58</sup> This process considered a number of options for the seven geographical areas within the study area.<sup>59</sup>

- The Full Business Case, which is yet to be submitted to the Treasury, refines the costs and benefits of ten options.<sup>60</sup> The preferred option is the medium conveyance channel with permanent localised defences as well as the deployment of temporary defences.<sup>61</sup> The Full Business Case will not be submitted for approval until the necessary consents for the scheme have been secured.
- 81. In accordance with the FCERM-AG,<sup>62</sup> a proportionate approach has been taken to the assessment of options that are not feasible, either due to technical, economic or environmental reasons.<sup>63</sup> It should be noted in this regard that the objectors' alternatives, which are considered further below, are ones which are not considered feasible.

#### Role of engagement in design

82. The scheme's development has been informed by extensive consultation with key stakeholders and the public over many years. A series of public consultation events were held in summer 2015, followed by five public drop-in sessions held in January to March 2016 as part of the Outline Business Case, which were attended by nearly 900 people. An online public consultation was held between January and March 2016.<sup>64</sup> The feedback from stakeholders, the public and key landowners formed part of the multi-criteria analysis, which identified a preferred route in each geographical area.<sup>65</sup> Downstream focus group sessions were held in May 2016, followed by a series of pop up and drop-in events and meetings with Parish Councils in 2016 to 2017.<sup>66</sup> Throughout the development of the scheme, the Agency has engaged directly with community and residents groups.<sup>67</sup> In May 2021, whilst COVID-19 measures remained in place, the Agency conducted virtual engagement events and an online feedback questionnaire.<sup>68</sup>

<sup>&</sup>lt;sup>57</sup> Richard Harding, Proof, page 25, para 4.0(d).

<sup>&</sup>lt;sup>58</sup> Richard Harding, Proof, page 39, para 9.3.

<sup>&</sup>lt;sup>59</sup> Richard Harding, Proof, page 39, para 9.3(a).

<sup>&</sup>lt;sup>60</sup> These are set out at page 58, para 12.2 of Richard Harding's Proof.

<sup>&</sup>lt;sup>61</sup> Richard Harding, Proof, page 26, para 4.0(e). This is explained further by Richard Harding in section 12 of his Proof.

<sup>&</sup>lt;sup>62</sup> CD5.7.

<sup>&</sup>lt;sup>63</sup> Richard Harding, EiC (Day 1).

<sup>&</sup>lt;sup>64</sup> Statement of Community Involvement, section 3.5 (CD3.37).

<sup>&</sup>lt;sup>65</sup> Richard Harding, Proof, page 40, para 9.3(b).

<sup>&</sup>lt;sup>66</sup> Statement of Community Involvement, sections 3.8 – 3.12 (CD3.37).

<sup>&</sup>lt;sup>67</sup> Statement of Community Involvement, sections 3.13 (**CD3.37**).

<sup>&</sup>lt;sup>68</sup> Statement of Community Involvement, sections 3.14 (CD3.37).

- 83. The need to meet the scheme objectives, without increasing flood risk to others, inevitably constrains the ability of the Agency to accommodate every change to the scheme sought by landowners. Wherever possible, however, views of landowners and affected parties have been taken into account in the design of the scheme. A clear example of this is in respect of the impacts on Hinksey Meadow.<sup>69</sup> Four alternative alignments were identified and presented to OPT. The outcome of the engagement with OPT was that the present alignment was considered to be the 'least worst' option.<sup>70</sup> A further example is the design of the main compound, which has been amended in direct response to concerns of residents of South Hinksey village.<sup>71</sup>
- 84. Whilst certain objectors,<sup>72</sup> have sought to criticise the extent of engagement on the design of the scheme,<sup>73</sup> it is readily apparent that the scheme has been subject to extensive engagement over a period of very many years. It is inherent in the principle of consultation that it invites a range of views; it is inevitable that not all of the views expressed can be taken forward by the Agency.<sup>74</sup> The criticisms about the engagement process are, in substance, merely expressions of dissatisfaction about the extent to which particular representations have shaped the development of the scheme.
- 85. With regards to the specific objection advanced by OFEG, it is notable that the group was only formed in November 2021, a matter of months before the submission of the planning application and some six years after engagement on the design of the scheme began.<sup>75</sup> As accepted by Patricia Murphy, all of the points now raised by OFEG are issues that were raised by consultees during the engagement process and were therefore live issues for the Agency to consider during the design development. Indeed, the Agency has engaged directly with a number of individuals that are now prominent members of OFEG, but were formerly part of other groups.<sup>76</sup> The fact that the Agency does not agree with the proposals promoted by OFEG does not undermine the adequacy of the engagement that has taken place. Engagement can be adequate notwithstanding that the views of some consultees are not ultimately accepted.<sup>77</sup>

#### Role of hydraulic modelling in design

- 86. The development of the scheme has been informed by two models; a fluvial model and a groundwater model. Phil Raynor explained the evolution of both models in his evidence.<sup>78</sup>
- 87. The fluvial model was used to simulate the river flows and overland flood flow mechanisms.<sup>79</sup> It was used to represent the existing flooding mechanisms in Oxford

- <sup>78</sup> Phil Raynor EiC (Day 1). INQ/14.
- <sup>79</sup> Phil Raynor, Proof, page 5, para 4.1.

<sup>&</sup>lt;sup>69</sup> Richard Harding, para 9.4(d).

<sup>&</sup>lt;sup>70</sup> Richard Harding, Proof, page 42, para 9.4(d); Richard Harding, EiC (Day 1).

<sup>&</sup>lt;sup>71</sup> Statement of Community Involvement, sections 7.12 (CD3.37).

<sup>&</sup>lt;sup>72</sup> In particular, Patricia Murphy on behalf of OFEG.

 $<sup>^{73}</sup>$  See Patricia Murphy, Proof, pages 3 – 4, paras 10 – 14.

<sup>&</sup>lt;sup>74</sup> Accepted by Patricia Murphy, XX (Day 7).

<sup>&</sup>lt;sup>75</sup> Confirmed by Patricia Murphy, XX (Day 7).

<sup>&</sup>lt;sup>76</sup> Such as Rod Chalk and Brian Durham. Patricia Murphy accepted in XX that these individuals, who are now part of OFEG, have been engaged with the scheme for a long period of time and prior to the formation of OFEG (Day 7).

<sup>&</sup>lt;sup>77</sup> Accepted by Patricia Murphy, XX (Day 7).

and test the proposed designs to ensure that the flood risk reduction benefits were maximised.<sup>80</sup> The fluvial model has also allowed a geomorphological assessment of the impacts of the scheme to be carried out.<sup>81</sup> This enables an understanding of how the channel would behave in terms of erosion and deposition of silt and gravels.<sup>82</sup>

- 88. The groundwater model has been used to understand the impact of the scheme on the groundwater flood risk.<sup>83</sup> The groundwater model used outputs from the fluvial model to simulate the changes that the scheme may have on groundwater levels and flows across the Oxford area.<sup>84</sup>
- 89. The fluvial model has been built to represent the channels in the Oxford area.<sup>85</sup> It covers approximately 19km of the River Thames and a much larger area than Oxford. This ensures that local boundary condition uncertainties do not impact the accuracy of the model results.<sup>86</sup> The groundwater model covers a similar extent to the fluvial model, which includes local environmentally sensitive sites.<sup>87</sup>
- 90. Modelling has been used in the design of the scheme since the OFRMS. The existing models were updated and improved at the Outline Business Case and subsequently to create the detailed design model for the Full Business Case stage.<sup>88</sup> As such, the models have evolved over time based on information gathered from surveys, both of the channels and structures on the floodplain, to ensure that the physical representation of the current situation is as accurate as possible.
- 91. The in-flows to the fluvial model represent the hydrology of the catchment area. The model has been updated on the basis of a detailed review of the historical flood record from gauges within the scheme area.<sup>89</sup> An annual maximum average flow has been calculated for each gauge, which informs the flood frequency curve.<sup>90</sup> The modelling produces an estimated flood return period for each catchment, which respond at different rates to each other in a flood event. The variability of sub-catchment areas, reflecting the fact that water levels in sub-catchment areas peak at different times, has been assessed.<sup>91</sup> This has been subject to extensive sensitivity testing, which provides increased confidence in the flood frequency analysis.<sup>92</sup>
- 92. The model has been calibrated against recorded information from the July 2007 flood event.<sup>93</sup> The model has been verified through the simulation of further historical events,

- <sup>83</sup> Phil Raynor, Proof, page 5, para 4.3.
- <sup>84</sup> Phil Raynor, Proof, page 5, para 4.3.
- <sup>85</sup> Phil Raynor, EiC (Day 1). Page 1, INQ/14.
- <sup>86</sup> Phil Raynor, Proof, page 6, para 5.2.
- <sup>87</sup> Phil Raynor, Proof, page 6, para 5.4.
- <sup>88</sup> Phil Raynor, Proof, pages 9 10, para 7.4 7.5.
- <sup>89</sup> Phil Raynor, Proof, pages 12 13, para 8.4 8.6.
- <sup>90</sup> Phil Raynor, Proof, page 13, paras 8.6 8.7.
- <sup>91</sup> Phil Raynor, Proof, page 13, para 8.7.
- <sup>92</sup> Phil Raynor, Proof, pages 14 16, paras 8.9 8.12.

<sup>&</sup>lt;sup>80</sup> Phil Raynor, Proof, page 5, para 4.1.

<sup>&</sup>lt;sup>81</sup> Phil Raynor, Proof, page 5, para 4.2.

<sup>&</sup>lt;sup>82</sup> Phil Raynor, Proof, page 5, para 4.2.

<sup>&</sup>lt;sup>93</sup> See Calibration Report, page 153 in Apx C to Flood Risk Assessment (**CD3.38a**). Phil Raynor, Proof, page 20, para 9.4.

using the parameters developed through calibration.<sup>94</sup> The model was updated and improved in response to the calibration and verification work, resulting in a level of accuracy of typically within 0.1m.<sup>95</sup>

- 93. To ensure the accuracy of the groundwater model, it has been calibrated to actual recorded groundwater levels observed at 20 locations during the 2007 flood event.<sup>96</sup> The calibration of the model was refined using observed data from boreholes across the scheme area.<sup>97</sup> Pump tests have been undertaken to understand how permeable the ground strata are.
- 94. Both models have been peer reviewed by external consultants on a number of occasions.<sup>98</sup> The review process concluded that there was no reason to doubt the results given the quality of the modelling.<sup>99</sup> Indeed, fluvial hydrologist and hydrogeology experts instructed by both OFEG and OPT do not dispute the quality and suitability of the modelling for optioneering, development and design of the scheme.<sup>100</sup>
- 95. In accordance with the latest climate change guidance, the 1% AEP (1 in 100 year event) inflows used for the fluvial model are subject to an 11% uplift as baseline for the 2020 epoch.<sup>101</sup> For the epochs beyond this, the model adjusts further for the effects of climate change. In practical terms, and as noted above, this means that by the 2080s, a 1 in 100 year event in 2016 will be approximately a 1 in 20 year event.<sup>102</sup>
- 96. The continual process of updating and refining the models means that they provide a robust and accurate representation of the study area. The models have been used to test the proposed size of channels and structures, identify where flood defences are required or where there are constraints to the length of such defences, as well as identifying where flood risk benefits would arise as a result of the scheme.
- 97. As explained by Mr Raynor, the hydrological modelling has demonstrated that there is a clear need for the scheme.<sup>103</sup>

#### Main elements of the scheme

98. The main element of the Scheme centres on increasing flow capacity in the Oxford western floodplain by lowering sections of the existing floodplain and creating a new naturalised two-stage river channel to the west of Oxford, between the A34 to the west and the railway to the east. The channel will extend for a length of approximately 5km, south easterly from the confluence of the Botley and Seacourt Streams lying approximately 0.6km north of Botley Road, to Kennington. The new conveyance

<sup>&</sup>lt;sup>94</sup> See Calibration Report, page 153 in Apx C to Flood Risk Assessment (**CD3.38a**). Phil Raynor, Proof, page 20, para 9.4.

<sup>&</sup>lt;sup>95</sup> Phil Raynor, Proof, page 22, para 9.8.

<sup>&</sup>lt;sup>96</sup> Phil Raynor, Proof, page 24, para 9.15.

<sup>&</sup>lt;sup>97</sup> Phil Raynor, Proof, page 24, para 9.15.

<sup>&</sup>lt;sup>98</sup> Phil Raynor, Proof, page 34 ff., section 12.

<sup>&</sup>lt;sup>99</sup> See Appendix H of the 'Oxford Flood Alleviation Scheme Detailed Design Hydraulic Modelling Report', page 117 in Appendix B of the FRA (**CD 3.38a**).

<sup>&</sup>lt;sup>100</sup> Rhys Coombs, XX (Day 4). Clive Carpenter, XX (Day 8).

<sup>&</sup>lt;sup>101</sup> Phil Raynor, Proof, page 37, para 13.3.

<sup>&</sup>lt;sup>102</sup> Phil Raynor, Proof, page 37, para 13.3.

<sup>&</sup>lt;sup>103</sup> Mr Raynor, EiC.

channel will carry excess flow from the Seacourt Stream, Bulstake Stream and Hinksey Stream channels during a flood event, thereby reducing flows and thus water levels in the main River Thames and so reducing the frequency and depth of flooding in built-up areas.

- 99. The first stage channel is the deeper, inner part of the new channel, typically dug into the gravel layer to create a natural stream that will be permanently wet and carry flowing water downstream. The second stage is created by lowering the existing ground to one or both sides of the first stage channel, before feathering back into existing ground level. It is designed to be as flat and wide as possible to provide sufficient capacity to carry the flood water removed from the River Thames but avoid increasing downstream flood risk. The second stage channel will be vegetated and grazed, but will fill with water during times of sufficiently high flow. During a large flood event, the existing floodplain around the channel will continue to be flooded, acting as a third-stage channel.<sup>104</sup>
- 100. The channel has been designed to fit in with the natural landscape, including by using predominantly earth embankments to provide new raised defences, in addition to flood walls.<sup>105</sup> The delivery of enhanced public open space and pedestrian routes, 16.65 hectares of species-rich floodplain meadow<sup>106</sup> and 11.34 hectares of tree planting has been integral to the design.<sup>107</sup>
- 101. The scheme includes nine new small flow control structures, which will regulate water levels in certain flow conditions.<sup>108</sup> The majority of these in-river fixed crest weirs ensure water is retained and managed for maximum environmental benefits in watercourses when river flows and levels are very low, save for that in the Bulstake Stream which is designed to maintain water levels in the River Thames.
- 102. The scheme has been developed to operate in accordance with the passive design principle.<sup>109</sup> As explained by Mr Simpson, this means that the scheme will operate under gravity, with water from the floodplain to the north of Oxford being channelled down the western side of the city, away from vulnerable areas.<sup>110</sup> This is in accordance with the Agency's Passive Design Guidance, which encourages the use of this principle in new flood schemes.<sup>111</sup> The passive design of the scheme means that it requires minimal active management during a flood event, thereby freeing up resource to be deployed elsewhere,<sup>112</sup> in contrast to the present demands placed on the Agency and others in times of flood in Oxford. The passive nature of the scheme also enhances its reliability by reducing the number of potential failure points.<sup>113</sup> The new conveyance channel works with the existing floodplain and does not remove its importance to

<sup>&</sup>lt;sup>104</sup> Richard Harding, Proof, page 52, para 10.3(b).

<sup>&</sup>lt;sup>105</sup> Richard Harding, Proof, page 54, para 10.4(h) identifies where earth embankments and flood walls will be constructed.

<sup>&</sup>lt;sup>106</sup> Richard Harding, Proof, page 54, para 10.4(j).

<sup>&</sup>lt;sup>107</sup> Richard Harding, Proof, page 54, para 10.4(k). Penny Burt, Proof, page 14, para 5.43.

<sup>&</sup>lt;sup>108</sup> Richard Harding, Proof, page 53, para 10.4(d), where the locations of these flow control structures are identified.

<sup>&</sup>lt;sup>109</sup> Gareth Simpson, Proof, page 3, para 3.3.

<sup>&</sup>lt;sup>110</sup> Gareth Simpson, Proof, page 3, para 3.3.

<sup>&</sup>lt;sup>111</sup> Gareth Simpson, Proof, Apx A.

<sup>&</sup>lt;sup>112</sup> Gareth Simpson, Proof, page 3, para 3.3.

<sup>&</sup>lt;sup>113</sup> Gareth Simpson, Proof, page 4, para 3.5.

Oxford. The channel simply creates more space for flood water to move through the western floodplain, thereby working with the existing river system rather than against it.<sup>114</sup>

- 103. The scheme has also been designed to be resilient to the typical operational problems experienced during flood events. This includes having large, clear span openings under bridges, with maintenance vehicle working areas alongside them, in order to reduce the risk of blockages.<sup>115</sup> The second stage channel will be free from fences, to mitigate against smaller debris snagging and building up.<sup>116</sup> The width and shape of the second stage channel, coupled with armouring of the beds and banks at constricted points, reduces the risk of erosion from turbulent water flows.<sup>117</sup>
- 104. The other elements of the scheme include six new flood gates,<sup>118</sup> an automated tilted weir structure at Eastwyke Ditch and new localised flood defences. The flood gates will be closed manually by Agency operatives in the event of high flows, which are monitored by the Agency's telemetry systems.<sup>119</sup> The Eastwyke Ditch tilting flood gate is the only mechanically operated flood gate within the scheme. It has been designed to close automatically in response to water levels<sup>120</sup> and operates in both directions depending on the flow of water.<sup>121</sup> The control system has built in fail-safe mechanisms in the event of a power failure.<sup>122</sup>
- 105. The scheme will also deliver seven new or upgraded bridges over the channel. This includes the Westway cycling bridge; Willow Walk; North Hinksey Causeway, the pedestrian bridge at North Hinksey, Devil's Backbone, Old Abingdon Road and Kennington Road. These are required in order to maintain pedestrian and cycle routes across the floodplain.<sup>123</sup>

#### Benefits of the scheme

106. The scheme has been designed to meet four key partnership objectives, all of which comprise several sub-objectives.<sup>124</sup> These objectives are:

- <sup>123</sup> Richard Harding, Proof, pages 52 54, para 10.4.
- <sup>124</sup> Emma Formoy, Proof, page 7, Table 1.

<sup>&</sup>lt;sup>114</sup> Gareth Simpson, EiC (Day 2).

<sup>&</sup>lt;sup>115</sup> Gareth Simpson, Proof, page 4, para 3.6.

<sup>&</sup>lt;sup>116</sup> Gareth Simpson, Proof, page 4, para 3.6.

<sup>&</sup>lt;sup>117</sup> Gareth Simpson, Proof, page 4, para 3.6.

<sup>&</sup>lt;sup>118</sup> At Seacourt Park & Ride, Helen Road, Henry Road, Bulstake Close, Old Abingdon Road and South Hinksey village. See Gareth Simpson's Proof, pages 4 – 5, para 3.7 and Apx B.

<sup>&</sup>lt;sup>119</sup> Gareth Simpson, Proof, page 5, para 3.8.

<sup>&</sup>lt;sup>120</sup> Gareth Simpson, Proof, page 6, para 3.11 – 12.

<sup>&</sup>lt;sup>121</sup> Richard Harding, EiC (Day 1).

<sup>&</sup>lt;sup>122</sup> Gareth Simpson, Proof, page 6, para 3.12.

- reducing flood damages to at least 1,000 homes and businesses currently at risk in Oxford;
- reducing flood impact on transport infrastructure and utilities in Oxford, particularly to Botley and Abingdon Roads, the railway line and the sewerage system;
- safeguarding Oxford's reputation as a thriving business centre of commerce that is open for business; and
- creating and maintaining new recreational amenities, wildlife habitat and naturalised watercourses accessible from the centre of Oxford.
- 107. The scheme has also been designed to meet a set of critical success factors.<sup>125</sup> The delivery of benefits has been subject to a robust and detailed management process, to ensure that benefits can be realised, measured and tracked.<sup>126</sup> The Benefits Map presented in Emma Formoy's evidence shows how the benefits are connected to the strategic investment objectives.<sup>127</sup> The benefits of the scheme are directly linked to United Nations Sustainable Development Goals.<sup>128</sup>
- 108. The economic benefits of the scheme have been calculated in accordance with the FCERM-AG,<sup>129</sup> which focusses on the economic value of damages to UK plc, rather than local value.<sup>130</sup> In summary, the scheme will result in £1,574 million in flood damages avoided.<sup>131</sup> This includes actual damages avoided to homes, businesses, and infrastructure as well as impacts such as reduced emergency response costs, and the indirect cost on services such as hospitals and schools.<sup>132</sup>
- 109. The greatest source of economic benefits is the reduced flood damage to homes, which is valued at £1,006.7 million compared to the 'do nothing' scenario and £116.2 million when compared to the 'do minimum' scenario'.<sup>133</sup> The economic benefits also include £244.35 million in reduced flood damage to commercial properties,<sup>134</sup> and a sum to represent health benefits from the positive impact on wellbeing through a reduction in the stress and anxiety associated with living or working in an area at risk of flooding (£170.1 million).<sup>135</sup> There are further quantified damages in respect of reduced demand for temporary accommodation; damages avoided to vehicles; and savings in respect of emergency services. Further benefits, such as a sum representing the direct economic impact of flooding on businesses <sup>136</sup>, and ecosystems services benefits,<sup>137</sup>

- <sup>126</sup> Emma Formoy, Proof, page 8, para 7.2.
- <sup>127</sup> Emma Formoy, Proof, page 9, para 7.6.
- <sup>128</sup> Emma Formoy, Proof, page 10, Table 2.
- <sup>129</sup> CD5.6.
- <sup>130</sup> Emma Formoy, Proof, page 11, para 8.3.
- <sup>131</sup> Emma Formoy, Proof, page 18, para 9.34.
- <sup>132</sup> Emma Formoy, Proof, page 11, para 8.3.
- <sup>133</sup> Emma Formoy, Proof, page 13, para 9.4.
- <sup>134</sup> Emma Formoy, Proof, page 13, para 9.7.
- <sup>135</sup> Emma Formoy, Proof, page 13, para 9.8.
- <sup>136</sup> Emma Formoy, Proof, page 13, para 9.10.
- <sup>137</sup> Emma Formoy, Proof, pages 13 14, paras 9.5, 9.6, 9.9 and 9.11.

<sup>&</sup>lt;sup>125</sup> Emma Formoy, Proof, Apx 5.

have been quantified but not included in the FCERM-AG analysis of economic benefits (which is concerned with national economic benefits).<sup>138</sup>

- 110. Beyond the quantified economic benefits of the scheme, there are significant social benefits. This includes the ability for home-owners and occupiers to get insurance and sell their property; <sup>139</sup> the reduction in disruption to travel around the city and by rail into and out of Oxford;<sup>140</sup> reducing school closures;<sup>141</sup> and avoiding disruption to essential services, both in the immediate area and in the wider locality.<sup>142</sup> Furthermore, 88 properties would no longer be at risk from sewer flooding as a result of the scheme.<sup>143</sup> Flooding has an adverse impact to the reputation of the city. The scheme will make clear that Oxford is open for business and attractive for investment and tourism.<sup>144</sup> The scheme will also deliver a new cycling and footpath link along the 2.25km maintenance track;<sup>145</sup> it will improve the accessibility of existing recreational routes within the scheme area;<sup>146</sup> as well as providing increased opportunities for education and research both during construction and on completion.<sup>147</sup> An integral part of the scheme has been delivering environmental benefits which arise from tree planting, habitat restoration and improvement work and enhancement of existing channels within the scheme area.<sup>148</sup>
- 111. Whilst the economic appraisal demonstrates that the scheme has a strong BCR of <u>10.6:1</u>,<sup>149</sup> it is readily apparent that the benefits of the scheme extend far beyond those that can be quantified in economic terms. Non-delivery of the scheme, in its entirety, would be detrimental for those that live, work and visit Oxford, placing it at risk of severe consequences from increasingly frequent flood events.
- 112. The Agency has also identified 'disbenefits' of the scheme, in order that they can be managed and mitigated. These include traffic disruption caused by construction and an increase in carbon emissions; damage to existing habitats; changes in landscape adversely affecting agriculture and recreation; and disturbance of in-situ archaeology and PRoW during construction.<sup>150</sup>
- 113. These disbenefits are not quantified in economic terms within the cost benefit analysis.<sup>151</sup> Instead, the Agency manages the disbenefits as risks<sup>152</sup> and takes them

- <sup>142</sup> Emma Formoy, Proof, page 15, para 9.18.
- <sup>143</sup> Emma Formoy, Proof, page 16, para 9.19.
- <sup>144</sup> Emma Formoy, Proof, page 15, para 9.17.
- <sup>145</sup> Emma Formoy, Proof, page 16, para 9.22.
- <sup>146</sup> Emma Formoy, Proof, page 16, para 9.23.
- <sup>147</sup> Emma Formoy, Proof, page 16, para 9.24.
- <sup>148</sup> Emma Formoy, Proof, pages 17 18, paras 9.26 9.31.
- <sup>149</sup> Richard Harding, Proof, page 91, para 16.2.
- <sup>150</sup> Emma Formoy, Proof, Apx 8.

<sup>152</sup> Emma Formoy, EiC (Day 1), response to clarification question.

<sup>&</sup>lt;sup>138</sup> It should be noted here that FHT/OFEG's suggestion in closing that these matters should be included in the assessment of its proposed alternatives would result in "comparing apples with pears".

<sup>&</sup>lt;sup>139</sup> Emma Formoy, Proof, page 14, para 9.13.

<sup>&</sup>lt;sup>140</sup> Emma Formoy, Proof, page 15, paras 9.15 – 9.16.

<sup>&</sup>lt;sup>141</sup> Emma Formoy, Proof, page 16, para 9.20.

<sup>&</sup>lt;sup>151</sup> Emma Formoy, EiC (Day 1), response to clarification question.

into account using other techniques such as the multi-criteria analysis which all shortlisted options were subject to.<sup>153</sup>

- 114. Dr Therivel and Mr O'Hara have sought to demonstrate that certain economic costs of the scheme, in particular, the costs associated with traffic delays on the A34 during construction, have been inappropriately omitted from the economic analysis.<sup>154</sup> As explained by Ms Formoy, any traffic disruption arising during the construction period is managed as a risk of the scheme rather than featuring within the economic appraisal. If one were to include such 'costs', it would also be necessary to include the significant transport and local highway network benefits arising from flood resilience provided by the scheme.<sup>155</sup> These benefits would be far greater than the short-term delays identified by Dr Therivel,<sup>156</sup> which the Transport Assessment concludes are 'not significant'.<sup>157</sup> In accordance with the FCERM-AG, however, the economic assessment of the scheme does not incorporate such local benefits.
- 115. In conclusion, the scheme will deliver a comprehensive set of economic, social and environmental benefits. For every £1 invested, the scheme will deliver roughly £10 worth of benefit.<sup>158</sup> Not only does it provide value for money, but it will result in real change to the quality of life for those living in fear of flooding and deliver an enduring and sustainable solution to a very real flood risk problem. The approach adopted by the Agency ensures that clear processes are in place for the delivery of the benefits identified and accountability for the management of disbenefits.

#### **Commitment from scheme partners**

- 116. The scheme is supported by the Oxford Flood Alleviation Scheme Sponsoring Group, which was set up by Oxfordshire County Council (OxCoCo), Oxford City Council (OxCiCo), VoWHDC, Oxfordshire Local Enterprise Partnership, Thames Water, the University of Oxford, the Oxford Flood Alliance, the Thames Regional Flood and Coastal Committee and the Agency in April 2014 and was subsequently joined by National Highways in April 2019. The Sponsoring Group was set up in response to the flooding in the winter of 2013/2014.
- 117. The scheme partners were responsible for the formulation of the strategic investment objectives, which were originally defined as part of the Strategic Outline Case that was approved by Treasury in 2015.<sup>159</sup> The commitment of the scheme partners to the delivery of the benefits of the scheme is demonstrated by the robust benefits realisation process outlined above. As explained below, many of the scheme partners have made financial contributions to the funding of the scheme.

<sup>&</sup>lt;sup>153</sup> Emma Formoy, Proof, page 12, para 8.8.

<sup>&</sup>lt;sup>154</sup> Therivel and O'Hara, Proof, page 28, section 3.5.

<sup>&</sup>lt;sup>155</sup> Agreed: Ms Therivel, XX (Day 9).

<sup>&</sup>lt;sup>156</sup> Once properly calculated. As explained by Mr Lear in his Rebuttal, pages 7 - 8, paras 7.1 - 7.2, Ms Therivel's calculations represent an overestimate of the economic cost of the delays that would be caused during construction.

<sup>&</sup>lt;sup>157</sup> Transport Assessment, page 60, section 8 (CD3.25)

<sup>&</sup>lt;sup>158</sup> Emma Formoy, Proof, page 30, para 15.4.

<sup>&</sup>lt;sup>159</sup> Emma Formoy, Proof, page 6, para 6.1.

#### There is a clear justification for the land take

- 118. The land take sought through the Order has been the subject of careful consideration by the Agency and is well justified. Michael Thorne's evidence demonstrates what each parcel of land to be acquired is to be used for within the scheme.<sup>160</sup>
- 119. The general approach to land take is to acquire the freehold interest in land where it is necessary to make a physical change to the land, such that there will be a substantial degree of interference with the use of the land, or where the Agency needs a substantial degree of control after completion of the scheme.<sup>161</sup> Whilst the scheme has a 100 year design life, it is intended that the scheme will remain in place beyond this timeframe.<sup>162</sup> Freehold acquisition is therefore required for land within the first and second stage channels; the new flood bunds and walls; the new hard surfaced access tracks for maintenance; the exchange land to replace public open space and the land required for environmental mitigation.<sup>163</sup>
- 120. Where there will be a lesser degree of interference with the owner's existing use of the land, the land is included in the Order for the acquisition of rights only. This approach has been adopted wherever possible in order to minimise land take.<sup>164</sup> This approach is consistent with that adopted on other schemes promoted by the Agency.<sup>165</sup> The rights required are for the purposes of access, temporary working areas required to construct the scheme, and for carrying out minor works to existing structures.<sup>166</sup> Some of the rights are permanent rights which in practice will only be used temporarily, because they are framed as relating to only temporary activities. The Order will also acquire new rights for the benefit of affected third parties, in order to mitigate the impact of the scheme on their existing rights.<sup>167</sup>
- 121. Only the land and rights required to construct and operate the scheme have been included in the Order.

#### There are no alternatives to the scheme

#### Approach to consideration of alternatives

122. Paragraph 106 of Tier 2 of the CPO Guidance states that a factor for the decisionmaker to consider is whether the purpose for which the acquiring authority (AA) is proposing to acquire the land could be achieved by any other means, which may include considering the appropriateness of any alternative proposals put forward by landowners for its reuse and/or examining the suitability of alternative locations for the purpose for which the land is being acquired.

<sup>&</sup>lt;sup>160</sup> Michael Thorne, Proof, Apx 3.

<sup>&</sup>lt;sup>161</sup> Michael Thorne, Proof, page 28, para 7.7

<sup>&</sup>lt;sup>162</sup> Michael Thorne, Proof, page 27, para 7.4.

<sup>&</sup>lt;sup>163</sup> Michael Thorne, Proof, page 28, para 7.8.

<sup>&</sup>lt;sup>164</sup> Michael Thorne, Proof, page 30, para 7.11.

<sup>&</sup>lt;sup>165</sup> Michael Thorne, Proof, page 30, para 7.11.

<sup>&</sup>lt;sup>166</sup> Michael Thorne, Proof, page 30, para 7.12.

<sup>&</sup>lt;sup>167</sup> Michael Thorne, Proof, pages 30 - 31, para 7.14; Apx 8.

- 123. In a CPO context, the question of alternatives needs to be seen in its proper light. The question of whether the CPO should be confirmed does not turn on a planning judgement about a particular scheme: that is the for the planning system. In this context, an alternative is one which might achieve the relevant objectives without compulsorily acquiring the land and rights which are the subject of the CPO. If in truth an "alternative" requires the same or similar extent of land and rights to be acquired, it is not an alternative to the CPO at all.
- 124. It is for those reasons that the AA said in opening and repeat that in the case of any claimed alternative solution, the questions for this Inquiry are not whether in some way or other that alternative might be address a particular concern of an objector, or provide an incidental benefit. The real questions are:
  - Whether that alternative will meet the objectives of the scheme underpinning the CPO, including addressing current and future flood risk so far as is possible;
  - Whether that alternative could properly be supported through the application of the relevant guidance, such that it could attract public funding;
  - Whether the alternative will avoid the need to acquire some or all of the land and rights included within the CPO.
- 125. Unless each of those questions can be answered "yes", the alternative does not get off the ground, let alone take preference to the scheme underpinning the CPO such that the Inspector and Secretary of State can be satisfied that the CPO is not justified.
- 126. The purpose of the Order is to facilitate the delivery of the scheme, which will deliver flood risk benefits to properties and infrastructure. A number of alternative proposals for addressing flood risk in Oxford have been promoted by objectors to the scheme, which the Agency has considered. None of them does better than the scheme against the core objective of flood alleviation. The Agency has produced a document summarising its response to each alternative and indicating where in its evidence the alternatives are addressed.<sup>168</sup> This document has been updated during the course of the Inquiry in response to the evidence produced by objectors.<sup>169</sup>
- 127. As a matter of general approach, the FCERM-AG requires that a <u>proportionate</u> approach is taken to the consideration of alternatives.<sup>170</sup> As explained by Mr Harding, there is no requirement to optimise options that are "*non-starters*".<sup>171</sup> Indeed, the Guidance specifically directs that 'non-starters' are removed as part of the process of producing a short-list of viable options.<sup>172</sup> By necessity, 'viable' in this context means options that can be promoted by the Agency, gain the necessary consents, and be funded by Treasury. It is common ground that the FCERM-AG represents the correct basis for scheme selection.<sup>173</sup>

<sup>&</sup>lt;sup>168</sup> INQ/13, this has subsequently been updated at INQ/13a and INQ/13b.

<sup>&</sup>lt;sup>169</sup> INQ/13a and INQ/13b.

<sup>&</sup>lt;sup>170</sup> **CD5.7**. Richard Harding, Proof, page 19, para 3.4(d).

<sup>&</sup>lt;sup>171</sup> Richard Harding, EiC (Day 1). See **CD5.6**, page 110, section 8.9.1: which specifically directs the removal of "*non-starters*".

<sup>&</sup>lt;sup>172</sup> **CD5.6**, page 110, section 8.9.1.

<sup>&</sup>lt;sup>173</sup> Rhys Coombs, XX (Day 4). Clive Carpenter, XX (Day 7).

- 128. These principles have informed the Agency's approach to the consideration of alternative solutions proposed by objectors, particularly as most of those proposed have already been appraised and rejected at an early stage by the Agency in accordance with the Guidance.<sup>174</sup>
- 129. For the reasons summarised below, the alternatives proposed are not technically, economically or environmentally feasible to the scheme, and therefore could not be promoted by the Agency. In large part they are not even alternatives which avoid the need for the CPO. This section considers the main alternatives promoted by objectors: the pumped twin pipe alternative and the various permutations of the 'no channel' alternatives.

#### Pumped twin pipe alternative

- *130.* A pumped 'twin pipe' alternative has been promoted by the Hinksey and Osney Environment Group ('HOEG'), the 'OFEG and the FHT. As explained by Mr Harding, the twin pipe solution is a form of culverting.<sup>175</sup> The Agency's own policy makes clear that it "*is opposed to culverting of any watercourse because of the adverse ecological, flood risk, geomorphological, human safety and aesthetic impacts.*"<sup>176</sup>
- 131. A form of culverting was considered and rejected by the Agency in 2010, on the basis that it would be too costly, too high risk and contrary to Agency policy.<sup>177</sup> The proposed twin pipe alternative has been subject to a further detailed review by VBA, who is a major contractor,<sup>178</sup> on behalf of the Agency.<sup>179</sup> That review considered how the proposal could be constructed and the likely costs associated with it.
- 132. Whilst it is technically possible to pump water, there are a number of key reasons why this option would not be pursued. In particular:
  - The review by VBA indicates that it would cost up to £106 million to deliver the pump house and pipes alone.<sup>180</sup> This is significantly more than the £22 million canvassed by Mr Madden;<sup>181</sup>
  - In order to carry out the work within a safe working footprint, that footprint would be 40m wide.<sup>182</sup> This allows for a 10 12m excavation platform alongside the

<sup>180</sup> CD2.12, page 9.

<sup>&</sup>lt;sup>174</sup> Richard Harding, Proof, para 3.4(d).

<sup>&</sup>lt;sup>175</sup> Mr Harding, EiC (Day 1).

<sup>&</sup>lt;sup>176</sup> Mr Harding, Proof, Apx 25 and 26, in particular, page 1121.

<sup>&</sup>lt;sup>177</sup> Mr Harding, EiC (Day 1).

<sup>&</sup>lt;sup>178</sup> As accepted by Mr Madden, XX (Day 9).

<sup>&</sup>lt;sup>179</sup> CD2.12.

<sup>&</sup>lt;sup>181</sup> Madden and Larkin, Proof, page 4, para 35.

<sup>&</sup>lt;sup>182</sup> CD2.12, page 5.

excavation area.<sup>183</sup> This would require considerably more land than the 8m suggested by Mr Madden;<sup>184</sup>

- The excavation required to deliver the pumped solution would be only slightly narrower than that required to deliver the two stage channel. The amount of excavation required would therefore be similar to that required for the scheme;
- The pumped solution would require the excavation of a trench and installation of pipes through Hinksey Meadow, resulting in both direct and indirect impacts. As explained by Mr Raynor, installing pipes would disrupt the groundwater regime on which the floodplain meadow habitat in Hinksey Meadow relies.<sup>185</sup> This could either hold back groundwater or create a preferential flow pathway that drains water away from the area affected.<sup>186</sup> In short, there is very little way to guarantee the same hydrological regime after excavation, installation of the pipes and backfilling of the trench.<sup>187</sup> This solution would therefore have a potentially significant impact on the hydrogeology of Hinksey Meadow.<sup>188</sup>
- The proposal of using the spoil removed to create a small bund rather than removing it<sup>189</sup> is also problematic from a hydrological perspective. As explained by Mr Raynor, the effect of creating a bund is to reduce flood storage and alter how the floodplain operates. <sup>190</sup> This has not been reflected in any modelling that has been undertaken.<sup>191</sup>
- In respect of the impact on archaeology, the pipes would be required to pass under Old Abingdon Road, which is a nationally important scheduled monument. As a matter of national planning policy, scheduled monuments are assets of the highest significance and substantial harm to them should be wholly exceptional.<sup>192</sup> In circumstances where a viable alternative existed, there is no real prospect that planning permission would be granted for a scheme that would result in substantial harm. Unlike the OFAS, a piped solution would have little ability to avoid the most important part of the monument in order to minimise the harm caused.
- With regards to maintenance, a pumped solution would rely heavily on mechanical engineering.<sup>193</sup> It would require specialist maintenance on an ongoing basis.
- Finally, there is a distinct lack of important information about how the proposal would operate in practice, as the proponents appear to accept. In particular, it is not clear how water flow would be managed at the downstream end of the pipe. In order to reintroduce the water back into the river at speed, there would be a need for significant civil engineering to manage debris, excavate the floodplain

- <sup>191</sup> Mr Raynor, EiC (Day 1).
- <sup>192</sup> The Framework, paragraph 206.
- <sup>193</sup> As accepted by Mr Madden, XX (Day 9).

<sup>&</sup>lt;sup>183</sup> CD2.12, page 5.

<sup>&</sup>lt;sup>184</sup> Madden and Larkin, Proof, page 2, para 13.

<sup>&</sup>lt;sup>185</sup> Mr Raynor, EiC (Day 1).

<sup>&</sup>lt;sup>186</sup> Mr Raynor, EiC (Day 1).

<sup>&</sup>lt;sup>187</sup> Mr Raynor, EiC (Day 1).

<sup>&</sup>lt;sup>188</sup> Mr Raynor, EiC (Day 1).

<sup>&</sup>lt;sup>189</sup> Madden and Larkin, Proof, page 2, para 14.

<sup>&</sup>lt;sup>190</sup> Mr Raynor, EiC (Day 1).

and ensure that the discharge of water does not cause erosion. It is far from clear that consent would be obtained for such a proposal. As Mr Madden accepted, if the water were to be discharged into the Thames, it would be necessary for it to pass under the A34 and the railway by way of new culverts<sup>194</sup>. Not only would this require a major piece of infrastructure, but these costs have not been accounted for in HOEG's costs.

- 133. The modelling that was presented in oral evidence by Mr Larkin and Mr Madden is flawed. Not only did the model represent a proposal that is different to that being promoted,<sup>195</sup> but it has used a different flow rate that is approximately 25% lower than that presented in HOEG's written evidence.<sup>196</sup>
- 134. In conclusion, the twin piped solution is plagued with problems that make it unviable as an alternative to the scheme. It is a paradigm "non-starter" given the availability of the scheme. It is poorly developed and its true complexity is barely concealed behind HOEG's assertions. It does not, in any event, avoid the need for a CPO.

#### 'No channel' alternatives

#### Preliminary

- 135. It is important to note at the outset that 'no channel' alternatives were raised and considered by the Agency long before the promotion of such a solution by OPT and OFEG/FHT.
- 136. The possibility of a no channel option was raised by Dr Tim King during the early development of the scheme,<sup>197</sup> with a request that the Agency assess the impacts of not constructing the channel between Botley Road and Willow Walk and not building the channel in full.<sup>198</sup> For the reasons summarised later in this section, the Agency could not promote a no channel option. Nonetheless, the Agency sought to engage with the request. As such, the no channel options were run through the same economic model used in the FCERM-AG. This analysis led to the production of the first iteration of what is now Appendix Q to the Environmental Statement (ES) in June 2017.<sup>199</sup> That note has subsequently been updated on a number of occasions during the detailed design development, to reflect updates to the model and changes to relevant policy.<sup>200</sup> However, the settled view of the Agency is and has been that these alternatives are objectionable and could not be included in the scheme appraisal under the FCERM-AG.
- 137. There are two primary 'no channel' alternatives which have been put forward by objectors, as follows:

<sup>&</sup>lt;sup>194</sup> Described by the proponents as new viaducts

<sup>&</sup>lt;sup>195</sup> Mr Madden accepted that the pump house has been modelled on the west side of the Seacourt, not on the east side as proposed and a different outflow location, XX (Day 9).

<sup>&</sup>lt;sup>196</sup> The modelled rate is 33 cumec, instead of 44 cumec which was claimed to be the maximum flow rate at page 1, para 4 of Mr Larkin and Mr Madden's Proof.

<sup>&</sup>lt;sup>197</sup> Page 2, para 2.1 (**INQ/29**).

<sup>&</sup>lt;sup>198</sup> Page 2, para 2.2 (**INQ/29**).

<sup>&</sup>lt;sup>199</sup> CD3.8q. The updated version is at CD3.29.

<sup>&</sup>lt;sup>200</sup> Page 1, section 1 (**CD3.29**).
- 'Alternative A1', which removes the second stage channel in Hinksey Meadow, between the National Grid electricity pylon, 200m downstream of Botley Road, and Willow Walk. This alternative has been pursued principally by OPT;<sup>201</sup> and
- 'Alternative A2', which removes a longer section of channel. This alternative has been proposed principally by OFEG/FHT.
- 138. As explained further below, these alternatives are now primarily advanced by objectors in amended forms known as 'Alternative A1R' and 'Alternative A2R', which seek to address the shortcomings of these initial alternatives through optimisation of flood defences by the raising of flood defence levels and the creation of new sections of flood defence. Alternative A3 is a variant on Alternative A2R. Whilst Mr Durham has sought to keep that or something similar to it alive, the bottom line is that FHT/OFEG's flood modelling showed these changes to add nothing to flood alleviation<sup>202</sup>. They are in truth points of detailed scheme design, which do not deliver material benefits against the scheme objectives and which do not avoid the need for a CPO. Accordingly, they are not addressed further here.<sup>203</sup>

### General principles: why the 'no channel' options are non-starters

- 139. In general terms, as explained by Mr Harding, there are seven key reasons that the 'no channel' options are not technically feasible alternatives to the scheme and nor are they options that the Agency could or would promote.
- 140. First, removing part of the channel significantly impacts the ability to be certain about the operation of the scheme.<sup>204</sup> It is necessary that the Agency knows from day one that the scheme will work and that it will work as expected for the full period of the 100 year design life.<sup>205</sup> The channel relies on basic hydrological principles, capitalising on the fact that water will flow downhill along the channel as a function of gravity. This is a standard and well used flood defence option, providing a pre-defined flow path for the water and therefore sufficient certainty as to where flood water will move over the whole life of the scheme. This delivers resilience against change, unforeseen events and ensures robustness.
- 141. If the scheme were to be built without part or all of the channel, in the event of a 1 in 100 year flood, an additional 39 cubic metres of water per second would be put into the western floodplain. The absence of a channel and the relatively flat topography means that there is simply no control on where that water might go. As Mr Harding explained, removing the channel means that the scheme is no longer a 'flood management scheme', as there can be no 'management' of the flood water without the channel.<sup>206</sup> Such a scheme would effectively rely on luck that the flood water would move through the floodplain in the required manner.<sup>207</sup>

<sup>202</sup> OX027S 4c, page 9

<sup>&</sup>lt;sup>201</sup> The further evolution of this option proposed by OPT for the first time in its oral evidence is addressed below.

<sup>&</sup>lt;sup>203</sup> See the summary response at INQ/13b, page 6-7.

<sup>&</sup>lt;sup>204</sup> Richard Harding, Proof, page 69, para 15.4(c)(i). (EA/1a)

<sup>&</sup>lt;sup>205</sup> Richard Harding, XX (Day 6).

<sup>&</sup>lt;sup>206</sup> Richard Harding, EiC (Day 1).

<sup>&</sup>lt;sup>207</sup> Richard Harding, EiC (Day 1).

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- 142. Second, whilst no option will ever deliver 100% certainty, the minimal operational intervention required for the scheme means that it delivers as much reliability as possible.<sup>208</sup> If the channel, or parts of it, were to be removed from the scheme, the risk of failure increases.<sup>209</sup> So does the risk of reliance on exceedance plans, which has resource implications for the Agency and local flood management and emergency response services.
- 143. Third, as explained by Mr Harding, the scheme is the best option now to reduce flood risk. <sup>210</sup> If a compartmentalised solution was to be delivered instead, it is likely that any omitted parts of the scheme would never be delivered, as they would not be independently viable.<sup>211</sup> In short, if the no channel option did not work, the chance to construct the channel in its entirety would have been missed.<sup>212</sup> In any event, such an approach of "suck it and see" is plainly unsatisfactory in the face of the current viable scheme.
- 144. Fourth, the 'no channel' alternatives have inherent limitations, which has implications for the liability of the Agency.<sup>213</sup> The duty under the FCERM is to deliver the optimal scheme, which performs as reliably as possible. It needs to be recalled that in either of these claimed alternatives, flood alleviation would be provided by diverting large quantities of water into the western floodplain. Any option which relied on chance in respect of how flood water finds its way through the floodplain would fail to meet this duty.<sup>214</sup> Indeed, in practical terms, adding 39 cubic metres of water a second to the floodplain would increase flooding at various locations, meaning that the Agency would need to control the entire floodplain.
- 145. Fifth, and consequently, far from being an alternative that would reduce the need for compulsory acquisition of land, the need for the Agency to control the entire floodplain would significantly increase the land that would need to be included in the Order.<sup>215</sup> Thus these suggestions are not alternatives to the CPO at all.
- 146. Sixth, the effect of a 'no channel' option would have other undesirable impacts. The scheme ensures that land outside the channel retains its existing features as far as possible. The impacts of a 'no channel' option on the wider flood plain would mean that the whole area would have to be managed differently, including different agricultural practices and through landscaping changes and tree and hedge removal. Moreover, the channel construction activity is not on the critical path for the construction work and thus, the no channel option would not reduce the construction programme. The Agency would still need access at South Hinksey from the A34, along with a compound in this area in order to construct the built elements of the scheme.
- 147. Finally, and importantly, the analysis carried out by the Agency<sup>216</sup> demonstrates that the no channel options do not score as well as the OFAS in terms of iBCR when

<sup>&</sup>lt;sup>208</sup> Richard Harding, Proof, page 70, para 15.4(c)(ii).

<sup>&</sup>lt;sup>209</sup> Richard Harding, Proof, page 70, para 15.4(c)(ii).

<sup>&</sup>lt;sup>210</sup> Richard Harding, Proof, page 70, para 15.4(c)(iii).

<sup>&</sup>lt;sup>211</sup> Richard Harding, Proof, page 70, para 15.4(c)(iii).

<sup>&</sup>lt;sup>212</sup> Richard Harding, Proof, page 70, para 15.4(c)(iii).

<sup>&</sup>lt;sup>213</sup> Richard Harding, Proof, page 71, para 15.4(c)(iv).

<sup>&</sup>lt;sup>214</sup> Richard Harding, Proof, page 71, para 15.4(c)(iv).

<sup>&</sup>lt;sup>215</sup> Richard Harding, Proof, page 71, para 15.4(c)(v).

<sup>&</sup>lt;sup>216</sup> See Apx Q **CD3.29**.

assessed in accordance with the FCERM-AG.<sup>217</sup> This is the agreed basis on which the Agency must select its scheme if it is to gain funding from the Treasury to deliver it. This reflects the fact that if the conveyance channel was removed, the flood protection afforded by the scheme would be materially reduced more than the proportional reduction in costs. In particular, for all predicted flood events, the flood levels in the Seacourt Stream below Botley Road are materially higher than those with the proposed scheme. Thus even if the 'no channel' proposals were "starters" such that they could form part of the scheme appraisal, they would still not be selected.

148. Accordingly, the Agency does not consider that 'no channel' solutions are technical or feasible alternatives that it could or would promote. Consequently, they are not and cannot be made alternatives to the scheme underpinning the CPO, nor to the CPO itself. Whilst the Agency could rest its case there, for completeness it addresses the cases made on 'no channel' solutions in more detail below.

# <u>Alternative A1 and 'Alternative A1R' (Alternative A1 + raised defences + additional defences)</u>

- 149. Turning to Alternative A1 specifically, there is an increase in conveyance under Botley Road that increases flow into the western floodplain, through the other parts of the scheme upstream and downstream of Botley Road that would be retained under Alternative A1.<sup>218</sup> The effect of removing the channel through Hinksey Meadow in combination with this increased flow has the effect of increasing flood levels within the western floodplain upstream of Willow Walk (as compared to the OFAS ) and in more extreme events this propagates upstream of Botley Road. The effect of this is that Alternative A1 results in increased flooding upstream in smaller events, and increased flooding on Botley Road and to the south of Botley Road.<sup>219</sup>
- 150. For the first time in Mr Coombs' oral evidence, OPT promoted a further evolution of Alternative A1 ('Alternative A1R'), which sought to address the increased flooding demonstrated by the modelling. It will be recalled that Mr Coombs barely touched on the 'no channel' proposition in his written evidence. Following a comprehensive rebuttal<sup>220</sup> of his original and now abandoned alternative (works to the Bulstake Stream), Mr Coombs sought further information from the Agency which he then used to assemble a presentation on Alternative A1R. The regrettable way in which this was advanced to the Inquiry has not, ultimately, prevented the Agency from demonstrating its failings but the fact that it has emerged incrementally and as an afterthought for OPT's case goes to the weight that can be given to that evidence.
- 151. Alternative A1R includes (i) increasing the height of defences that form part of the scheme north of Botley Road and (ii) additional defences at Castle Mill Stream and Henry Road/Helen Road on the Osney Stream.<sup>221</sup> Whilst OPT argues that it was for the Agency to develop the A1 alternative, that was not the purpose of Appendix Q. The purpose was to test how the removal of some extent of new channel would play out in

<sup>&</sup>lt;sup>217</sup> **INQ/13,** page 2, para 3.7(a).

<sup>&</sup>lt;sup>218</sup> Page 2, para 2.7 (**INQ/29**)

<sup>&</sup>lt;sup>219</sup> Pages 6 – 9, Tables 1 to 4 and pages 10 - 13, Figures 3 to 6 (**CD3.29**).

<sup>&</sup>lt;sup>220</sup> Richard Harding Rebuttal, Section 3 (EA/1d)

<sup>&</sup>lt;sup>221</sup> INQ/21.

terms of the economic assessment. The clear reasons for rejecting A1 remain the same now as they did at the time that Appendix Q was first prepared.

- 152. The Agency has responded in detail to Mr Coombs' oral evidence in a written note, which is at **INQ/29.** In summary:<sup>222</sup>
  - The scheme has not been designed to a particular level of protection, and the FCERM-AG tests various return periods. In some places, localised constraints mean that defences would be overtopped in the 1% AEP event<sup>223</sup>. It follows that it was not the task of any assessment in Appendix Q to "match" the level of protection against a particular flood event;
  - The Agency agrees that there could be additional benefit associated with raising some of the defences identified (in Area 1A), but raising defences is not feasible or economically justifiable in the other areas suggested by Mr Coombs (in Areas 1B, 1C or the Castle Mill stream area);
  - The number of additional properties that would be protected by Alternative A1R, compared to Alternative A1, would be no greater than eleven and may well be less than this;
  - When compared to the OFAS, Alternative A1R still results in a greater level of damage arising to properties upstream of Botley Road. As such, the flood alleviation benefits are materially worse than those delivered by the scheme.
- 153. The Agency has responded to further submissions from Mr Coombs in a further written note, which is at **INQ/29a.** In summary:
  - a. The Agency considers that Mr Coombs' assessment of BCR is incorrect;
  - Alternative A1R continues to result in upstream disbenefits when compared to the OFAS, with consequential impacts on damages experienced to upstream properties;
  - c. The fundamental objections to A1R remain.
- 154. Thus Mr Coombs' late work might improve the economic performance of Alternative A1, but not to the extent he claims. His uncosted attempt at optimisation still delivers a scheme which is economically inferior to the OFAS and which would fall to be rejected under the FCERM-AG even if it was a "starter".
- 155. In any event, none of Mr Coombs' analysis overcomes the fundamental concerns about this option: see above. With regards to Mr Coombs' suggestion that Alternative A1 should have been optimised in this way by the Agency, he is wrong because for those same reasons, Alternative A1 is a non-starter, and thus the FCERM-AG does not require it to be explored further.

<sup>&</sup>lt;sup>222</sup> INQ/13a.

<sup>&</sup>lt;sup>223</sup> OPT's Closing seems to go back to this point in detail, despite the fact that it was put beyond doubt in the evidence.

156. For these reasons, Alternative A1R is simply not an acceptable long term flood risk management solution or a suitable alternative to the scheme.

#### Alternative A2 and Alternative A2R (Alternative A2 + raised defences)

- 157. Alternative A2R was proposed by Mr Carpenter on behalf of OFEG/FHT for the first time in his written evidence, filed shortly before the Inquiry started.<sup>224</sup> This further alternative claims support from hydraulic modelling undertaken by Edenvale Young.<sup>225</sup> This alternative is addressed in detail in the second Rebuttal Proof of Mr Raynor.<sup>226</sup>
- 158. As explained by Mr Raynor, the modelling that supports Mr Carpenter's alternative is not directly comparable to that carried out in respect of the scheme. This is because the modelling carried out on behalf of OFEG/FHT has used an estimated flow that is approximately equivalent to a 2% AEP flood event in the 2020s, as opposed to a 1% AEP event for this epoch.<sup>227</sup> Mr Carpenter's evidence accordingly does not make a direct comparison to the scheme.
- 159. Alternative A2R simulates the effect of raising the defences above the design levels of the scheme. The results, which are presented in Mr Carpenter's evidence,<sup>228</sup> unsurprisingly demonstrate minor increases in water level in several locations.<sup>229</sup> Mr Carpenter argues that raising the defences is sufficient to achieve the benefits of the scheme without the channel.<sup>230</sup>
- 160. As explained by Mr Raynor, raising the defences in the locations suggested by Mr Carpenter is problematic. Similar issues apply as with A1R. It is not possible to raise the defences in several locations due to key topographic and infrastructure restrictions.<sup>231</sup> In other locations, raising of defences would simply result in more water bypassing the ends of the defences.<sup>232</sup> In some locations, such as Osney Mead, raising defences would result in increasing flood risk elsewhere.<sup>233</sup> In the remaining locations proposed, defence heights can be raised only at the cost of reducing the freeboard height provided, which is not desirable.<sup>234</sup> As with Alternative A1R, the benefits of the A2R would be less than those secured by the scheme.
- 161. The reduction of freeboard that would result from Alternative A2R, when coupled with the effects of climate change, would result in a higher probability that the defences would be overtopped in future epochs.<sup>235</sup> To put it another way, the effect of Alternative A2R is to reduce the number of years for which the scheme would provide a benefit,

- <sup>234</sup> Phil Raynor, Second Rebuttal, page 11, para 5.7. (INQ/5E)
- <sup>235</sup> Phil Raynor, Second Rebuttal, page 11, para 5.9. (INQ/5E)

<sup>&</sup>lt;sup>224</sup> OX 027S 4a.

<sup>&</sup>lt;sup>225</sup> Clive Carpenter, Proof, Appendices (**OX 027S 4c**).

<sup>&</sup>lt;sup>226</sup> Clive Carpenter, Proof Page 9, para 5. (OX 027S 4a)

<sup>&</sup>lt;sup>227</sup> Updated Note by the EA on Alternatives Page 5, para 5.3 (**INQ/13a**)

<sup>&</sup>lt;sup>228</sup> Clive Carpenter, Proof Appendix 2, Table 1. (OX 027S 4c)

<sup>&</sup>lt;sup>229</sup> Phil Raynor, Second Rebuttal, page 9, para 5.2. (INQ/5E)

<sup>&</sup>lt;sup>230</sup> Clive Carpenter, Proof, page 8, para 41. (OX 027S 4a)

<sup>&</sup>lt;sup>231</sup> Phil Raynor, Second Rebuttal, page 10, para 5.6. (INQ/5E)

<sup>&</sup>lt;sup>232</sup> Phil Raynor, Second Rebuttal, page 10, para 5.6. (INQ/5E)

<sup>&</sup>lt;sup>233</sup> Phil Raynor, Second Rebuttal, page 10, para 5.6. (INQ/5E)

when the effects of climate change are taken into account.<sup>236</sup> Indeed, even Mr Young, who carried out the modelling on behalf of OFEG concludes that *"from a hydraulic perspective the current OFAS design option provides more 'flood betterment' than the other options explored*".<sup>237</sup> That frank conclusion is one of general application to the consideration of alternatives. Every alternative before this Inquiry does less well than the scheme on the key project objective.

- 162. In closing but not in his evidence Mr O'Hara sought to introduce a further refinement to both A2 and A2R, removing a series of proposed bridges. Such a change has not been explained to the evidence or tested, but it is immediately apparent that removing these bridges would require their substitution with other means to cross the obstructions, otherwise the benefits of putting extra water into the western floodplain would start to slip away as its flow would be obstructed. At Willow Walk, Mr O'Hara suggests culverting but this too would come at a cost. There is no such easy fix. The plan produced in answer to his questions<sup>238</sup> makes clear the difference between the opening required to convey flood water (as modelled both in the scheme, and in the assessment of these no channel alternatives) and the size of the existing culverts. And of course, none of Mr O'Hara's late suggestions address the in principle objections to the no channel options.
- 163. For these above reasons, Alternative A2R remains hydraulically inferior to the proposed scheme in respect of flood alleviation, it has also been proven to be economically inferior.<sup>239</sup>.

### Conclusion on 'no channel' alternatives

164. For the reasons summarised here and explained in detail in the evidence of Mr Raynor and Mr Harding, the alternatives promoted by objectors are neither viable nor capable of being supported by the Agency. That is the fundamental reason for their rejection. However, even if the Agency were wrong in that conclusion, these alternatives have been economically assessed in accordance with the relevant FCERM-AG by the Agency over a period of many years. The recent attempts to develop these alternatives to meet their shortcomings underlines the fact that they simply do not perform as well as the scheme. Nor can raising defences or adding additional defences overcome the fundamental objections that the Agency has to promoting a no channel option. As agreed by both OPT and OFEG/FHT's hydrology experts, the appropriate means of selecting a scheme is through the application of the FCERM-AG. When that Guidance is considered, without prejudice to the Agency's position that these are non-starters, the scheme would still be selected over any of the no channel variants. Finally, the 'no channel' alternatives do not avoid the need for compulsory purchase. They are accordingly not genuine alternatives to the CPO. For all these reasons, and despite the vigorous challenge by OPT and FHT/OFEG and their respective experts, the simple conclusion is that the no channel proposals cannot be regarded as reasonable alternatives to the scheme or the CPO.

<sup>&</sup>lt;sup>236</sup> Phil Raynor, Second Rebuttal, page 11, para 5.9. (INQ/5E)

<sup>&</sup>lt;sup>237</sup> Clive Carpenter, Proof, Appendix 1, page 15. (OX 027S 4c)

 $<sup>^{\</sup>rm 238}$  Details relating to the Accommodation Bridge at Willow Walk INQ/42

<sup>&</sup>lt;sup>239</sup> Appendix Q. See also responses to Mr Coombs, INQ/29A: the same points in respect of economic benefits apply.

## The purpose for which the land is acquired fits with development plan policy

165. The scheme has been subject to ongoing engagement with local authority planners from OxCoCo, OxCiCo and VoWHDC since 2015.<sup>240</sup> The Agency submitted an application for planning permission for the scheme underlying the Order to OxCoCo in February 2022, which has not yet been determined. As explained by Veronica James, the scheme is in accordance with the development plan such that the Agency is confident that planning permission will be forthcoming. This section of the Agency's closing summarises the evidence in respect of each of the main issues that are material to the determination of the application for planning permission.

#### Landscape and visual impact

- 166. The landscape and visual impacts of the scheme have been integral to its development.<sup>241</sup> The scheme has been designed sensitively to minimise impact on high value landscape features and integrate into the surrounding landscape, in accordance with the statutory duties on the Agency.<sup>242</sup>
- 167. The scheme sits within a green floodplain corridor between the main conurbation of Oxford to the east and the villages of North Hinksey and South Hinksey to the west.<sup>243</sup> The majority of the scheme area is currently used for sheep and cattle grazing and silage production.<sup>244</sup> The scheme has been designed to allow the majority of the land to remain in agricultural use.<sup>245</sup> The landscape is predominantly flat and characterised by a braided pattern of riparian trees, shrubs and hedgerows following the existing streams and ditches, with several small pockets of native woodland.<sup>246</sup> There are glimpsed views of Oxford's internationally recognised skyline.<sup>247</sup>
- 168. The first stage channel has been designed to look and function as a natural stream.<sup>248</sup> Native trees and shrubs will be planted close to it in order to provide pockets of shaded habitat.<sup>249</sup> There will be no significant change to the character of existing channels as a result of the scheme.<sup>250</sup> The second stage channel will be slightly lower than existing ground levels, with a shallow gradient to achieve the level change.<sup>251</sup> The

<sup>&</sup>lt;sup>240</sup> Veronica James, Proof, para 6.1. (EA/11a)

<sup>&</sup>lt;sup>241</sup> Policy C8 of the OxCoCo Minerals and Waste Plan (**CD 4.2**), Policy DH2 of the OxCiCo Local Plan (**CD 4.4**), Core Policies 37, 44 and 45 of the VoWHDC Local Plan Part 1 (**CD 4.3a**). The Framework, para 180.

<sup>&</sup>lt;sup>242</sup> Penny Burt, Proof, page 5, para 5.2. This is one of the main themes of the environmental sub-objectives of the scheme. See page 5, Table 1.2 of the ES (**CD3.8**). The statutory duties on the Environment Agency are set out in Penny Burt's Proof, pages 7, para 5.12.

<sup>&</sup>lt;sup>243</sup> Penny Burt, Proof, page 6, para 5.6. (EA/8a)

<sup>&</sup>lt;sup>244</sup> Penny Burt, Proof, page 6, para 5.7. (EA/8a)

<sup>&</sup>lt;sup>245</sup> Penny Burt, Proof, page 15, para 6.2. (EA/8a)

<sup>&</sup>lt;sup>246</sup> Penny Burt, Proof, pages 6 - 7, paras 5.8 - 5.9. (EA/8a)

<sup>&</sup>lt;sup>247</sup> Penny Burt, Proof, pages 6 - 7, para 5.16. (EA/8a)

<sup>&</sup>lt;sup>248</sup> Penny Burt, Proof, page 8, para 5.7. (EA/8a)

<sup>&</sup>lt;sup>249</sup> Penny Burt, Proof, page 8, para 5.7. (EA/8a)

<sup>&</sup>lt;sup>250</sup> Penny Burt, Proof, page 9, para 5.17. (EA/8a)

<sup>&</sup>lt;sup>251</sup> Penny Burt, Proof, page 9, para 5.18. (EA/8a)

proposed ground levels will be largely imperceptible, particularly when vegetation has re-established.<sup>252</sup>

- 169. Wherever possible, existing features and habitat, including woodland, trees and hedgerows have been retained.<sup>253</sup> In order for the second stage channel to function, however, it must remain free of blocks of woodland or hedgerows which would increase the roughness of the channel, impede the flow of water or create a risk of blockages within the channel.<sup>254</sup> Woodland and trees will be planted to fit in with the existing landscape character of the area.<sup>255</sup> Where trees and woodland must be removed, this will be mitigated by replacement tree planting within the scheme area. In total, 19,100 trees will be planted including 4,100 large tree species and 3.58km of new hedgerow.<sup>256</sup> The Agency has prepared a Landscape and Habitat Creation: Delivery and Management Plan, which outlines the proposals.<sup>257</sup>
- 170. The Agency has carried out a full assessment of the landscape and visual impacts of the scheme as part of the ES.<sup>258</sup>
- 171. Outside the channel, areas of floodplain meadow, pasture, woodland, scrub and hedgerows will be created to deliver a variety of connected and diverse habitats and open spaces.<sup>259</sup> The assessment concludes that for the majority of the scheme, including those areas where there are currently fields and where the land is in agricultural use, there will be no adverse long- term impacts on the existing landscape character.<sup>260</sup> The landscape character will be the same after the construction of the scheme as it was before.<sup>261</sup> The only area where there will be some long-term impacts on landscape character is Kendall Copse, where it has not been possible to design a natural looking channel due to buried landfill and space restriction created by the proximity to the railway, major roads and large pylons.<sup>262</sup> Under low flows, this section of the scheme will remain dry.<sup>263</sup> The assessment of the visual impacts of the scheme demonstrate that the effects will be temporary (i.e. during construction).
- 172. The bridges that will be constructed as part of the scheme have been designed sensitively, in order to reflect the semi-rural setting.<sup>264</sup> The construction of bridges at Devil's Backbone and Willow Walk are not considered to be out of keeping with the existing landscape character.<sup>265</sup> The materials and railings used for these bridges have

<sup>&</sup>lt;sup>252</sup> Penny Burt, Proof, page 9, para 5.18. (EA/8a)

<sup>&</sup>lt;sup>253</sup> Penny Burt, Proof, page 10, para 5.25. (EA/8a)

<sup>&</sup>lt;sup>254</sup> Penny Burt, Proof, page 9, para 5.20. (EA/8a) (EA/8a)

<sup>&</sup>lt;sup>255</sup> Penny Burt, Proof, page 10, para 5.24; page 10, paras 5.28 – 5.41.

<sup>&</sup>lt;sup>256</sup> Penny Burt, Proof, page 12, paras 5.33 and 5.34. (EA/8a)

<sup>&</sup>lt;sup>257</sup> CD3.21.

<sup>&</sup>lt;sup>258</sup> Chapter 7 (**CD3.8**).

<sup>&</sup>lt;sup>259</sup> Penny Burt, Proof, page 10, para 5.21. (EA/8a)

<sup>&</sup>lt;sup>260</sup> Penny Burt, Proof, page 22, para 7.3. (EA/8a)

<sup>&</sup>lt;sup>261</sup> Penny Burt, Proof, page 22, para 7.3. (EA/8a)

<sup>&</sup>lt;sup>262</sup> Penny Burt, Proof, page 23, para 7.4. (EA/8a)

<sup>&</sup>lt;sup>263</sup> Penny Burt, Proof, page 23, para 7.4. (EA/8a)

<sup>&</sup>lt;sup>264</sup> Penny Burt, Proof, page 23, para 7.6; (EA/8a) ES, Chapter 7, pages 102 – 104 (**CD3.8**).

<sup>&</sup>lt;sup>265</sup> Penny Burt, Proof, page 23, para 7.7. (EA/8a) Visualisations are included in the ES at Appendix I-8 (**CD3.21**).

been discussed with the local authority in order to ensure that they are in-keeping with the historic setting.<sup>266</sup>

173. The position of OxCoCo's landscape specialist is that the scheme can be *"successfully embedded into the local landscape in the long-term, subject to appropriate long term... management",* such that the landscape and visual impacts are acceptable and in compliance with paragraph 180(b) of the Framework, policy G7 and G8 of the Oxford City Local Plan and policies 44 and 45 of the Vale of White Horse Local Plan.<sup>267</sup>

## Ecology and biodiversity

174. The delivery of new, high-quality floodplain habitat and tree planting has been integral to the design of the scheme.<sup>268</sup> As explained above, the scheme will deliver 16.65 hectares of species-rich floodplain meadow<sup>269</sup> and 11.34 hectares of tree planting.<sup>270</sup> The environmental design for the Scheme, incorporating enhancement objectives and appropriate mitigation and compensation where required, has been developed over a number of years. It has been shared and discussed regularly with an environmental stakeholder group, comprising most of the main UK conservation organisations,<sup>271</sup> inviting feedback and comment in order to further inform the evolution of the scheme.

## Impact on Hinksey Meadow

- 175. There is no dispute that the scheme will have an adverse impact on the lowland meadow habitat in Hinksey Meadow, which is a priority habitat under the Natural Environment and Rural Communities Act 2006.<sup>272</sup>
- 176. In the baseline position, Hinksey Meadow has 8.82 hectares of combined MG4a and MG4b grassland habitat, which is rare across the UK and therefore of national importance.<sup>273</sup> The Meadow also includes approximately 3 hectares of less floristically valuable MG15 grassland.<sup>274</sup> Hinksey Meadow is designated as a Local Wildlife Site, but has no national designation.<sup>275</sup> However, notwithstanding the fact that it is not listed as an 'irreplaceable' habitat in the Government's list of irreplaceable habitats in the context of biodiversity net gain<sup>276</sup>; in the Agency's approach to planning policy and in its application of the Defra biodiversity net gain (BNG) metric, lowland meadow has been

<sup>&</sup>lt;sup>266</sup> Penny Burt, Proof, page 24, para 7.10. (EA/8a)

<sup>&</sup>lt;sup>267</sup> Penny Burt, Proof, pages 28, para 7.32. (EA/8a)

<sup>&</sup>lt;sup>268</sup> The maintenance requirement secured through the Landscape and Habitat Creation Delivery and Management Plan (**CD 3.35**) meets the requirements of Policy M10 of the OxCoCo Minerals and Waste Plan (**CD 4.2**).

<sup>&</sup>lt;sup>269</sup> Richard Harding, Proof, para 10.4(j). (EA/1a)

<sup>&</sup>lt;sup>270</sup> Richard Harding, Proof, para 10.4(k). Penny Burt, Proof, para 5.43. (EA/1a)

<sup>&</sup>lt;sup>271</sup> Graham Scholey, Proof, para 5.8. (EA/9a)

<sup>&</sup>lt;sup>272</sup> Graham Scholey, Proof, para 10.7. (EA/9a)

<sup>&</sup>lt;sup>273</sup> Graham Scholey, Proof, para 10.6. (EA/9a)

<sup>&</sup>lt;sup>274</sup> Graham Scholey, proof, para 10.3. (EA/9a)

<sup>&</sup>lt;sup>275</sup> This is a matter of common ground with all objectors.

<sup>&</sup>lt;sup>276</sup> Biodiversity Net Gain (Irreplaceable Habitat) Regulations 2024.

treated as 'irreplaceable'.<sup>277</sup> This is a precautionary approach which reflects the considerable care taken in the assessment of the environmental effects of the scheme and the design of mitigation and compensatory measures.

- 177. In terms of <u>direct effects</u>, the scheme will impact 1.33 hectares of MG4 grassland through the earthworks required to construct the second stage channel within Hinksey Meadow. This effect has been avoided and reduced as far as possible through the alignment of the second stage channel within Hinksey Meadow, and through removing the access track from this area and constructing the scheme from within the footprint of the channel. The original preferred option for the alignment through the Meadow ran through the middle of the field. This was subsequently re-designed to run as close to the Seacourt Stream as possible in order to minimise the impact on MG4.<sup>278</sup>
- 178. In terms of <u>indirect impacts</u>, the scheme would result in the creation of a hydrogeological low point downstream of Hinksey Meadow, as a result of the diversion of the Bulstake Stream to join the Hinksey Stream.<sup>279</sup> Without mitigation, the effect of this would be to increase the drawdown water from the groundwater regime beneath Hinksey Meadow into the Seacourt Stream, in particular in times of low flow. This potential impact has been identified through the Agency's groundwater model, which has been produced to simulate the effect of the scheme on groundwater levels.
- 179. In terms of the extent of this impact, as explained by Mr Raynor, the ESI modelling has simulated a dry year using year-round Q95 flows.<sup>280</sup> The Q95 flows are derived from observations from flow gauges on the Thames, Evenlode, Cherwell and Ray over many years, which have been simulated in the hydraulic model to produce predicted water levels.<sup>281</sup> These water levels have been applied in the groundwater model as fixed river cells.<sup>282</sup> These levels therefore represent extreme low flow events such that the assessment of groundwater impacts are conservative. The groundwater model demonstrates that in the dry year simulation, the drawdown of groundwater from Hinksey Meadow would be up to 33cm.<sup>283</sup> This level of drawdown could have an adverse impact on the retained MG4 community at Hinksey Meadows. In EIA terms, the unmitigated effect of the scheme on Hinksey Meadow is 'major' and 'adverse'.<sup>284</sup>
- 180. In order to understand the impacts of the scheme on Hinksey Meadow and develop the mitigation and compensation strategy, the Agency has worked closely with the Floodplain Meadow Partnership ('FMP'), national experts in MG4 grassland, since 2017.<sup>285</sup> As explained by Mr Scholey, the mitigation and compensation strategy is fourpronged:<sup>286</sup>

<sup>284</sup> ES (**CD3.8**), page 192.

<sup>277</sup> Graham Scholey, EiC,

<sup>&</sup>lt;sup>278</sup> Michael Thorne, Proof, para 8.15.1. (EA/1a)

<sup>&</sup>lt;sup>279</sup> Graham Scholey, Proof, page 6, para 6.6. (EA/9a)

<sup>&</sup>lt;sup>280</sup> Q95 flows are the flows that are exceeded for 95% of the year. Phil Raynor, Rebuttal, para 7.8.

<sup>&</sup>lt;sup>281</sup> Phil Raynor, Rebuttal, para 7.8. (EA/5d)

<sup>&</sup>lt;sup>282</sup> Phil Raynor, Rebuttal, para 7.8. (EA/5d)

<sup>&</sup>lt;sup>283</sup> CD3.38a.

<sup>&</sup>lt;sup>285</sup> Graham Scholey, Proof, para 10.17. (EA/9a)

<sup>&</sup>lt;sup>286</sup> Graham Scholey, Proof, para 10.17(a) to (d). (EA/9a)

- In the first instance, the area of floodplain meadow that will be lost to the scheme has been minimised through the channel alignment.
- Second, two existing areas of floodplain meadow outside of the two-stage channel will be enhanced totalling just over 16 hectares with a suitable mix of grasses and wildflowers to create and restore lowland meadow habitat. This area will be managed appropriately to encourage MG4 in the long term, but would also compensate for the loss of MG15.<sup>287</sup> Insofar as possible, the seed for the restoration will be taken from Hinksey Meadow, or from other MG4 grassland areas.
- The water levels in the Seacourt and Bulstake streams will be managed to maintain the river levels under both Q95 (low flow) and dry year conditions, in order to maintain corresponding groundwater levels in Hinksey Meadow. This is achieved by installing a series of fixed crest, nature-like, riffles in the Bulstake Stream, which will mimic natural bed features.<sup>288</sup> The height of the riffles have been set by reference to observed river levels from May and June 2017. The effect of the proposed riffles on the upstream water levels has been modelled through the fluvial model. These levels have been inputted into the groundwater model, demonstrating that in the simulated dry year, drawdown of groundwater from Hinksey Meadow is reduced to 3cm. This level of drawdown would not have an adverse effect on the retained MG4.
- Translocation of turf from the area of MG4 grassland which will need to be removed for the construction of the scheme. The turf will be translocated to a suitable receptor site where it can be managed as lowland meadow.<sup>289</sup> It should be noted that the Agency has not treated translocation as an essential part of the mitigation strategy for the purposes of assessing residual effects. There is no dispute that, on balance, it is more likely that translocation will fail rather than succeed, but it is agreed with Mr Woodfield on behalf of OPT that an attempt to translocate the turf is an appropriate step to avoid the destruction of valuable turf.<sup>290</sup>
- 181. Additionally, the Agency will undertake a detailed monitoring programme to ensure that the mitigation and compensation measures are effective.<sup>291</sup> As Mr Raynor explained, there is already five years worth of monitoring data to inform this assessment. Monitoring will mean that, in the event that issues emerge, corrective management actions can be taken.<sup>292</sup> This could include adjusting the heights of the riffles in the Bulstake Stream to influence the groundwater levels in Hinksey Meadow.<sup>293</sup> Further, the Agency can influence the flows in this area through existing

<sup>&</sup>lt;sup>287</sup> Mr Scholey, EiC, in response to Mr Woodfield.

<sup>&</sup>lt;sup>288</sup> Flood Risk Assessment Appendices, Apx E, Groundwater Modelling Report (CD3.38a).

<sup>&</sup>lt;sup>289</sup> The MG4 Grassland Mitigation Strategy (CD3.16).

<sup>&</sup>lt;sup>290</sup> Mr Woodfield, XX.

<sup>&</sup>lt;sup>291</sup> Graham Scholey, Proof, para 10.18. (EA/9a) ES Appendix D-23 'MG4 Mitigation Strategy' (**CD3.16**) and ES, Apx 17 'Management and Monitoring' (**CD3.9**).

<sup>&</sup>lt;sup>292</sup> Graham Scholey, Proof, para 10.18. (EA/9a)

<sup>&</sup>lt;sup>293</sup> Phil Raynor, XX.

control structures, and as Mr Scholey explained this includes managing flows for ecological reasons.

- 182. The unmitigated effects of the scheme on the lowland meadow (MG4a) habitat at Hinksey Meadow would be 'major' and 'adverse' in EIA terms.<sup>294</sup> If the mitigation is successful, as anticipated, the direct impact would remain 'major' and 'adverse', but would be compensated by the 16 hectares of habitat restoration. The indirect impact would be reduced to 'not significant'.<sup>295</sup> This assessment does not rely on the successful translocation of turfs, which would represent a benefit above and beyond the assessed impacts.
- 183. Both the assessment of effects and the mitigation strategy have been informed by the FMP's 'Oxford Flood Alleviation Scheme: assessment of impacts on species-rich floodplain meadow habitat March 2018' (**CD 3.8c**). Natural England (NE) has not objected to the application for planning permission based on the ecological effects of the scheme. Indeed, NE confirmed that it had no further comments in respect of the Agency's response to OxCoCo's Regulation 25 request for further information on the effects of the scheme on MG4. Both OxCoCo and OxCiCo's ecologists have indicated that they consider the mitigation proposed for the effects on Hinksey Meadow are adequate.<sup>296</sup>
- 184. In particular, neither FMP nor NE has suggested that additional, site-specific groundwater modelling is necessary to understand the indirect effects of the scheme on Hinksey Meadow. Nor has FMP or NE expressed concern that the proposed mitigation strategy is inadequate.
- 185. There has been much Inquiry time spent disputing when the Agency first became aware of the value of Hinksey Meadow. This is relevant insofar as it has been suggested that key scheme design decisions were made prior to and in the absence of an understanding of the Meadow's significance.<sup>297</sup> As a matter of fact, the Agency were aware of the presence of MG4 as of 2014.<sup>298</sup> The flood modelling report produced by ESI in 2016 identified the potential for impacts on MG4. The Agency has since 2016 sought to address the impacts on Hinksey Meadow through negotiations with OPT as well as in engagement with ecological stakeholders.
- 186. Before turning to the substance of OPT's objection in respect of ecological impact, it is worth noting the following:
  - No party to the Inquiry has challenged the principle of a western conveyance as the means of addressing flood risk in Oxford;
  - Furthermore, all alternatives proposed by objectors include conveying water through, over or under Hinksey Meadow. All parties to the Inquiry therefore

<sup>&</sup>lt;sup>294</sup> ES, page 179, Table 8.9 (**CD3.8**).

<sup>&</sup>lt;sup>295</sup> ES, pages 192 – 193, Table 8.10 (**CD3.8**).

<sup>&</sup>lt;sup>296</sup> Graham Scholey, Proof, Apx 2, 3 and 7. (EA/9a)

<sup>&</sup>lt;sup>297</sup> As suggested by OPT.

<sup>&</sup>lt;sup>298</sup> Graham Scholey, XX.

agree that Hinksey Meadow must be used to convey water in some shape or form;<sup>299</sup>

- There is, therefore, no dispute that it is unavoidable that Hinksey Meadow will be impacted if there is to be a scheme that addresses flooding in Oxford, whether through installing a pipe in Hinksey Meadow, or through creating a hydrogeological low point that risks drawing down groundwater from within the Meadow;
- Accordingly the need to address direct and indirect effects on this site is not unique to the scheme but common with all alternatives before the Inquiry.

#### **OPT's** objection

- 187. The scope of the dispute with OPT is in truth narrow. In particular:
  - There is no dispute of substance about the direct effects of the scheme on Hinksey Meadow;
  - In terms of compensation for the direct effects, the mechanism of creating new lowland meadow is agreed to be the appropriate mechanism. OPT does not suggest that there is any other mechanism that ought to be used;<sup>300</sup>
  - There is no dispute about the nature of the indirect effects on the Meadow, namely, that it will arise through the creation of a hydrogeological low point that will draw down water from the groundwater regime in the Meadow;<sup>301</sup>
  - In terms of mitigation for the indirect effects, the principle of mitigating drawdown through elevating water levels is appropriate.<sup>302</sup> Neither Mr Coombs nor Mr Woodfield identified any other mitigation measure, other than proposed riffle structures, that would be an appropriate means of achieving this outcome. FMP has expressed itself content with the proposals;
  - If the Inspector is satisfied that the mitigation proposed will be delivered as proposed, such that the groundwater drawdown would be reduced to 3cm, OPT's concerns about indirect effects are met;<sup>303</sup>
  - In terms of the planning policy position, it is relevant when considering whether there are "*wholly exceptional circumstances*" (paragraph 186, the Framework)

<sup>&</sup>lt;sup>299</sup> This was endorsed by Dominic Woodfield (OPT), XX.

<sup>&</sup>lt;sup>300</sup> Dominic Woodfield (OPT), XX (Day 5).

<sup>&</sup>lt;sup>301</sup> Dominic Woodfield (OPT), XX (Day 5).

<sup>&</sup>lt;sup>302</sup> Dominic Woodfield (OPT), XX (Day 5).

<sup>&</sup>lt;sup>303</sup> Mr Woodfield (OPT), XX (Day 5). This is subject to OPT's concerns regarding the ability to understand the extent of effects.

that there is a demonstrable need for the scheme, which notably OPT does not dispute.

- 188. OPT's position in respect of the ecological effects of the scheme can be summarised as follows:
  - Whilst there is no dispute as to the nature or scale of the direct impact on MG4 habitat at Hinksey Meadow, OPT's position is that the compensation measures proposed are insufficient to offset the harm that will arise;
  - Whilst there is no dispute as to the nature of the indirect effects of the scheme on Hinksey Meadow, OPT's position is that the groundwater modelling that has been carried out is insufficient to understand the true extent of these effects. As such, the effects could be worse than those estimated in the ES;
  - With regards to the proposed mitigation strategy for the indirect effects, OPT's position is that, whilst it does not suggest that any alternative mitigation should be pursued, the uncertainty about modelling means that there can be no certainty that the mitigation will be adequate.
- 189. With regards to the first point, the Agency has worked with FMP in order to develop a strategy for habitat restoration and creation, in addition to the translocation of turfs and the identification of suitable compensation sites. The selection of compensation sites has been endorsed by FMP as being those where the existing plant community and the hydrological and soils data indicate that the restoration or creation of MG4 should be possible.<sup>304</sup> The assessment of impact on Hinksey Meadow has not taken into account the translocation, such that if it were successful, this would be an additional benefit over and above that which has been assessed. Mr Scholey fairly recognised that the translocation is not guaranteed to succeed; conversely, Mr Woodfield agreed that it was still appropriate to attempt it. It is unclear how, if at all, the precise prospects of success of the MG4 translocation bear on the question for this Inquiry, namely whether there is a compelling case for the acquisition of the land and rights identified in the CPO. The direct loss of some of this important meadow has been recognised. It does not, on any sensible basis, outweigh the huge benefits that the scheme will deliver. That is so regardless of whether compensation succeeds in whole or in part.
- 190. With regards to the second and third points, as explained by Mr Raynor and Mr Scholey, the groundwater model is sufficient for assessing the indirect impacts on Hinksey Meadow. In any event, the Agency has five years' worth of groundwater modelling data from boreholes, which it has been gathering since 2018.<sup>305</sup> This will provide a robust evidence base to understand the baseline condition and monitor any changes once the scheme is in operation. This baseline data will allow robust monitoring of effects in order to detect significant deviations in the groundwater regime and enable the riffles to be altered if necessary.
- 191. It is significant that OPT does not suggest that any different or additional mitigation is required in order to address indirect effects. That is because in hydrogeological terms, the nature of the effect is well understood even if its quantification is in dispute. Put another way, the only real outstanding issue is the level at which the riffles are set.

<sup>&</sup>lt;sup>304</sup> Graham Scholey, Proof, page 38, para 10.29. (EA/9a)

<sup>&</sup>lt;sup>305</sup> Graham Scholey, EiC (Day 2).

Accordingly, and notwithstanding the extensive evidence on groundwater issues, in truth this dispute is about the precise design of mitigation measures: a point which is obviously for the planning process, and not for this Inquiry. OPT's Closing Submissions contain many paragraphs of criticism of groundwater modelling, but wholly fail to address these points. The same impact – potential dewatering through the creation of a localised low point – would occur in OPT's preferred option (A1R). The same mitigation – localised raised riffles – would be promoted by OPT to address that impact. The same adaptive management would be used in light of ongoing monitoring. Accordingly, this is a debate which goes nowhere in deciding whether there is a compelling case for confirmation of the Order. That submission is made without prejudice to the Agency's case – both at this Inquiry, and in the context of the planning application – that sufficient information is available to judge likely significant effects for EIA purposes, and to identify the appropriate type of mitigation measure.

# Biodiversity net gain

192. The current planning application is not required by law to deliver a BNG, although there is support for providing net gains in local and national policy. The Agency seeks, however, to secure 10% BNG across the scheme. Such net gain is to be measured disregarding the compensation to be provided for the loss of MG4. The BNG assessment has been contested and revised during the course of the planning application – a point which has no bearing at all on the confirmation of this CPO, since that application still falls to be determined. In any event, the current assessment shows only a very small net loss within the scheme limits, so the offsite requirement is limited. Discussions are ongoing as to how (and where) further net gains will be secured.

## Conclusion on ecology

- 193. Paragraph 186 of the Framework (2023) provides that "development resulting in the loss or deterioration of irreplaceable habitats... should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists." Footnote 67 provides the following examples of "exceptional reasons": "infrastructure projects... where the public benefit would clearly outweigh the loss or deterioration of habitat."
- 194. Whilst an adverse impact on MG4 grassland at Hinksey Meadow is unavoidable, the Agency has sought to minimise the impacts through scheme design; to mitigate adverse impacts so far as possible; and to provide compensation for the loss of habitat. The need for the scheme in order to address the devastating effects of flooding provides exceptional reasons to justify the impact on lowland meadow habitat.
- 195. Whilst the impact on the MG4 grassland at Hinksey Meadow will no doubt be given weight in the planning process, a broader judgement will also be called for. As explained above this scheme will deliver substantial ecological benefits. These will weigh in favour of the scheme in the planning process.

## <u>Recreation</u>

196. The Agency recognises that the scheme area is well used by walkers, joggers and cyclists, and there is extensive equestrian use. This consideration has shaped the design of the scheme, which seeks to deliver improvements to recreation where possible, as well as minimising impacts on PRoW and ensuring high quality diversions

where necessary.<sup>306</sup> Where public open space is being acquired, exchange land will be secured that is equally advantageous to the public.<sup>307</sup>

- 197. As explained in Ms Burt's evidence, the scheme will deliver material benefits in terms of recreation. These can be summarised as follows:<sup>308</sup>
  - The installation of a permanent footbridge over the new stream to enable the continued use of the informal path between the Thames path and North Hinksey. This will replace the temporary structures that are currently in place over the Hogacre Ditch.
  - A new 2.25km permissive cycleway and footpath will run along the proposed maintenance track from Osney Mead to South Hinksey, providing a new recreational access route. Gates will be installed to maintain access to the main informal paths that link to this route.
  - Existing paths within the scheme area will be made more accessible through the installation of kissing gates, replacing the existing stiles.
  - Devil's Backbone PRoW will be subject to improvements, which will improve accessibility and make it suitable for pedestrians and cyclists.
  - More generally, the existing network of PRoW, informal paths and green spaces are vulnerable to flooding.<sup>309</sup> The effect of the scheme will mean that the footpath network and areas of public open space will be more resilient to flooding, therefore providing access for longer in periods of heavy rainfall.<sup>310</sup>
- 198. The promotion of opportunities for recreation within the scheme is consistent with the duty on the Agency under section 6 of the Environment Act 1995.<sup>311</sup>
- 199. With regards to the need to permanently divert sections of PRoW, it is readily apparent that the diversions are generally minor and result in negligible increases in distances.<sup>312</sup> In many instances, the diversions run in close parallel to the existing routes. The most substantial temporary diversion is that of PROW 352/3 (Old Abingdon Road to South Hinksey). As explained by Mr Lear, the reason for this diversion is to permit the channel to deviate in alignment in order to protect the nationally important archaeological remains at Old Abingdon Road.<sup>313</sup>
- 200. The construction of the scheme will require the temporary diversion of a number of PRoW. The diversions have been designed so that they are as short and as close as possible to the diverted route. The period for which PROW will be diverted will be kept to a minimum. Access to green spaces within the scheme area will be retained, albeit in

<sup>&</sup>lt;sup>306</sup> Policy C11 of the OxCoCo Minerals and Waste Plan (**CD 4.2**).

<sup>&</sup>lt;sup>307</sup> In accordance with section 19 of the Acquisition of Land Act 1981. See the Open Space and Exchange Land Report at **CD2.11** and Michael Thorne's Proof, section 14.

<sup>&</sup>lt;sup>308</sup> Penny Burt, Proof, pages 32 – 33, para 8.16. (EA/8a)

<sup>&</sup>lt;sup>309</sup> Penny Burt, Proof, page 32, para 8.11. (EA/8a)

<sup>&</sup>lt;sup>310</sup> Penny Burt, Proof, page 37, para 8.28. (EA/8a)

<sup>&</sup>lt;sup>311</sup> Penny Burt, Proof, page 3, para 4.3. (EA/8a)

<sup>&</sup>lt;sup>312</sup> See INQ/7b1 and INQ/7b2.

<sup>&</sup>lt;sup>313</sup> David Lear, Errata, page 1, para 2.4. This was accepted by Ms Murphy on behalf of OFEG as a "good diversion" for this reason. Ms Murphy, XX (Day 7).

some instances access will be gained through a different means.<sup>314</sup> These mitigation measures have been incorporated into the contractor's Works Information and form part of the Environmental Action Plan.<sup>315</sup> The impact of restricted access to green space during the construction period has been specifically assessed in the ES.<sup>316</sup>

- 201. The inevitable short-term disruption that will be caused during construction of the scheme is far outweighed by the long-term beneficial impacts on recreation that it will deliver.
- 202. OxCoCo's landscape specialist's position is that she is satisfied that the Agency has explored opportunities to improve recreational opportunities across the scheme and considers that the creation of a permissive north-south route and improvements to the PRoW network is a benefit of the scheme.<sup>317</sup> The scheme is in accordance with policy C11 of the OxCoCo Minerals and Waste Plan.<sup>318</sup>

### Cultural heritage

- 203. The scheme has been subject to rigorous archaeological evaluation, which demonstrates that no significant impacts will arise.<sup>319</sup> The methodology adopted has been agreed with Historic England, OxCiCo and OxCoCo.<sup>320</sup>
- 204. As explained by Catherine Charman, Old Abingdon Road is a scheduled ancient monument of national significance, due to the presence of Norman stone culverts.<sup>321</sup> The alignment of the scheme has been informed by trial trenching and borehole evaluation, to ensure that the channel cuts through Old Abingdon Road in an area that has already suffered from truncation and collapse and avoids the better preserved sections.<sup>322</sup> This has been agreed with Historic England and OxCoCo's archaeologist.<sup>323</sup>
- 205. A number of east-west causeways and potential causeways were identified within the scheme area. As explained by Ms Charman, these have all been subject to evaluation through trial trenching. In summary:
  - North Hinksey Causeway has been assessed as being most likely of postmedieval date and therefore of low value.<sup>324</sup> The proposed channel will remove part of the causeway, resulting in a moderate magnitude of effect and an overall impact of 'slight' and 'adverse' in EIA terms.<sup>325</sup> The proposed mitigation is to

<sup>&</sup>lt;sup>314</sup> See Penny Burt, Proof, pages 34 – 36, para 8.22. (EA/8a)

<sup>&</sup>lt;sup>315</sup> ES, Appendix G (**CD3.8g**).

<sup>&</sup>lt;sup>316</sup> Penny Burt, Proof, page 29, para 8.2. (EA/8a)ES, Chapter 5, section 5.5 (CD3.8)

<sup>&</sup>lt;sup>317</sup> Penny Burt, Proof, page 40, para 8.32. (EA/8a)

<sup>&</sup>lt;sup>318</sup> CD4.2

<sup>&</sup>lt;sup>319</sup> Policy C9 of the OxCoCo Minerals and Waste Plan (**CD 4.2**). The Framework , section 16.

<sup>&</sup>lt;sup>320</sup> Catherine Charman, Proof, page 4, para 4.4. (EA/10a)

<sup>&</sup>lt;sup>321</sup> Catherine Charman, Proof, page 11, para 4.4. (EA/10a)

<sup>&</sup>lt;sup>322</sup> Catherine Charman, Proof, page 12, para 6.10. (EA/10a)

<sup>&</sup>lt;sup>323</sup> Catherine Charman, Proof, page 12, para 6.10. (EA/10a)

<sup>&</sup>lt;sup>324</sup> Catherine Charman, Proof, page 14, para 7.8. (EA/10a)

<sup>&</sup>lt;sup>325</sup> Catherine Charman, Proof, page 14, para 7.9. (EA/10a)

locate a trench in the location of the new bridge in order to obtain a crosssection.<sup>326</sup> Any archaeological remains that are found will be excavated and recorded appropriately.<sup>327</sup> As explained by Ms Charman, due to the date of the causeway, it is unlikely to be the medieval route into Oxford, as suggested by OPT.<sup>328</sup>

- Willow Walk similarly is assessed as being of low value as it is of local importance only.<sup>329</sup> The scheme has been designed to locate the necessary works at the least sensitive area. The impact of the scheme is moderate in magnitude, as part of it will be removed for the channel to pass through and for a bridge to be constructed. This produces a 'slight' and 'adverse' magnitude of effect, which will be mitigated through archaeological recording.<sup>330</sup>
- The land between Willow Walk and North Hinksey Causeway was not identified as having any known heritage assets as part of the desk based assessment. The archaeological investigations disclosed a metalled trackway and horseshoe remains.<sup>331</sup> As explained by Ms Charman, this causeway is unlikely to be the western approach to Oxford, as it is constructed from a single layer of stones.<sup>332</sup> As a precaution, this heritage asset was determined as being of medium value. The scheme will require partial removal of the causeway as a result of the excavation of the channel and the location of a temporary compound within this field, resulting in a 'moderate' and 'adverse' significance of effect.<sup>333</sup> In order to mitigate this impact, the causeway will be the subject of archaeological excavation prior to any intrusive construction activities taking place.<sup>334</sup> Paleochannels were also found in this area, which will be removed in part in order to construct the scheme. These are considered to be of local significance only and therefore of low value. The effect on this geoarchaeology is minor, producing a 'slight' and 'adverse' significance of effect.
- 206. The scheme complies with Policy C9 of the OxCoCo Minerals and Waste Plan<sup>335</sup> and section 16 of the Framework.

### Green Belt

207. The Agency has applied Green Belt policies on a precautionary basis.<sup>336</sup> The scheme protects the purposes for which the land is included in the Green Belt by safeguarding the floodplain, preserving its openness and protecting the countryside

<sup>&</sup>lt;sup>326</sup> Catherine Charman, Proof, page 15, para 7.10. (EA/10a)

<sup>&</sup>lt;sup>327</sup> Catherine Charman, Proof, page 15, para 7.10. (EA/10a)

<sup>&</sup>lt;sup>328</sup> **OX 009S.** Catherine Charman, Proof, page 14, para 7.8. (EA/10a)

<sup>&</sup>lt;sup>329</sup> Catherine Charman, Proof, page 17, para 8.6. (EA/10a)

<sup>&</sup>lt;sup>330</sup> Catherine Charman, Proof, page 18, para 8.7 – 8.9. (EA/10a)

<sup>&</sup>lt;sup>331</sup> Catherine Charman, Proof, page 19, paras 9.5 – 9.6. (EA/10a)

<sup>&</sup>lt;sup>332</sup> Catherine Charman, Proof, page 20, para 9.8. (EA/10a)

<sup>&</sup>lt;sup>333</sup> Catherine Charman, Proof, page 20, para 9.11. (EA/10a)

<sup>&</sup>lt;sup>334</sup> Catherine Charman, Proof, page 21, para 9.15. (EA/10a)

<sup>&</sup>lt;sup>335</sup> CD4.2.

<sup>&</sup>lt;sup>336</sup> Veronica James, Proof, page 10, para 7.7. (EA/11a)

from encroachment.<sup>337</sup> The need to address flood risk in Oxford and the substantial benefits of the scheme provides very special circumstances for its delivery.

208. The scheme is therefore in accordance with policy C12 of OxCoCo Minerals and Waste Plan (**CD 4.2**) and Policy G3 of the OxCiCo Local Plan (**CD 4.4**) reflect national planning policy on Green Belt. Core Policy 13 of the VoWH Local Plan Part 1 (**CD 4.3a**) and the Framework.

#### Highways impacts

- 209. The impact of the scheme, both during construction and operation, has been assessed in the Transport Statement submitted with the application for planning permission.<sup>338</sup>
- 210. The operation of the scheme will have no significant adverse impacts on the local or strategic highway network, save for the need to divert certain PRoW (as explained above). The reduction in the risk of flooding will materially improve the resilience of the highway network in times of heavy rainfall.<sup>339</sup> The main routes that will experience flood risk benefits from the scheme are Botley Road and Abingdon Road, as well as PRoWs, footpaths and bridleways.<sup>340</sup> Botley Road is the main arterial route into and out of Oxford from the west and Abingdon Road from the south.<sup>341</sup> At present, both roads are vulnerable to flooding in a 1 in 5 year event (20% AEP).<sup>342</sup> The scheme will reduce this risk to 1 in 50 years (2% AEP) in the case of Botley Road and 1 in 100 years (1% AEP) in the case of Abingdon Road, thereby significantly reducing the risk of disruption due to the flooding and the subsequent impacts to travel.<sup>343</sup>
- 211. With regards to the impacts of construction traffic on the highway network, the approach adopted in the Transport Assessment was agreed with OxCoCo as local highway authority.<sup>344</sup> The three accesses which will experience the greatest number of vehicle trips were assessed, namely the access from Seacourt Park and Ride, the access from Parker Road and that off Abingdon Road.<sup>345</sup> The operation of these accesses will be controlled by standard measures in a construction traffic management plan.
- 212. In terms of HGV movements, the greatest number of movements will use the access off Parker Road onto the A34.<sup>346</sup> The use of the A34 is intentional, as it minimises the need for HGVs to use the local road network.<sup>347</sup> However, the number of exiting HGV movements onto the A34 is expected to be 2 3 an hour travelling southbound and 9 –

<sup>&</sup>lt;sup>337</sup> Veronica James, Proof, page 28, para 10.56. (EA/11a)

<sup>&</sup>lt;sup>338</sup> CD3.25.

<sup>&</sup>lt;sup>339</sup> David Lear, Proof, page 24, para 9.23. (EA/7a)

<sup>&</sup>lt;sup>340</sup> David Lear, Proof, page 24, para 9.24. (EA/7a)

<sup>&</sup>lt;sup>341</sup> David Lear, Proof, pages 24 – 25, paras 9.24 – 25. (EA/7a)

<sup>&</sup>lt;sup>342</sup> David Lear, Proof, pages 24 – 25, paras 9.24 – 25. (EA/7a)

<sup>&</sup>lt;sup>343</sup> David Lear, Proof, pages 24 – 25, paras 9.24 – 25. (EA/7a)

<sup>&</sup>lt;sup>344</sup> David Lear, Proof, page 13, para 8.5. (EA/7a)

<sup>&</sup>lt;sup>345</sup> David Lear, Proof, page 13, para 8.5. (EA/7a) Pages 1, 4 and 7 (**CD3.8a2**).

<sup>&</sup>lt;sup>346</sup> Transport Assessment, Table 5.3, page 43 (**CD3.25**).

<sup>&</sup>lt;sup>347</sup> Veronica James, Proof, page 20, para 10.15. (EA/11a)

10 an hour travelling northbound, with these movements restricted to 'off peak' hours.<sup>348</sup>

- 213. Dr Therivel argues that the A34, which forms part of the strategic highway network, will be rendered unsafe as a result of these movements. This is predominantly as a result of the length of the A34 slip roads and the proximity to Hinksey Hill interchange.<sup>349</sup> The position of National Highways is that the scheme would *"not have an unacceptable impact on the safety, reliability or operational efficiency of the strategy [sic] road network in the vicinity of the site (A34)"* subject to the imposition of a construction environmental management plan. Whilst Dr Therivel's position is that National Highways does not have sufficient information about the geography of the junction to reach this conclusion,<sup>350</sup> it is inconceivable that National Highways safety issue. Nor is it plausible that National Highways do not understand the operation of this part of the strategic road network. The consensus from National Highways, OxCoCo and Mr Lear reflects the fact that the number of additional HGVs using the A34 is low, and will not result in a significant effect on its operation.
- 214. At National Highways' request, a temporary carriageway will also be constructed on the local road network between Old Abingdon Road and Kennington Road, in order to mitigate the impact of the necessary road closures. The carriageway will be operational before either road is closed for the construction of the scheme.<sup>351</sup>
- 215. With the proposed mitigation, the scheme will not result in an unacceptable adverse impact on the local or strategic highways network, such that it is in compliance with policy C10 of the OxCoCo Minerals and Waste Plan,<sup>352</sup> policy M2 of the OxCiCo Local Plan,<sup>353</sup> policy 17 of the VoWH Local Plan Part 1<sup>354</sup> and the Framework.

### Construction impacts

- 216. The scheme has been designed to minimise construction impacts, including the impact on the local and strategic road network, air quality, dust, noise and vibration, which will be managed through a detailed construction traffic management plan and construction environmental management plan.<sup>355</sup> The construction impacts have been fully assessed in the ES and are not considered to be significant once mitigated.<sup>356</sup>
- 217. As explained in the evidence of Windsor Young, a range of measures have been identified in the Environmental Action Plan in order to minimise the effects of construction. With regards to noise, this includes measures such as avoiding the noisiest methods of construction; restricting hours of operation in certain locations; and

<sup>354</sup> CD4.3a.

<sup>&</sup>lt;sup>348</sup> David Lear, Rebuttal, page 6, para 5.3. (EA/7d)

<sup>&</sup>lt;sup>349</sup> Therivel and O'Hara, Proof, page 25, para 3.4.2. (OX 002N/1a)

<sup>&</sup>lt;sup>350</sup> Therivel, XX (Day 9).

<sup>&</sup>lt;sup>351</sup> David Lear, Proof, page 30, para 10.15. (EA/7a) Transport Assessment, Appendix F (CD3.25).

<sup>&</sup>lt;sup>352</sup> CD4.2.

<sup>&</sup>lt;sup>353</sup> CD4.4.

<sup>&</sup>lt;sup>355</sup> Windsor Young, Proof, page 7, para 6.2. (EA/6a)

<sup>&</sup>lt;sup>356</sup> CD3.8. The ES Addendum is at CD3.9.

monitoring noise levels on a continual basis.<sup>357</sup> In terms of air quality, this includes using dust suppression measures on trafficked routes. The sequence of construction minimises any risk of accidental pollution of the watercourses within the stream area.<sup>358</sup> Measures will also be adopted to minimise the disturbance caused to ground conditions.<sup>359</sup>

- 218. The main contractor's compound is located to the north of South Hinksey village.<sup>360</sup> A temporary earth bund will be constructed between the compound and the village, in order to provide visual screening. The compound will be surrounded by a solid hoarding, which will be painted in such a way as to minimise the visual impact, as agreed with the local authority.<sup>361</sup> The contractor will employ a customer liaison officer to monitor the process of notifying residents of works and engaging proactively with the local community.<sup>362</sup>
- 219. Whilst it is inevitable that some disruption will be caused during the construction process, the Agency and its contractor are committed to working with and listening to those affected throughout the construction programme. For example, there has already been direct engagement with Elizabeth Jukes to work through the impacts of construction on her property and such steps will continue. No doubt the planning authority will impose conditions to secure the proper management of construction activities.
- 220. The scheme is therefore in compliance with Policy C10 of the OxCoCo M&W Plan (CD 4.2), Policy M2 of the OxCiCo Local Plan (CD 4.4) Policy and Development Policy 17 of the VoWH Local Plan Part 1 (CD4.3a). Policy C10: Transport of the OxCoCo Minerals and Waste Plan (CD 4.2), Policy RE6 of the OxCiCo Local Plan (CD 4.4) and Development Policy 26: Air Quality of the VoWH Local Plan Part 2.

## Addressing flood risk

- 221. National policy on flood risk and resilience to climate change is a significant material consideration in the determination of the application for planning permission for the scheme. The underlying objective of the scheme will thus be an important factor in assessing compliance with the development plan as a whole, and with national policy.
- 222. Defra's 25 year Environment Plan (2018),<sup>363</sup> sets out the Government's long term vision that we will be the first generation to leave the environment in a better state than we found it. The goals set out include reducing the risk of harm from environmental hazards, including current and future flood risk and resilience, and mitigating the effects of climate change.

<sup>&</sup>lt;sup>357</sup> Windsor Young, Proof, pages 8 - 10, para 7.2. (EA/6a)

<sup>&</sup>lt;sup>358</sup> Windsor Young, Proof, page 12, para 7.4. (EA/6a)

<sup>&</sup>lt;sup>359</sup> Windsor Young, Proof, page 15, para 7.7. (EA/6a)

 $<sup>^{360}</sup>$  Windsor Young, Proof, page 10, para 7.2(a). (EA/6a)

<sup>&</sup>lt;sup>361</sup> Windsor Young, Proof, page 10, para 7.2(b). (EA/6a)

<sup>&</sup>lt;sup>362</sup> Windsor Young, Proof, page 10, para 7.2(c). (EA/6a)

<sup>&</sup>lt;sup>363</sup> CD5.8.

- 223. Defra's July 2020 policy statement on flood risk management outlines its ambition to create a nation more resilient to future flood and coastal erosion risk.<sup>364</sup>
- 224. The Agency's statutory National Flood and Coastal Erosion Risk Management Strategy outlines the Agency's long term ambitions to build climate resilient places and to be ready to respond and adapt to flooding.<sup>365</sup> The Agency is under a statutory duty to develop the strategy, which was last updated in 2020.<sup>366</sup>
- 225. The TCFMP identifies the scheme as the preferred method of reducing flood risk for Oxford.<sup>367</sup>
- 226. This national policy imperative weighs strongly in favour of the grant of planning permission for the scheme and contributes to the compelling case for the confirmation of the Order.

## <u>EIA</u>

227. Finally, OPT's Closing Submissions appear to major on the idea that its critique of ecological evidence suggests an impediment to the grant of planning permission. This is obviously wrong. OPT has made exactly the same points to the planning authority. Some of its points have led to requests being made to the Agency; some of them have not. The planning authority will not determine the application without being satisfied as to the adequacy of the ES. In this respect, it has requested further information and indeed been given such information voluntarily by both the Agency and third parties. It is not for this Inquiry to judge the adequacy of the ES. However, it is plain that if further information is required by the planning authority, it will seek it (as it must do to comply with the law). This is no more an impediment to the grant of permission than any other procedural requirement for the determination of a planning application.

### Conclusion on planning matters

228. Whether or not planning permission should be granted, and on what terms, is not a matter for this Inquiry. But none of the matters which have been identified above suggest that planning permission will not granted, or cut across the compelling case for the scheme. The unavoidable adverse impacts that will arise from the scheme's construction and operation are comfortably outweighed by the overall compliance with development plan policies, the substantial benefits that it will deliver and the strong national imperative to improve resilience to flooding and climate change. None of these matters provide a basis on which planning permission ought to be refused for the scheme and nor do the impacts of the scheme undermine the compelling case in the public interest for confirmation of the Order.

## The Scheme is fully funded

Funding for construction

<sup>364</sup> CD5.9.

<sup>365</sup> CD5.5.

<sup>&</sup>lt;sup>366</sup> Richard Harding, EiC (Day 1).

<sup>&</sup>lt;sup>367</sup> CD2.6, page 25.

- 229. The 'cash cost' for delivering the scheme, including development costs, risk, and inflation is £176.08 million.<sup>368</sup> This includes £6.12 million as a commuted sum for maintenance of the scheme for the first ten years of operation. The formation of scheme cost is consistent with the FCERM-AG and has been verified by an independent cost consultant.<sup>369</sup>
- 230. As explained by Ms Formoy, the eligibility of projects for FCERM Grant in Aid funding is dependent on demonstrating eligible economic benefits that will be delivered. The scheme is eligible for 82% partnership funding (£134.88 million), which is topped up by £41.2 million by way of third-party funding that has been secured. The adjusted partnership funding score, taking account of the third-party funding, is <u>104%</u>. This means that the scheme is classed as fully funded and meets the affordability test.<sup>370</sup>
- 231. The details of all sources of funding are set out in the Agency's Statement of Case.<sup>371</sup> In summary, third party funding has been secured from the Thames Regional Flood and Coastal Committee, OxCoCo, OxCiCo, VoWHDC, Thames Water, National Highways, Department for Education, University of Oxford and a third party business, Denton Holdings, based on the Osney Mead industrial estate.<sup>372</sup> As confirmed by Ms Formoy, all third party funding has either been received and is being held in a dedicated account, or is contractually secured.<sup>373</sup> The strong funding position demonstrates investor confidence in the scheme and the strength of the partnership.<sup>374</sup>

### Funding for maintenance

- 232. As explained by Gareth Simpson, maintenance activities currently undertaken by the Agency on watercourses in Oxford are funded by FCERM Grant in Aid revenue allocated by Defra.<sup>375</sup> These activities currently cost approximately £135,000 per annum.<sup>376</sup>
- 233. On completion, the annual additional maintenance cost for the scheme will be £150,000.<sup>377</sup> The Agency has calculated these costs on the basis of activity required to maintain the scheme, as set out in the OFAS Maintenance Plan.<sup>378</sup>
- 234. As explained above, the funding for the construction of the scheme includes ten years' worth of maintenance costs. As Mr Simpson explained, the security of funding for maintenance that this provides for the scheme is significantly greater than would usually be provided for schemes of this sort, where no project-specific maintenance

<sup>&</sup>lt;sup>368</sup> Emma Formoy, Proof, para 10.3. (EA/3a)

<sup>&</sup>lt;sup>369</sup> Emma Formoy, Proof, para 10.10. (EA/3a)

<sup>&</sup>lt;sup>370</sup> Emma Formoy, EiC.

<sup>&</sup>lt;sup>371</sup> **CD1.3**, section 6.5. Emma Formoy, Proof, Apx 18 explains how the different funding sources meet the target cash cost. (EA/3a)

<sup>&</sup>lt;sup>372</sup> Emma Formoy, Proof, paras 12.5 – 12.15. (EA/3a)

<sup>&</sup>lt;sup>373</sup> Ms Formoy, EiC.

<sup>&</sup>lt;sup>374</sup> Emma Formoy, EiC.

<sup>&</sup>lt;sup>375</sup> Gareth Simpson, Proof, para 4.3. (EA/4a)

<sup>&</sup>lt;sup>376</sup> Gareth Simpson, Proof, para 4.5. (EA/4a)

<sup>&</sup>lt;sup>377</sup> Gareth Simpson, Proof, para 4.7. (EA/4a)

<sup>&</sup>lt;sup>378</sup> CD2.10.

funding is usually provided.<sup>379</sup> It is neither necessary nor reasonable, however, to secure 100 years' worth of funding for maintenance of the scheme up front.<sup>380</sup>

- 235. Beyond the initial ten-year period, funding will be provided by Defra through grant in aid. On the basis of the current revenue allocation principles,<sup>381</sup> there is a high degree of confidence that funding will be made available for the scheme. In particular:<sup>382</sup>
  - The scheme has a high cost benefit ratio;
  - The Agency will be the riparian owner of the majority of the channel and the majority of the individual assets, and therefore will be under a legal obligation to maintain these elements of the scheme.<sup>383</sup> This means that the scheme will score highly under the 'obligations' criteria; and
  - The scheme will be prioritised due to the high flood risk in Oxford and the number of properties protected by the scheme.
- 236. The considerable investment that the scheme represents and its critical importance to the residents and businesses of Oxford means that funding for scheme maintenance will remain a priority for the Agency across the 100-year lifetime of the scheme and beyond.<sup>384</sup> Accordingly the Inspector and Secretary of State can conclude that the scheme will be funded, and accordingly that paragraph 14 of Tier 1 of the CPO Guidance is met.

### Physical or legal impediments

237. Paragraph 15 of Tier 1 of the CPO Guidance advises that the AA needs to show that the scheme will be unlikely to be blocked by any physical or legal impediments to implementation.

### Legal impediments

238. There are no legal impediments to the delivery of the scheme. This section of the Agency's closing addresses the following three issues:

<sup>383</sup> Gareth Simpson, Proof, para 4.10. (EA/4a)

<sup>&</sup>lt;sup>379</sup> Gareth Simpson, Proof, para 4.8. (EA/4a)For example, the Maidenhead, Windsor and Eton Flood Alleviation Scheme. See Gareth Simpson, Proof, para 5.2.

<sup>&</sup>lt;sup>380</sup> Emma Formoy, EiC.

<sup>&</sup>lt;sup>381</sup> Gareth Simpson, Proof, Table 1 (page 10). (EA/4a)

<sup>&</sup>lt;sup>382</sup> Gareth Simpson, EiC (Day 2).

<sup>&</sup>lt;sup>384</sup> Gareth Simpson, Proof, para 4.9. (EA/4a)

- Securing PRoW diversions;
- Obtaining planning permission; and
- The need to use land outside the CPO order limits to deliver off-site BNG.
- 239. These are addressed in turn.

### PRoW diversions

- 240. PRoW diversion orders have been applied for by the Agency. The period for objections closed on 19 May 2023 and 11 objections were received. The applications are being determined by way of written representations. At the date of these closings, the Agency lodged a Statement of Case, as required by the timetable, on 9 November 2023. No other party has submitted a Statement of Case to the Secretary of State, and the deadline for submitting statements expired on 21 December 2023.
- 241. As explained above, the footpath diversions have been designed to be as short as possible and as convenient as possible for users. There is no reason that the orders will not be granted, such that this does not pose an impediment to the scheme.

## Planning permission

242. A planning application which has been the subject of extensive discussion with the planning authorities and statutory consultees is awaiting determination. Planning issues are addressed above. The scheme is in compliance with the adopted development plan taken as a whole. The need for the scheme, and the benefits that it would deliver, are overwhelming. There is no reason that planning permission will not be granted, such that the lack of planning permission does not represent an impediment to the scheme's delivery.

## Land for BNG

243. As noted above, BNG is not required to be delivered for this scheme as a matter of law, but delivering net gains is supported by national and local policy. The Agency intends to deliver 10% BNG across the scheme. Where possible the Agency has sought to provide BNG on site, but the nature of the proposed solution (lowering parts of the existing floodplain) means it is not possible to provide all the BNG on site. The Agency are seeking to acquire additional land off-site to create habitats to meet the additional BNG units required. This is a matter which will be addressed through the planning system. It does not present any impediment to scheme delivery since ultimately credits could be used to demonstrate BNG should agreement not be reached for the delivery of off-site gains on land controlled by the Agency.

### Physical impediment

244. There are no physical impediments to the delivery of the scheme. No party to the Inquiry has raised any specific physical impediments.

#### CPO is a last resort since reasonable steps to acquire have not been successful

- 245. Paragraph 2 of Tier 1 of the CPO Guidance states that the AA is expected to show that they have taken reasonable steps to acquire all of the land and rights included in the CPO by agreement. The same paragraph also states that compulsory purchase is intended as a last resort to secure the assembly of all land needed for the implementation of a project. Paragraph 17 of Tier 1 states that AAs are expected to provide evidence that meaningful attempts at negotiation have been pursued or at least genuinely attempted.
- 246. The reference in the Guidance to compulsory purchase being intended as a last resort is tied to whether it is necessary in order to *acquire* land, rather than for any other reason. It is a last resort if the prospects of acquiring the land by agreement are limited or nil.
- 247. The Guidance does not prescribe what "*reasonable steps*" or "*meaningful*" means. Stepping back, it is in the nature of a negotiation that each party will have its own position that it will be negotiating towards, its own starting point, its own strategy for bringing the other party towards its acceptable end position. Either agreement can be reached or it cannot. The Guidance does not prescribe the rules for this, beyond saying that reasonable steps to acquire should be carried out and that the AA should make its offers based on compensation code values.
- 248. Mr Thorne's evidence provides a comprehensive and detailed account of the negotiations with landowners that have taken place over the last 5 years. The sheer size of Mr Thorne's proof and appendices indicates the extent to which the Agency and its agents have sought to engage meaningfully with those affected.
- 249. To date, the Agency has secured heads of terms for an option agreement with seven parties (38% of the Order land) and works licences have been agreed with 66 parties,<sup>385</sup> and one settlement agreement has been completed. Where agreements have not been reached, financial offers of compensation based on the Compensation Code have been made to all those materially affected.<sup>386</sup>
- 250. Some objectors to the scheme have raised points about the negotiations carried out by the Agency. There have been 30 statutory objections amongst over 150 potential statutory objectors. 24 remain, of which 14 were programmed to speak at the Inquiry, but only 7 spoke to advance their case. Several of those, including FHT, did not advance any concern about engagement. OPT has in fact agreed to the practicalities of land acquisition but maintains its in principle objection. Concerns raised by Sackville, Richer Sounds, and Ms Ergeneli did not result in the need for any appearance at the Inquiry since progress was made. In truth there is no widespread concern of lack of engagement and the limited number of objectors at the Inquiry affirms the considerable progress made.
- 251. The Inspector can be satisfied that the CPO is pursued as a last resort. As explained in detail in Mr Thorne's evidence, and is evidenced through the resolution of many land deals, intensive and prolonged efforts to acquire by negotiation have been undertaken. It is clear that where matters have not been resolved, this largely relates to matters of in

<sup>&</sup>lt;sup>385</sup> Michael Thorne, Proof, para 15.17. (EA/2a)

<sup>&</sup>lt;sup>386</sup> Michael Thorne, Proof, para 15.25. (EA/2a)

principle objection (see e.g. OPT) or matters of compensation, which are not for this Inquiry.

## The CPO Guidance is satisfied

- 252. Paragraph 13, Tier 1 of the CPO Guidance states that each case is to be considered on its own merits and that the CPO Guidance is not intended to imply that the decision-maker will *"require any particular degree of justification for any specific order"*. In other words, the Guidance sets out a range of considerations to be weighed in the balance rather than strict tests or hurdles to be passed or failed. The overarching consideration is whether the AA has demonstrated a compelling case in the public interest for the CPO<sup>387</sup> and this should be assessed on the totality of the evidence and submissions before the Inspector.
- 253. With regards to the legal basis of the CPO and procedural formalities, both are sound.<sup>388</sup> No challenge has been made to the CPO either on the basis of the selection of the statutory power (section 154 of the Water Resources Act 1991) under which compulsory purchase is sought or in respect of the applicable procedures to be followed through the process.

## Public Sector Equality Duty

- 254. Paragraph 6 of Tier 1 of the CPO Guidance gives advice on how the public sector equality duty ("PSED") should be taken into account by AAs in compulsory purchase. It advises that AAs must have due regard to the effect of any differential or disproportionate impacts of the CPO on groups with protected characteristics.
- 255. The AA has discharged its duties in respect of section 149 of the Equality Act 2010 ('the 2010 Act') in accordance with the CPO Guidance. It considered the equality impacts of the decision to make the CPO in an Equalities Impact Assessment ('EqIA').<sup>389</sup> The EqIA identifies potential impacts on those with protected characteristics, mitigation actions that are to be taken and opportunities to promote equality.
- 256. The public sector equality duty in section 149 of the 2010 Act also applies to the Inspector in respect of the recommendation as to whether or not to confirm the CPO. It imposes a procedural requirement to *"have due regard"* to various specified considerations when taking decisions. The duty does not require a particular substantive result in respect of the CPO and the impacts of it on those with protected characteristics. Instead, it requires regard to be had to the existence of disproportionate impacts and the steps that are to be taken to avoid or minimise those impacts.<sup>390</sup>
- 257. The position that the Inspector is invited to take into account when discharging the public sector equality duty is set out in the Agency's EqIA. In summary, that assessment finds that there are no residual disproportionate impacts on equality arising from the scheme.<sup>391</sup>

<sup>389</sup> CD2.9.

<sup>&</sup>lt;sup>387</sup> CPO Guidance, paragraph 2, Tier 1.

<sup>&</sup>lt;sup>388</sup> In accordance with CPO Guidance, Tier 1, paras. 10 and 11.

<sup>&</sup>lt;sup>390</sup> Page 17 ff. (**CD2.9**).

<sup>&</sup>lt;sup>391</sup> Page 33 (**CD2.9**).

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- 258. The only party to object on the basis of the equalities impacts of the CPO is James Wynne.<sup>392</sup> Mr Wynne's objection, which is made on behalf of the 4th Oxford Scout Group asserts that the scheme will have a disproportionate impact on young people in Oxford, by virtue of the compulsory acquisition of a field adjacent to the Hinksey Stream. The Agency does not consider that the acquisition of this land will have a disproportionate impact on young people, for the following reasons:
  - As confirmed by Mr Wynne in cross-examination, neither Mr Wynne nor the Scout Group benefit from an interest in the field; Mr Wynne has only a personal licence to use the field from FHT, which is revocable at will.<sup>393</sup>
  - The licence applies to eight acres of the field, only three of which will be acquired under the Order. Subject to FHT's agreement, the remaining parcel will remain available for use by the Scout Group.<sup>394</sup> The real source of concern is that the remaining parcel does not provide direct access to the river, such that the Scout's will not have unfettered ability to carry out water-based activities.<sup>395</sup>
  - At present, there is no meaningful use of the field by the Scout Group. Mr Wynne's objection is therefore based on a future intention to use the field, rather than existing practice;<sup>396</sup>
  - Mr Wynne's position that the future viability of the Scouts depends upon the construction of a new Scout hut on the land does not withstand scrutiny. No planning permission exists for such a development and it is far from clear that planning permission would be forthcoming, in particular as the land lies within the active floodplain and the Green Belt (in respect of which, such development would be 'inappropriate development' within the definition in the Framework). Furthermore, as Mr Wynne accepted, the Scout group currently uses a range of other river-side facilities for camping and water-based activities.<sup>397</sup> Whilst this arrangement may not be optimal, there is no dispute that such facilities exist and are available to the Scout group from time to time.<sup>398</sup>
  - The Agency has made clear to Mr Wynne that it is willing to work with the Scout group in order to provide access to the river once the scheme has been constructed. In circumstances where the Agency does not currently own the land, it cannot sensibly go further than this.
  - As explained by Mr Smith, the impact of the scheme on a section of young people is no greater than the impact on any other group of people affected.<sup>399</sup>

## Human Rights under the European Convention on Human Rights

259. Consideration of European Convention on Human Rights ('ECHR') rights issues, in this instance Article 1 Protocol 1 and Article 8, is reflected in the CPO Guidance at Tier

<sup>&</sup>lt;sup>392</sup> James Wynne, Proof. (OX 010S/1)

<sup>&</sup>lt;sup>393</sup> Mr Wynne, XX (Day 9).

<sup>&</sup>lt;sup>394</sup> Mr Wynne, XX (Day 9).

<sup>&</sup>lt;sup>395</sup> As confirmed by Mr Wynne, XX (Day 9).

<sup>&</sup>lt;sup>396</sup> Mr Wynne, XX (Day 9). Mr Wynne confirmed that two young people had camped on one occasion on the field, but that it was not currently used for Scout activities.

<sup>&</sup>lt;sup>397</sup> Mr Wynne, XX (Day 9).

<sup>&</sup>lt;sup>398</sup> Mr Wynne, XX (Day 9). These are outlined in Penny Burt, Rebuttal, Appendix A.

<sup>&</sup>lt;sup>399</sup> Jonathan Smith, Proof, page 32, para 10.7. (EA/12a)

1, paragraph 2, which states that *"the purposes for which the compulsory purchase order is made [must] justify interfering with the human rights of those with an interest in the land affected*".<sup>400</sup> The courts have considered Convention rights in the context of CPOs on a number of occasions and have recognised that the "*compelling case in the public interest*" test is not materially different to the decision making required in the context of Convention rights, on the basis that the "*compelling case*" approach necessarily involves weighing the individual's rights against the public interest<sup>401</sup>. The balance between the public interest and private rights is therefore not only a requirement of the CPO Guidance but also reflects the position under the Human Rights Act 1998 and the ECHR.

260. The Agency has considered the rights of all those affected by the Order under Article 8 and Article 1 of the First Protocol. An assessment of the impact of the scheme on human rights is provided at **CD2.16**. The Agency considers that the substantial benefits secured by the scheme provides a compelling case that justifies the interference with individual rights, in particular when regard is had to the rights of those affected by the Order to compensation in accordance with the Compensation Code.<sup>402</sup>

## Conclusions

261. For all the reasons given in evidence and in submissions, the AA submits that there is a compelling case in the public interest to justify the confirmation of the CPO. Doing so will enable the delivery of a much needed, major flood alleviation scheme for Oxford, delivering substantial benefits for residents, businesses and the reputation of Oxford. It will change the reputation of this city from a place that is generally prone to flooding, to a place which is generally protected from flooding. Missing this opportunity to deliver this scheme will with little doubt result in flooding of homes, businesses, and transport infrastructure which could be avoided. Despite the persistent resistance to the scheme from some, now is the time to address Oxford's flood risk today and for generations to come.

<sup>&</sup>lt;sup>400</sup> See also paragraph 12 of Tier 1 of the CPO Guidance.

<sup>&</sup>lt;sup>401</sup> See e.g. *Bexley LBC v. Secretary of State* [2001] EWHC Admin 323 at [46] and *R (Hall) v. First Secretary of State* [2008] J.P.L. 63 at [15].

<sup>&</sup>lt;sup>402</sup> Pages 27 – 31 (**CD2.16**).

#### THE SUPPORTORS (Who presented evidence at the Inquiry)

#### Vale of the White Horse – Cllr Bethia Thomas (Sup 01/01)

- 262. The VoWHDC agreed to become a partner in the OFAS in 2014, seven years after the devastating floods in 2007 which saw hundreds of homes flooded in the Vale and in Oxford, causing major disruption. Families affected by the flooding included Abingdon residents who had to move into temporary accommodation, disrupting their lives, work and their children's education as well as causing the loss of irreplaceable items.
- 263. To have your home flooded is a miserable, upsetting and costly experience. Members of her council have experienced this first hand, and have supported many other residents who have suffered in this way. The OFAS offers enhanced flood protection to almost 1,000 homes, including those in Botley and South Hinksey in the Vale, and is designed to prevent such disruption.
- 264. By reducing the likelihood of flooding, and its impact on local homes and businesses, they are creating a long-term improvement to their residents' quality of life. Whilst they have to balance the important benefits of any flood alleviation scheme with any environmental effects that may arise, her council believes that in this case they should consider the lives of their residents first, and reduce the impact on the environment and other concerns as much as possible.
- 265. In their representations over the years, they have explicitly asked for appropriate measures to be taken regarding environmental matters including BNG and protection of trees. They have also requested a construction management plan and they have sought to minimise the visual impact of the scheme upon the landscape.
- 266. For several years their officers, supported by successive leaders of the council and by other senior members, have been working closely with the Agency on plans to mitigate the impacts of the scheme, both in its design and construction.
- 267. Once completed the scheme will provide greatly enhanced flood protection for hundreds of their residents and local businesses for many years to come.
- 268. Furthermore, the scheme will create over 20 hectares of new wetland, linking to existing wildlife sites and helping to reverse the national decline in wetland habitats. Over time there will be new hedgerows and native deciduous woodland.
- 269. By working with the Agency, they have been able to influence the design and construction of the scheme and she looks forward to continuing the positive partnership approach.

# Vale of the White Horse – Andrew Down Deputy Chief Executive - Partnerships (Sup 01/02)

- 270. In the area of the proposed scheme, the administrative boundary between this council and OxCiCo follows the line of existing waterways Hinksey Stream and Hogacre Ditch. Land to the west of the boundary lies within the Vale of White Horse, while land to the east is in the city.
- 271. The extent of the lowered floodplain proposed by the scheme lies partly within the Vale and partly within the city.
- 272. The scheme is designed to reduce flood risk to homes and businesses in the areas of Botley Road, Abingdon Road, Osney Mead and South Hinksey. Of those areas, the

village of South Hinksey lies within the Vale of White Horse area. Much of South Hinksey is low-lying and has flooded frequently, particularly severely in 2007.

#### Council support for flood alleviation measures

- 273. In 2014 the Council joined the newly formed partnership for the OFAS and has played an active role in the project throughout, working with partners to maximise the benefits and minimise the impacts of the scheme design.
- 274. In 2016 the council funded works carried out by the Agency which have subsequently enabled temporary flood barriers to be deployed around South Hinksey at times of high risk. The temporary barriers have been required on several occasions, and on deployment in 2021 they were very close to being overtopped. Deployment of the temporary barriers is a time-consuming and labour intensive process. This solution was always intended as a short-term approach pending the delivery of OFAS.
- 275. Elsewhere, this council has a history of collaboration with the Agency to support flood prevention and alleviation schemes, for example at St Helen's Mill on the River Ock in Abingdon where a protecting wall was funded by the council and constructed by the Agency in 2017.
- 276. Following local flooding in December 2020 / January 2021 the council formally resolved on 10 February 2021 to note "the excellent partnership work between this council, the Agency and other partners on the OFAS which will protect South Hinksey, Kennington and North Hinksey as well as Oxford City once built."

### Local Plan

277. The scheme is explicitly referenced in the Vale's adopted Local Plan 2031 (Part 2) as an example of the council's commitment to working with their partners to ensure proper sustainable planning can be achieved across administrative boundaries. (Paragraph 1.27 of Local Plan 2031 (Part 2), adopted October 2019. Page 284 of core document CD4.3b.)

#### **Construction**

- 278. They recognise that there is expected to be some disruption for local residents during the construction of the scheme.
- 279. The council's approach has been to work with the Agency to plan to minimise shortterm disruption and longer term environmental impacts as far as possible.

### **Conclusion**

280. The council has a long and consistent record of supporting the OFAS, which they believe will bring significant benefit to residents and businesses both in their district and in the city of Oxford.

### Oxford Flood Alliance Steering Group – Adrian Porter (SUP 02/01)

- 281. By way of providing his justification for supporting OFAS, Mr Porter shared his personal experience of flooding and explained how his relationship with flooding has evolved through a desire to help his local community as well as the wider Oxford area.
- 282. Mr Porter is a father and husband of a family that has had direct experience of flooding and as a member of the Oxford Flood Alliance steering group. He also is an

active and passionate member of the community of South Hinksey, one of the most vulnerable in Oxford, that experienced fluvial flooding in 2001, 2003, 2007, 2010, 2012, 2013, 2014, 2019, 2021 and 2023.

- 283. His first and worst experience was in summer 2007, in the event that highlighted for so many communities how woefully unprepared we were as a nation for the weather we now have to accept is increasingly normal.
- 284. He watched the rising water with dread, as it pushed forward inch by inch over several days. Last thing at night, as late as he could manage, he would check where the front line was, and dash down at the crack of dawn to see how much it had moved. In between he'd lie awake praying it would recede, but also thinking about what he could or should do to hold back the water.
- 285. He bought bags of instant-set concrete and created dams across the gateway and drive-way entrances. Seals weren't perfect, but with the aid of a dustpan he could bail out the water and keep the rising tide at bay.
- 286. Eventually the water did start to recede. The water pulled back from the dam and withdrew into the road. With no need to bail, and thinking he had won the concrete dams were removed.
- 287. However, there was a second peak on the way. He didn't recall how long it was before the water levels re-commenced their advance, but it was probably only a respite of 24 to 48 hours. And by this time, he'd had a warning that the second peak was going to be bigger. Back went the dams. As the water depth increased so the rate of seepage increased. It was now creeping under the paving stones of the path as well and he was having to bail continuously.
- 288. And then his wife told him she'd seen water in the fire-place inside the house. And he knew he'd lost, as this was groundwater. It was now rising through the floor of his home and there really was nothing left to do. Fighting back 8 inches of surface water in the road is utterly pointless when water is already rising behind the defences.
- 289. That night is forever seared into his memory as the worst of his life. Lying in bed with his wife, pregnant and with a 15-month daughter sleeping in the other room, as water trickled down the half-step into the sitting room, and there was nothing he could do to prevent it. Responding to a crash from downstairs he found that the chip-board sub-floor, no longer held down by the carpet which he had removed, was starting to float. Its buoyancy was enough to lift and topple the sofa, table and other effects they had raised off the floor on wooden blocks. They scrambled to get everything upstairs or on solid items that wouldn't be moved, such as the kitchen work surface. Later, he lay in bed and cried. The water throughout the ground floor of the house was over the depth of wellie-boots. Anything that couldn't be moved was ruined and the house was uninhabitable.
- 290. The insurance payout was over £70,000 and he successfully argued for a cash settlement, which gave him the freedom to spend the money in an attempt to meet the only goal that mattered: to never flood again. He partnered with a couple of other impacted properties in the village and secured the services of first a flood-design consultant and then a local contracting firm who together provided them with a solution. The principle was the same as that adopted for water-proofing basements of properties in London and other major cities.
- 291. In January 2014 the system was properly tested. Water depths at the exterior of the property reached 43cm, significantly in excess of that seen in 2007. And yet this time

he was able to keep the carpet and furnishings in place, had minimal disruption to his working and family life and was able to live in the property throughout.

- 292. Over the next few flood events, he gradually adopted the role of flood-coordinator, taking on much of the coordination and disseminating information to the people in the village that needed it or could help. It was then that he joined the Oxford Flood Alliance. It allowed him to combine his knowledge with that of other impassioned and committed individuals and widen his contribution further, he has looked at the impact of low flows in the river Thames, the contribution to flood depths from the backwater effect on the River Cherwell and contributed to research on water quality through monitoring nitrate and phosphate levels in local channels.
- 293. His wider conversations highlighted the fact that no one had really looked at how floods evolved in South Hinksey, and he was in a good position to help address that data gap. He started to ground-truth the floods, looking at depths and flows over time, and shared the data with the Agency, knowing that this would help them and the community respond to future events. This was the start of a long term relationship with the Agency, which has been generally positive, but two events are worth sharing here:
  - 2012 Flood

With water once again lapping at the kerb stones in Manor Road, he made his usual call to the Agency seeking guidance on what the likely flood peak would be. This helped to gauge whether and how they needed to respond as a community and how long they needed to be prepared for. The phone kept ringing and was eventually answered by someone who just happened to be passing the room. No one had considered South Hinksey might be at risk, certainly no one was aware that they were close to flooding and definitely no one was ready to give them an answer. South Hinksey wasn't even on the map. The community were genuinely on their own. He had no choice but to make his role much more prominent: lobbying MPs, councillors and starting to properly leverage links within the Agency. South Hinksey was not going to be forgotten again.

• 2014 Flood

By this time relations had definitely improved. He was sharing insight and data about local flood events with the Agency and had a good relationship with VoWHDC as well as the Fire Service and was campaigning hard for all the help he could get for the community. This was just before the third flood the village endured in quick succession. In the middle of February, he received a call from the Agency to say that Gold Command were going to come to their aid with pumps, concrete barriers & sandbags, together with troops & equipment from Dalton Barracks to help with the deployment. This was an incredible moment for them as a community, coming when they were all exhausted from the two previous events, and demonstrated that they had come a long way from 2012 – South Hinksey was now definitely on the map.

- 294. They will never get a permanent flood defence barrier unless it is part of a larger, whole Oxford scheme and having watched, learnt about, understood and influenced OFAS with his colleagues in the Oxford Flood Alliance, he firmly believes that is the best scheme for Oxford and for South Hinksey.
- 295. The primary concern regarding OFAS for South Hinksey is that of the compound location and its associated noise, traffic and lighting disruption. This has a particular impact on those properties at the top end of Manor Road, none of whom are in the 1% AEP flood risk area. Following the final site visit and explanation, most residents seemed accepting of the position, including positive statements such as "the Agency"

have done 90% of what we've asked". One of the residents expressed concern about the way the Agency had been treated throughout the negotiation process.

- 296. He absolutely accepts there are some in the community who do not support OFAS, but he wants people to be free to draw their own conclusions from the available evidence. Unfortunately, there have been individuals within South Hinksey who were stifling debate and attempting to exert undue influence, which was brought to his attention by residents concerned about tactics used.
- 297. This came to a head in April 2022 when, at a public meeting intended to shape the official response from the Parish Council, only an incredibly negative, anti-OFAS view was put forward. He stood up and publicly challenged the two Parish Councillors who were chairing the meeting and sent a strongly worded message to the community immediately afterwards. He was not demanding everyone should be in favour of OFAS but did seek balance in the arguments so that people could genuinely make up their own minds, and equally he believed that the majority of the community were positive about the scheme.
- 298. Following his well-publicised outburst, he received written or verbal feedback in support of his comments from 31 people representing 27 households. Many, though not all, also expressed support for the scheme itself. He believes that debate in the community is still stifled. There is little or no mention within local social media, and he suspects that various factions have gone underground. This is damaging to people who genuinely want to find out more and who are still frightened of asking questions, but equally, he still believes there is a silent majority who are broadly in favour of OFAS. He does get some questions posed directly to him which he tries to answer in an honest and balanced way, albeit from a position of supporting OFAS.
- 299. He has spent 16 years learning how water moves in and through South Hinksey. During every flood, he is continuously observing and feeding the information into Agency discussions and has a direct impact on the operational response and messaging. Only sometimes does it result in major mobilisation and barrier deployment, but every time since 2014, it has meant homes have stayed dry.
- 300. It is hugely time-consuming, but absolutely necessary, as he never wants anyone to have to go through what his family endured in 2007 and he wants to give people confidence that they will never have to.
- 301. OFAS is the solution that will properly reduce the threat of flooding to dozens of families in South Hinksey and thousands of people across Oxford, as well as easing their underlying anxiety every time there is heavy rain. There have to be compromises to get large infrastructure projects delivered, but OFAS strikes the right balance between protection, predictability and cost, and will, he believes, provide a long-term benefit to the natural environment of the area, not just the built environment.
- 302. Oxford is a city that already has a chronic flood problem, which is only going to get worse with the increasing prevalence of more extreme weather events. Doing nothing is not an option, and OFAS is the right solution.

## Oxford Flood Alliance Steering Group – John Mastroddi (SUP 02/02)

303. He has lived in Kennington since 1980 but has worked on the rivers since 1964. In1984 he was involved in a public inquiry that centred around flooding in Kennington. A

planning application lodged by OxCoCo claimed that land north of the village did not flood. Yet the residents disagreed.

- 304. Thames Water, the water authority at the time, based its flood levels on records from the floods of 1947 that supported the application. After some research an aerial photograph of the Kennington floods at the time was discovered. He contacted the cartography department at Oxford Polytechnic, as Brookes University was known at the time. As an exercise some of the students surveyed landmarks in the photograph to establish the water levels. They found the flood was about two feet (0.6m) higher than Thames Water's figures. Thames Water accepted these new levels and amended the records.
- 305. He conducted further research in the Redbridge/Kennington area during periods of heavy rain from the late Eighties to the present day to find that the water levels were consistently higher on the western side of the railway line than the eastern side. This suggested that the railway line was acting as a dam, impeding the flow of the flood water. More culverts are needed to prevent the build up of flood water.
- 306. In December 2000 Oxford suffered a severe flood. Five homes in Kennington were inundated and the outbuildings at about 40 properties were damaged by the water. Kennington Road was closed and Kennington residents worked through the day and night to prevent drivers pushing through the inundation, causing waves that would damage the neighbouring houses. They parked cars across the road to avoid further devastation. The railway line to London was also closed. The main obstruction to the flow of water was a concrete wall built across the South Hinksey drain at Munday's Underbridge, the last culvert that lets the flood water pass under the railway. Further enquiries disclosed that the wall had been built to prevent flood water believed to be coming from the Thames. It was simply an obstruction, however.
- 307. Pressure was put on Network Rail, the landowner, and the VoWHDC to remove the wall. But to no avail.
- 308. Kennington suffered another major flood three years later, in December 2003. He had learnt from experience where to place the sandbags and pumps. Manhole covers in the road were lifted to let the flood water flow through the drainage system. One house was damaged, and many properties were scarred by the flooding. Kennington Road was closed again as was the railway, resulting in million-pound fines for Network Rail.
- 309. Further pressure was put on the relevant authorities who relented to allow a series of short-term measures, including an opening in the wall. Two one-way valves were fitted on Kennington Road and a low bridge over Hinksey drain was removed.
- 310. These steps, however, failed to resolve the main problem. A study of the 1947 aerial photograph showed that the flood channel had become narrower at Redbridge. A combination of the railway and the widening of the A34 to four lanes gave the water a reduced avenue to escape. To make matters even worse, the Old Abingdon Road had been raised. Low-lying land in the Redbridge area had been filled with household waste in the sixties and the A423 flyover was built with no provision for flood water. Redbridge had become a bottleneck.
- 311. In July 2007 the region suffered another inundation. The previous measures helped Kennington avoid some misery, but the rest of Oxford suffered.
- 312. The Oxford Flood Alliance (OFA) was formed by residents concerned at the frequency of these damaging floods. They tried to identify the danger points and work

with the relevant authorities to remove any obstructions. In 2011 he worked with Thames Water to help them understand and identify the problems. With the help of other authorities they removed the concrete wall and cleared a channel beneath Munday's Underbridge. This required properties at 1, 3 and 5 Kennington Road to give up some land in their back gardens so a wider channel could be built to improve the flow at Munday's Underbridge. During the floods in 2014 no houses were flooded internally, though several gardens were inundated through groundwater while Kennington Road and the railway line to London remained open.

- 313. He continues to monitor and record the water levels following the modifications, including the culverts fitted at Cold Harbour in 2016 to compensate for the raising of the railway line at Redbridge. He stated that Oxford's flooding problems stem not from the heavy rain but from the obstructions blocking the flood corridor. During the floods of 1947 the water could flow unobstructed from Botley to Kennington and beyond. Since then, flood prevention has gone backwards.
- 314. All the measures that have been discussed may now appear obvious. But at the time none of this was known to the authorities. While these interventions have helped to reduce risk in lower order events, they know they aren't enough to deal with a larger scale flood. With climate change, the risk of a big event happening is increasing.
- 315. The Agency's OFAS proposal has come about only after many hours spent walking along streams and across fields, trawling through documents and photographs to put together a jigsaw so that they now know how the floods come to threaten residents, businesses and transport routes. The Agency's technical and computing skills have designed a flood channel that should solve a problem that has bedevilled Oxford, causing millions of pounds of damage and lost business. The Agency should be allowed to get on and finish the project.

## Oxford Flood Alliance Steering Group – Simon Collings (SUP 02/03)

- 316. He is a founder member of the Oxford Flood Alliance which is a partner of the OFAS. This representation focuses on his experiences of flooding, on aspects of the work of the Oxford Flood Alliance, and on the group's interest in environmental issues.
- 317. He has lived in Oxford since 1975 and he and his partner moved to Osney in 1999. There had been no significant flooding on the island for decades. This changed in December 2000 when rising river levels led to a Severe Flood Warning and the streets around his property filled with water. He moved everything he could upstairs. At the height of the flood event the Fire Service pumped flood water out of the road, and this prevented it entering their houses. The whole event lasted around ten days, with normal life and work totally disrupted. He suffered illness, sleep deprivation and constant anxiety as the water rose relentlessly around his house. The experience was repeated in January 2003. River levels have been high on numerous occasions since then. The two biggest events were in 2007 and 2014.
- 318. In July 2007, after a day of freak rain, the community were told a 'surge' of water was coming downstream. He waited for four days, watching river levels rise and the roads fill with water. Accessing his house, even in wellies, was tricky. He again moved furniture upstairs, raised large items above floor level, and sandbagged and sealed doors. Flood events are accompanied by a great deal of uncertainty, rumours, misinformation and speculation. There was a heavy media presence, with national TV journalists wanting to film, hourly pressure from the police to evacuate, and a stream of
flood tourists. Four days after the rain, water began to rise through the floorboards, filling his ground floor to a depth of a few centimetres. It stayed for three days.

- 319. Several neighbouring families moved out to rented accommodation but he stayed put, camping upstairs. He tried to make his house as habitable as he could, mopping up, chiselling out the kitchen floor which had disintegrated in the flood, cleaning and drying. A relative hired dehumidifiers in another part of the country for him, as there was a shortage in flooded areas. He made an insurance claim. He had no idea that it would take a year for his house to return to anything like normal. All of this was on top of ordinary daily stress.
- 320. In January 2014 he came close to going through all this again. Within three days of heavy rain and a Flood Warning he could see water rising in the space beneath his floor. He was waiting for delivery of pumps which had been promised by the Agency and City Council, along with flood gates, to 30 properties on Osney following the 2007 flooding.
- 321. He managed to get a City Council officer to deliver a sample pump to his house one evening when it became clear water would be in his house within 24 hours. He had to wade to Botley to buy a length of hose. He chiselled away part of a joist to get the pump into the underfloor void. To add to the challenge he lost power in the house and had to find an emergency electrician. By the time he was able to start the pump, water was just a few centimetres below the suspended floor, the garden was full of water and it was starting to appear in the kitchen. The pump made an immediate difference to water levels in his house and his neighbours'. He was able to get the Council to deliver more pumps to neighbours in the street the following morning, and to keep the water out of their houses. Even then he could not use his toilet and had rely on those at the station. Because of various flood relief measures and pumps put in place after the 2007 event the streets on Osney were dry. People passing were puzzled to see water fountaining out of his front windows and doors.
- 322. At this point the river downstream from Osney lock was peaking at 1 cm higher than the July 2007 level. They escaped flooding by the skin of their teeth.
- 323. He is prepared for future flood events. He has a pump, flood gates, air-brick covers and a flood kit. He has bricks, pallets and plastic containers stored ready to protect furniture and appliances he can't move upstairs. He is practised in evaluating rising river levels across the catchment. But he knows that in an event any larger than 2014 the defences he has will not be enough and homes will be flooded. A difference of a few centimetres in levels in a flood model may seem trivial but it actually determines whether properties flood or not, and to what depth. The community live with this constant fear. Any sustained period of rain causes anxiety.
- 324. On a wider scale, flooding has closed Botley Road on multiple occasions, with a huge impact on local people. It becomes difficult or impossible for people to get to work and school, it affects those who are reliant on care visits and home deliveries or needing to get to health appointments. It is disastrous for local businesses. Abingdon Road is usually also impacted, as well as the railway line to London, cutting off three main routes into the city. In 2014 the son of a friend of his who had come to Oxford by train to study in the Bodleian was stranded when the railway line flooded that afternoon and there was no public transport home to Newbury.
- 325. The impacts of flooding on mental health are severe. He has had to counsel a young single mother in social housing, terrified about how to cope, bail out the house of a neighbour who was away on business, and witness the collapse in mental health

suffered by a friend whose house was badly damaged by flooding. Mental stress is acute during flood events but persists through the long months of recovery. This is why they need the flood scheme.

- 326. He has talked a lot about flooding, but he wants to finish by adding something about the environment and biodiversity gain. He knows this is a challenging area and that there will be losses as well as gains. The Oxford Flood Alliance has from the beginning wanted the flood scheme to benefit wildlife and wants to ensure there is ongoing accountability for delivering BNG. Early in the development of the scheme the Group argued for a local environmental partner to be contracted post- construction to manage the biodiversity aspects of the scheme. They would receive funding from the Agency to deliver the OFAS-specific targets but would be free to raise additional funding and enter into partnerships with other bodies to engage in initiatives over and above the core OFAS elements. The environmental partner would be able to forge links with other groups, landowners and farmers in the surrounding area actively working to improve biodiversity, to share knowledge and foster collaboration.
- 327. The Group also argued for the creation of a local accountability mechanism, a body formed of environmental groups and experts in the Oxford area who would receive annual reports on progress against targets and who would comment and give advice on these. There is a need to make sure the scheme delivers on biodiversity gain, and it is believed this kind of mechanism will help. Both of these ideas have been embraced by the Agency and are referenced in planning documents.
- 328. The Group would like to see the scheme create possibilities for local residents to become actively involved in protecting and enhancing biodiversity in the floodplain. To give a concrete example of how this might work, he has been recording butterfly species present in the scheme area, having discovered last year that data on butterflies in the West Oxford floodplain were scarce. He has posted around 360 records covering 21 species, on iRecord, the national biodiversity recording system, where they have been verified by experts.
- 329. It has long been clear to the Group that there is no perfect solution and that the scheme design will have to balance a range of competing factors. He has had to accept that houses in the street where he lives cannot be guaranteed protection to a 1%AEP level at an acceptable cost financially and environmentally. Residents of other areas have also had to accept this. He would be loathed to see this protection reduced, which is what would happen in a 'no channel' scenario. A scheme which left the most vulnerable households in the city with little defence against flooding, even if it brought other benefits, for them would represent a huge failure.
- 330. The Group believes the scheme can deliver BNG over time, especially if local groups engage with it. Oxford is very lucky to have funding allocated for this scheme and the opportunity to protect the city from flooding. It took a lot of work to get to this point. The community needs the flood scheme and needs it to progress quickly before another big flood happens.

# Oxford Flood Alliance Steering Group – Nick Hills (SUP 02/04)

331. When he moved to Earl Street in 1991 it wasn't unusual for the fields just to the south of the streets off the Botley Road to fill up with water most winters, along with the void beneath his suspended wooden floor.

#### Oxford Flood Alleviation Scheme Report to the Secretary of State - ENV/3326453

- 332. Then, in 2000, things changed. Alterations to the built environment combined with the effects of climate change caused water levels to rise more than in previous years. The fields were full to capacity and the water that had been under the floor was now above it. It was only a few inches deep, but it was enough to destroy the suspended oak floor, which was replaced, paid for by the insurers. About a third of the houses in the street were flooded in that event. It was thought it was a one-off.
- 333. However, in 2003 it happened again; the flood developed in exactly the same way, as the rising levels were caused by water from rainfall in the Cotswolds travelling southwards along Oxford's western corridor. Flood flow was obstructed in the Redbridge area south of them by a combination of topography and man-made structures. The two-year-old oak floor was destroyed by water a few inches deeper than before. This time about half of the street was flooded. At about this time people in different areas of the city started to talk to each other about what could and should be done and letters were being written to the local press and councillors.
- 334. Both of the floods in 2000 and 2003 occurred at the same time of year, over Christmas and the New Year. He was surprised, therefore, when another event started to develop in mid-summer in 2007, culminating in the widespread floods across the south and southwest of the UK and the overtopping of the temporary defences that had been erected by the County and City Councils just to the north of them at the rear of the properties in Bullstake Close. The surge of water crossed the Botley Road, turning Earl Street into a river which entered every house in the street. The water in his house went from a few inches in previous floods to half a metre. The static and mobile pumps installed and supplied by the Agency and the City Council were overwhelmed.
- 335. In the autumn of 2013, during a discussion with the Agency on further possible measures, it became clear that there were limited gains to be had from continuing the approach of pumps and culverts. The Oxford Flood Alliance looked at ten further options to present to the Agency. These were analysed in detail and the most comprehensive of them became OFAS. Worsening assumptions about the impact of climate change on flood risk meant the cost–benefit analysis of a larger scheme now looked positive. The Group's efforts and contributions were recognised and it joined the OFAS partnership in a non-executive capacity.
- 336. The Group has acted as a bridge between the project and the wider community, channelling ideas into the project, listening to concerns and making sure people get a hearing. The Group has attended many public consultations organised by the project and sat in on meetings between the Agency and objectors. The Group has also investigated various options themselves and taken advice from external experts. In 2018, for example, the Group organised a seminar with the University School of Geography on Natural Flood Management techniques and on the potential for storing flood water further up the catchment.
- 337. Whilst he and his neighbours feel more secure due to the local protection measures now in place, the psychological effects and anxieties remain whenever the signs of another event become apparent. The effectiveness of these measures will reduce over time due to climate change, and the community remain vulnerable to larger scale flood events. OFAS will go a long way towards alleviating these fears.

# Oxford City Council – Cllr Nigel Chapman (Sup 03/01)

338. OxCiCo is a partner in the OFAS and strongly supports its implementation. The Council is the largest contributor of land to the scheme and has also contributed

financially. It has been working actively, as a partner, with the Agency for the last 5 years and periodically since 2014.

- 339. Oxford is a thriving city, being home to around 4,700 businesses, providing 135,000 jobs and attracting approximately 7 million visitors in a typical year. It has the second fastest-growing economy of all UK cities.
- 340. Oxford has a long history of flooding. Several recent floods have caused property damage to homes and businesses and closed the railway and major roads bringing the city to a standstill. These floods have also affected the sewerage system, electricity sub-stations and broadband communications causing further disruption to residents and businesses of the city.
- 341. The floods of recent decades have been nowhere near the size and impact of the major flood that hit Oxford in 1947. A reported 3,000 homes were affected, at that time. Many houses became too flooded to occupy, with residents being rescued by boats and householders living in terrible conditions. The flood waters lasted for weeks, and the city was effectively turned into a giant lake.
- 342. In coming decades, it is expected to see major floods like this more often. As global heating drives more extreme rainfall, floods are expected to become more frequent and more severe. Oxford needs a long-term way to manage this increasing flood risk. The OFAS is designed to cope with floods of the major scale seen in Oxford in 1947.
- 343. The modelling that has been carried out in the design development of this scheme has shown that there are currently, in the do-nothing scenario, approximately 2,195 properties (residential and non-residential) at risk from internal flooding in a major flood that has a 1% chance of happening each year. However, with the effects of climate change, the scale and frequency of flooding and disruption to the city is expected to increase. Flooding models have shown that, if they do not act, the impacts of climate change mean that in just over 50 years over 5,600 properties would be at risk of flooding from the same flood event. A flood alleviation scheme is urgently required.
- 344. The OFAS is designed to reduce the risk of flooding to all properties in Oxford currently at risk of flooding from the river Thames. It will reduce the likelihood of floods in built-up areas of the city and will direct water to the existing floodplain. In doing so, the scheme allows the residents and businesses to go about their daily activities without fear of the damage and disruption of flooding. It will keep the transport networks moving (principally Botley Road, Abingdon Road and the railway line) and Oxford open for business, benefitting everybody that lives, works and visits the city. It is estimated that having the scheme in place will save £1.4billion over its lifetime, by reducing flood damage and impact on the area.
- 345. In addition to the reduced risk of flooding to the city, the scheme will have environmental benefits, too. Flooding causes carbon emissions due to direct damage and disruption, as well as the replacement and refurbishment of properties, vehicles, and belongings. Once the OFAS is in place, it will prevent the production of far more carbon emissions in the long term than are generated through its construction and maintenance. The scheme will also create a new wet wildlife corridor to the West of Oxford which will provide an opportunity for enhanced habitat connectivity, linking new sites with existing. The proposed landscape features such as pools and backwaters will further help increase biodiversity, and the compensation measures have been well thought through, with 16 hectares of lowland meadow habitat creation in the surrounding landscape. By way of compensation this is a 12 times replacement of the

1.3 hectare lost to the construction of the scheme. This will provide the community with a cherished asset which will benefit people and wildlife for generations to come.

346. The Council is confident that the scheme, as presented, is the best option for reducing flood risk in Oxford, providing a sustainable long-term solution to the city to manage flooding in Oxford for the next 100 years.

# Robert Price (Sup 04)

- 347. From May 1983 to May 2018, Mr Price was a City Councillor representing South Oxford (St Ebbes, Grandpont, New Hinksey and Coldharbour/Weirs Lane), and from 2008-18 he was the Leader of the City Council. In that capacity, and as a member of the Oxfordshire Local Enterprise Partnership, he was closely involved until his retirement, with the inception and development of the OFAS.
- 348. As a local councillor and resident, he has experienced the devastating impact of flooding across the local area on several occasions, most notably in the 2003, 2007 and 2012 events. In 2012, as the Council Leader, he was closely involved with the emergency services, the Agency, and the City and County Councils in managing the response to flooding in both West Oxford and South Oxford. This involved the evacuation and temporary rehousing of residents from Bullstake Close and other streets off the Botley Road, and the subsequent refurbishment of the local authority owned homes that had been affected. At the southern end of the Abingdon Road, close to Canning Crescent and Gordon Woodward Way, the Oxfordshire Fire and Rescue Service deployed a high-pressure pump to divert the flood water away from the properties on the eastern side of Abingdon Road.
- 349. In all these crisis situations, the impact on local residents in both South and West Oxford has been devastating. The psychological effect of the uncertainty from day to day, and hour to hour, about whether the flood water would continue to rise should not be underestimated. In many parts of the area, residents whose homes were constructed with voids beneath the floorboards where their electricity supply is located, lost the ability to light their homes; and in many homes it became impossible to flush toilets because the foul water sewers were surcharged with flood water. For others, the ability to get out of the area along the flooded main roads to work or school, or for medical appointments, was a major concern. On each occasion, the City Council Direct Services staff worked round the clock to provide sandbags for householders, to rescue elderly people and take them to a place of safety and to install signage and protective barriers to prevent people from accessing areas of danger.
- 350. The installation by the Agency and the City Council of temporary flood barriers along the path at the edge of Hinksey Park and Lake has had a significant beneficial impact in recent flood events on the extent of flooding in Vicarage Lane, Lake St and Vicarage Road. In earlier events, flood waters from Hinksey Lake and the Eastwyke Stream had threatened both New Hinksey Primary School and the electricity sub station at the western end of Vicarage Road. Many local residents, councillors and the MP for Oxford East were involved in protecting the substation on the occasion of the greatest threat in 2007. However, when the flood barriers are in place, the effect is to divert the water to the south, and to some degree increasing the risk to the homes in Wytham Street and adjoining streets.
- 351. In all the major events in this century, the southern part of the South Oxford area has been threatened by a 'pincer' effect; flood water from the Thames mainstream flows

westwards over the fields and allotments into the Abingdon Road and Weirs Lane, and flood water from the Hinksey Stream and further north from the Seacourt Stream flows eastwards to meet the water from the main stream. The vulnerability of the Abingdon Road to flooding has had a significant impact on access to the city centre and to local business activity.

- 352. Together with the current City and County Councillors for the South Oxford area, he calls round to speak to residents on a weekly basis during most months of the year to ask about local concerns and issues. There is a widespread level of concern about the possibility of another major flooding event in the near future, particularly as the effects of climate change on the UK's weather seem to include periods of heavy rain, especially in the winter months. The importance of implementing a long-term flood alleviation scheme is widely supported. The Agency have made extensive efforts to explain the objectives of the proposed scheme, and to tackle the concerns that have been raised about the impact of the scheme on the biodiversity and ecology of the land between the railway line and the A34. The detailed proposals in the scheme documentation present a clear picture of the environmental benefits that are incorporated in the planning of the project, but there remains a measure of scepticism amongst some local residents.
- 353. It is hoped that this submission provides a clear summary of the substantial level of concern and damage that the flooding events in South and West Oxford have caused in recent years, and why an effective alleviation scheme is so important to increase the level of flood protection for people and properties in the coming decades. His own view, shared by many people locally, is that the proposed scheme will also provide long term environmental and ecological benefits and improved access to the area in which the channel will be created.

# THE STATUTORY OBJECTORS (Who presented evidence at the Inquiry)

# Oxford Preservation Trust (OX 009S)

354. The material points taken from the closing submissions are as follows:

# Introduction

- 355. The Trust has not taken lightly the prospect of objecting to this Order. It accepts the need to address the physical and human effects of flooding in Oxford. It supports the principle of flood alleviation that the scheme seeks to secure.
- 356. However at the end of this Inquiry it is not persuaded that the Agency has promoted a scheme that:
  - needs to cause the direct loss of nationally important ecological interests at Hinksey Meadow;
  - suitably compensates for that loss;
  - adequately assesses the even greater indirect harm that would be caused to those interests; or
  - satisfactorily mitigates against that harm.

- 357. The abiding impression from the evidence is of the Agency deciding to press on with the Order, after peremptorily dismissing an alternative that could avoid the harm, and before doing enough work to analyse and address the harms it recognises will be caused.
- 358. The Trust therefore opposes the scheme in its current form, and until these shortcomings are rectified. There is no compelling case in the public interest to confirm this Order.

### Hinksey Meadow and the OPT

- 359. Since its establishment in 1927, as one of the UK's earliest local amenity societies, the Trust has a long and distinguished history of protecting the amenity, heritage and natural interest of Oxford. It purchased Hinksey Meadow in 1997 to further these objectives and it manages the site as a traditional hay meadow in an environmentally sensitive way, within its wider ownership and management of c. 1,000 acres in and around the city.
- 360. The land at Hinksey Meadow that would be compulsorily acquired would be used to excavate and maintain a length of second stage channel to take water from Seacourt Stream in times of high water flows. A shorter section of narrow and deeper first stage channel, intended to be permanently wet, is proposed at the southern end of the Meadow next to Willow Walk.
- 361. In the material before the Inquiry the effects of this scheme on Hinksey Meadow are described, somewhat reductively, as effects on MG4 grassland. However the use of the bald shorthand "MG4" risks understating the true importance of this land, along with the depth of the concerns that have led the Trust to appear here.
- 362. Traditional flood plain meadows such as Hinksey Meadow are an evocative, iconic and culturally significant land use that has become vanishingly rare in modern Britain. When we picture in our minds the beauty of a flower-rich meadow in summer, we are contemplating a traditional hay meadow such as Hinksey Meadow.
- 363. But this ancient, traditionally-managed and species-rich meadow is not just part of our national cultural heritage. It holds extremely high biodiversity value. What makes it so scarce and valuable is the delicate balance of soil and hydrogeology that supports scarce plant communities; communities which sustain particular rarities within them.
- 364. MG4 is a subset of what remains of our unimproved neutral grassland, 97% of which has been lost since 1930.<sup>403</sup> It is probably our most celebrated plant community within floodplain meadows. Within the MG4 categorisation, the MG4a sub-community that covers part of the Meadow is even rarer Hinksey Meadow alone represents up to 4% of what remains nationally depending on its precisely measured extent.<sup>404</sup>
- 365. Even MG4 as a general classification is nationally, and internationally, recognised as being of very high nature conservation importance. It is listed in the Habitats Directive as a grassland whose conservation requires designation (as reflected in the Oxford Meadows SAC deliberately avoided by this scheme). Most MG4 sites are designated

<sup>&</sup>lt;sup>403</sup> Woodfield proof OX009S/1a p. 8 fn 3. The proof explains the value of MG4, MG4a, MG15 and Hinksey Meadow between para.s 3.1-3.5.1 on pdf pp. 13-29. Hereafter all document references are to the pdf page number when viewed electronically, and are presented in the form [paragraph number/page number] or where necessary [page number]. <sup>404</sup> Woodfield proof 3.3.1/21.

at domestic level as SSSIs (including Iffley Meadows local to Oxford – again deliberately avoided by this scheme). The vegetation at Hinksey Meadow is generally of an equivalent quality, in terms of plant diversity, to the MG4 resource present in designated sites such as the Oxford Meadows SAC and Iffley Meadows SSSI.<sup>405</sup>

- 366. Hinksey Meadow is also an example of the 'priority' lowland meadow habitat as originally defined by the UK Biodiversity Action Plan and now listed as a habitat of principal importance under the Natural Environment and Rural Communities Act 2006, in association with the duty to conserve and enhance biodiversity that is imposed by that Act.
- 367. The Meadow also includes a grassland type known as MG15, a community derived from the recent splitting of MG4 into further subcommunities. Here it represents the transition from the meadow to the field periphery and other communities that are more clearly influenced by riparian conditions. The MG15 fluctuates with more readily distinguishable MG4 and may shift in condition<sup>406</sup> such that proportions of MG4 to MG15 may increase. MG15 also falls within the range of grassland communities that are identified as holding high conservation value in the guidelines for SSSI selection and may be selected for SSSI status.
- 368. Floodplain grasslands such as Hinksey Meadow are not only rare; they are also fragile. Their value arises from the slow accumulation over time of living organisms and the relationships they develop with each other, sometimes evolving over many hundreds of years. This is why these communities are treated (as agreed in this case)<sup>407</sup> as "irreplaceable", just as ancient woodlands are recognised to require centuries of continuity to exemplify this character. Key to assessing the fragility and vulnerability of such communities is an understanding of the relationship between the grassland and the groundwater regime that feeds it.
- 369. The communities at Hinksey Meadow are supported by a highly complex and sensitive interplay of rainfall, recharge, groundwater elevations, surface water elevations, drainage, topography, soil type, soil structure and geology. Of great importance to their survival is an aerated root zone during the growing season and a shallow water table which provides an adequate water supply through spring and early summer. The tolerance limits of MG4 to groundwater derogation (or excessive inundation) are markedly narrow during these months. Changes to local hydrology can cause a drawdown in groundwater, especially during the spring growing season, provoking a devastating and rapid shift to drier, and much more common, less valuable grassland types. The range in optimal elevations in the water table which avoid these effects may be as small as 20 cm at the most sensitive time of the year.
- 370. The significance and vulnerability of Hinksey Meadow means that this case is not about an easy balancing exercise, struck inexorably in favour of reducing the more immediately apparent effects of flooding in Oxford. The Agency at least recognises in its evidence that the MG4 grassland is of such value that the direct loss it acknowledges could not be sanctioned on its own.<sup>408</sup> However it has not done enough to demonstrate

<sup>&</sup>lt;sup>405</sup> Ecology SoCG INQ/23 2c/2.

<sup>&</sup>lt;sup>406</sup> Op. cit., 4a/2.

<sup>&</sup>lt;sup>407</sup> Op. cit., 2d/2.

<sup>&</sup>lt;sup>408</sup> Scholey proof EA/9a 5.11/12. References to the oral evidence of Mr Scholey are to the evidence he gave on 23 November 2023.

it properly understands the full extent of the impacts to Hinksey Meadow, or what it needs to do to protect it.

#### Direct loss of grassland

- 371. There is no dispute that the scheme would cause the direct loss of 1.33 ha of MG4, a figure which may well underestimate the true harm, given the prospect of flux between MG15 and MG4 and the integral role that MG15 itself plays in the survival of the Meadow. There would be an additional loss of MG15 included in the balance of a total land take that is estimated at 3.2 ha (the Agency) and 3.75 ha (Trust).<sup>409</sup>
- 372. This direct loss on its own is conceded by the Agency to amount to a major adverse effect of the scheme, having regard to the national importance of this habitat.
- 373. It is misconceived to rely on the potential to compensate for this loss, by a combination of translocating MG4 and creating it elsewhere, for reasons that are set out later.

#### Indirect loss of grassland

- 374. The Agency also fails to fully assess the risk of indirect effects from the scheme on the remaining grassland (the MG4 totals c. 8.8 ha).<sup>410</sup> It accepts that without mitigation, these effects would also be of major adverse significance, again having regard to the national importance of this grassland.<sup>411</sup> But that conclusion is based on a fundamentally inadequate assessment, which has obvious and serious implications for any attempt to rely on mitigation to address the potential harm. The reliance by the Agency on mitigation to avoid impacts from groundwater derogation has simply not been substantiated.
- 375. As Ms Fraser explained in unsparing detail,<sup>412</sup> the assessment of the scheme is founded on groundwater modelling that is unfit to determine the impacts on the grassland communities of value within Hinksey Meadow. It is important to recall that changes of as little as 20cm may have significant effects on sensitive grassland at particular times of the year, in particular the growing season in the spring and early summer.<sup>413</sup>

#### Baseline

- 376. A major underlying issue with the assessment is that the baseline information on which the model relies is seriously inadequate.
- 377. There is no dispute that the extent to which gravels at the site are overlain by alluvium will have an important effect on groundwater levels there. But borehole data is not available for review.<sup>414</sup> It is agreed that we do not know the thickness of the alluvium or

<sup>&</sup>lt;sup>409</sup> Op. cit., 1d/1.

<sup>&</sup>lt;sup>410</sup> Ecology SoCG 1a/1.

<sup>&</sup>lt;sup>411</sup> CD3.8 p. 214.

<sup>&</sup>lt;sup>412</sup> See her proof OX009S/2a and evidence in chief. Any references to the oral evidence of Ms Fraser are to the evidence she gave on 21 November 2023, which referred to figures produced in INQ/20.

<sup>&</sup>lt;sup>413</sup> Woodfield proof OX009S Figure 2 p. 27.

<sup>&</sup>lt;sup>414</sup> Fraser proof 4.3/13.

the underlying gravel aquifer across the site.<sup>415</sup> But there is no information on how and where variations in either occur.<sup>416</sup>

- 378. Whether groundwater levels in the gravel aquifer are below a layer of alluvium will have an important effect on groundwater levels and drainage within the site.<sup>417</sup> This information is simply not known for this site.<sup>418</sup> It is agreed that, consequently, the baseline material does not indicate what the seasonal variation of groundwater elevations across Hinksey Meadow might be.<sup>419</sup> This is a crucial gap in the evidence.
- 379. It is not clear whether under normal conditions groundwater drains to either or both the Seacourt and Bulstake Streams, or to what extent.<sup>420</sup> The interaction between streams and groundwater in the specific area of Hinksey Meadow is not known;<sup>421</sup> nor is it known whether the stream beds intersect the base of the aquifer.<sup>422</sup>
- 380. All these factors are agreed to have a strong influence on groundwater levels below Hinksey Meadow,<sup>423</sup> but they remain unknown.<sup>424</sup> The only sensible conclusion is that there is no reliable baseline data at the resolution required to carry out a satisfactory assessment of how the scheme may affect the groundwater regime in this location.

#### Model

- 381. This fundamental issue with the paucity of the dataset undermines the reliability of the groundwater model. But there are further structural deficiencies with the model itself.
- 382. It is based on the modelled flows between river and aquifer cells of 20m x 20m across the model domain, representing rivers or streams and the aquifer respectively. Levels of water in the river cells are set artificially by user input, according to the results of the surface water flood model. The river elevation in those cells is not responsive to anything but this user input.<sup>425</sup>
- 383. In reality, however, rivers can be heavily or even entirely controlled by groundwater levels,<sup>426</sup> particularly under dryer conditions.<sup>427</sup> There is local evidence that groundwater levels are in fact not dictated by river conditions during flooding, but are higher than river levels, such that any working assumption of river levels controlling groundwater levels does not necessarily hold.<sup>428</sup>
- 384. The result is that the model has not been built to allow for any replication of this complex interaction it simply does not allow for a "feedback loop" between river and

- <sup>422</sup> Raynor xx.
- <sup>423</sup> Raynor xx.
- <sup>424</sup> Raynor xx.
- <sup>425</sup> Raynor xx.
  <sup>426</sup> Raynor xx.
- <sup>427</sup> Raynor xx.
- <sup>428</sup> Raynor xx.

<sup>&</sup>lt;sup>415</sup> Raynor xx.

<sup>&</sup>lt;sup>416</sup> Raynor xx.

<sup>&</sup>lt;sup>417</sup> Raynor xx.

<sup>&</sup>lt;sup>418</sup> Raynor xx.

<sup>&</sup>lt;sup>419</sup> Raynor xx.

<sup>&</sup>lt;sup>420</sup> Raynor xx.

<sup>&</sup>lt;sup>421</sup> Raynor xx.

groundwater.<sup>429</sup> Local heterogeneity, which can be significant at a site scale, is simply not represented.<sup>430</sup> The alluvium and made ground that overlie the gravel across much of the Thames Valley are not explicitly represented in the model. Field drainage is not represented; nor are the details of any relationship between soil moisture and deeper groundwater levels – a critical component in understanding the potential impacts on MG4 grassland.<sup>431</sup> There is no allowance for local variations in the thickness or permeability of the riverbed sediment.<sup>432</sup> The model does not contain flow budgets for the river cells to allow for an understanding of the extent to which it is distorted by the fixed river cells. This, it was agreed, does not follow good practice.<sup>433</sup>

- 385. These are all fundamental problems with the model which compound the foundational shortcomings in the baseline data. It is no answer for the Agency to claim<sup>434</sup> that flows in the river cells are derived from observations from flow gauges on the Thames, Evenlode, Cherwell and Ray of the Q95 flow we do not know the Q95 flows at Seacourt Stream.<sup>435</sup> We do not know if the Q95 flows used in the model are representative of what is actually going in at Hinksey Meadow.<sup>436</sup> The issue is not just about flows from rivers anyway whatever the flows in the river cells are, it remains the case that the model does not allow for any realistic understanding of the influence from groundwater in low flow situations.
- 386. The calibration of the model is also beset with problems.<sup>437</sup> There is no dispute that target locations<sup>438</sup> close to rivers will tend to show good calibration because of the strong influence that river cells have in that location. However other areas of the model will not reproduce groundwater elevations as well because they are further away from the main influence exercised at that target location.<sup>439</sup> In the case of Hinksey Meadow, there is only one calibration point (OS5) and it is near the river.<sup>440</sup> There is no calibration across the model domain as regards Hinksey Meadow,<sup>441</sup> which is to say that there has been no effective calibration at sufficient points of coverage within the site.
- 387. Even the calibration that has been done at the single calibration point is out by nearly 40cm in the steady state model.<sup>442</sup> Within the inadequate scope of calibration, this is the only measure advanced in the modelling which allows for a comparison between modelled and observed levels. Given that a 20cm change in groundwater levels at certain times of year may be catastrophic for the survival of the MG4 community, this margin of

<sup>436</sup> Raynor xx.

441 Raynor xx.

<sup>429</sup> Raynor xx.

<sup>&</sup>lt;sup>430</sup> Raynor xx.

<sup>&</sup>lt;sup>431</sup> Raynor xx.

<sup>&</sup>lt;sup>432</sup> Raynor xx. To illustrate, see the pink area of confined groundwater, assumed to be confined below a covering layer of alluvium, at Fig. 4.9 of CD3.38a at pdf p. 368. Cf Flood Meadow Partnership *Oxford Flood Alleviation Scheme: assessment of impacts* (CD3.8c at pdf p. 143 section 4a point 4) which describes the soil profile as "variable".

<sup>&</sup>lt;sup>433</sup> Raynor xx.

<sup>&</sup>lt;sup>434</sup> Raynor rebuttal EA/5d 7.8/16.

<sup>&</sup>lt;sup>435</sup> Raynor xx.

<sup>&</sup>lt;sup>437</sup> This looked initially at a steady state model corresponding to the beginning of 2007 flood event and then used elevations from that as a starting point to run a transient model going through that flood event: see CD3.38s 4.1/329.

<sup>&</sup>lt;sup>438</sup> Namely those locations chosen to reproduce groundwater elevations to compare with observed elevations.

 $<sup>^{439}</sup>$  Raynor xx. See eg Fig 4.7c in CD3.38a at p. 365 and Fraser proof Fig. 4 p. 8: PTM1 – illustrates a point further away from the river target points), where the discrepancy between observed and modelled elevations is greater.

<sup>440</sup> See Fig 2.3 CD3.38a p. 354.

<sup>&</sup>lt;sup>442</sup> See OS5 in CD3.38a Fig. 4.6 p. 362.

error is clearly greater than the sensitivity that is required to properly consider the effects on Hinksey Meadow.

- 388. It is no answer for the Agency to contend that this measurement may be different at other times, or that it does not necessarily represent the divergence between the model and observed conditions at all times of the year. That suggestion in truth reveals far more about the flaws in the calibration, for there is no other measure to demonstrate any greater accuracy of the modelling (even in this already unreliably limited location). That measure does not allow for calibration across different times of the year either, which is significant given the nature of the receptor in this case. The result is that absolute predictions cannot be relied upon for accuracy up to this 40 cm measurement. At the scale of a regional model this may not matter, but when considering an ecological system of acute sensitivity such as Hinksey Meadow, it matters a great deal.
- 389. On top of this we also know that even simulated river levels can deviate from observed levels by up to 20cm.<sup>443</sup> This compounds the potential for disparity between the model results and reality vergence.
- 390. There are still more problems with the modelling results.
- 391. Apart from the defective calibration process, two primary model runs took place: a 1in-20-year flood event aimed at assessing impact on groundwater flood risk in the area; and a dry year model purportedly to assess impacts on "ecologically sensitive sites".<sup>444</sup>
- 392. The dry run<sup>445</sup> is based on modelling a normal year 1 to allow the model to stabilise (fixed low river levels Q95 with average monthly recharge) and then year 2 (same Q95 with monthly transient recharge from 2011). However this approach allows no comparison with real data.<sup>446</sup> It is simply not known whether Q95 levels will be the same without or with the scheme.
- 393. The assessment claims that a modelled rise in groundwater level in the dry run, shown at the north western tip of Hinksey Meadow, reflects an "anomaly" in the Q95 river levels. When the fluvial model outputs were turned into a form that was suitable for the groundwater model, some river cells were allocated a stage that was up to 0.25 m too high. This resulted in nearby groundwater levels being simulated as higher than in the observed baseline.<sup>447</sup>
- 394. This is now agreed to be accurately described as an error.<sup>448</sup> And as Ms Fraser explained,<sup>449</sup> it is a significant one. Its effect is to have a 25cm depth of water being donated into the groundwater regime throughout the modelling time, meeting the demand for groundwater that is being created by the scheme.<sup>450</sup> This inevitably masks the true impact on groundwater levels, gradients and flow paths, because without the error, groundwater levels would be modelled as lower. The impact of the error cannot sensibly be characterised as local when the error was never corrected and nothing else in the

<sup>443</sup> Raynor xx. See CD3.38a p. 427.

<sup>&</sup>lt;sup>444</sup> CD3.38a 2<sup>nd</sup> para p. 329.

<sup>445</sup> See CD3.38a Fig 5.4b p. 378.

<sup>&</sup>lt;sup>446</sup> Raynor xx.

<sup>447</sup> See CD3.38a Fig 5.8b p. 388.

<sup>448</sup> Raynor xx.

<sup>449</sup> Evidence in chief.

<sup>&</sup>lt;sup>450</sup> Raynor xx.

model allows for that qualification to be substantiated. The Agency is unable to say what the model results would be<sup>451</sup> without this serious lapse in the assessment.

- *395.* The impacts reported a drop in groundwater levels of 33cm without mitigation are therefore entirely unreliable.<sup>452</sup> They do not allow for the difference in simulated and observed groundwater levels (of up to 40cm), or the difference between simulated and observed surface water levels (up to 20cm), or the error (25cm). The model thus starts with a fixed river level which is unreliable (as it will not reflect the groundwater regime at the site); it then fails to provide a reliable indication of groundwater levels (given the potential difference of up to 40cm between that level and actual observed groundwater levels); and added to that there may be another difference between observed and modelled surface water levels. When none of these staging points in the assessment is reliable, the drawdown figure of 33cm cannot be relied upon either.
- 396. These defects on their own are sufficient to fatally undermine the modelling. However the assessment is entirely dispatched by the basic selection of the dry run itself. It is agreed that this event simply does not take into account the agreed evidence about when the most sensitive time of year is for MG4.<sup>453</sup> This significant fault in the assessment is now in effect accepted by the Agency, which now sees that perhaps the dry year "is not really the scenario of concern."<sup>454</sup> This alone prompts the question of why the Agency decided to model this scenario in the first place if it were trying to assess the effect of the scheme on important ecological interests.
- 397. Mr Raynor contrived a new proxy for other times of year beyond dry season,<sup>455</sup> taking the mean daily flows for May, June and September from the flows which had been used to give the Q95 flows that were adopted for fluvial modelling. He did not actually produce his workings, but in any case the height of his latest evidence is that river flows in May and June would not be as low as in September. This is no more than a statement of the obvious. The change in groundwater levels may be lower in *magnitude* in these months if river flow is higher, but this still says nothing helpful about the *impact* at these sensitive times of the year. As was agreed, a lower magnitude of change in September.<sup>456</sup>
- 398. The result, as Ms Fraser concluded, is that the modelling is just not fit for purpose when considering the groundwater effects of the scheme on Hinksey Meadow. That conclusion is corroborated by the multiple concessions made by Mr Raynor in his evidence. It is not disturbed by any claim that calibration is within the expected accuracy of the model used, when that model is a regional one that falls well short of usefulness for considering site-specific impacts. It is not displaced by any reliance on the wider objective of a flood risk assessment (FRA), which is to determine whether there would be an increase or decrease in flood risk as a result of the scheme. The issue here is not about flood risk but hydrological impacts on a valuable ecological resource at a local scale. These have simply not been assessed properly. The result is that no confidence can be placed in the assessment that has been prepared to support this scheme.

<sup>&</sup>lt;sup>451</sup> Raynor xx.

<sup>&</sup>lt;sup>452</sup> See CD3.38a Table 5.2 p. 344; Fig 5.8b p. 388: drop in 33cm.

<sup>&</sup>lt;sup>453</sup> Raynor xx.

<sup>&</sup>lt;sup>454</sup> Raynor rebuttal 7.10/17.

<sup>&</sup>lt;sup>455</sup> Raynor rebuttal 7.11-2/17-18.

<sup>&</sup>lt;sup>456</sup> Raynor xx.

- 399. None of this should come as a surprise to the Agency. An earlier groundwater assessment in 2016<sup>457</sup> refers to the preparation of a detailed hydrological conceptual model for Oxford Meadows SAC,<sup>458</sup> which implicitly recognises how more granular analysis is required for important ecological sites. The recommendations of that earlier assessment included,<sup>459</sup> at "detailed design stage, further investigation... of the influence of weirs and locks on local groundwater levels" and "more detailed collection of field data such as groundwater and surface water levels, detailed ground conditions, and the nature of the channel bed/bank material". There was no indication there that the authors, when mentioning detailed design stage, were contemplating this work being done *after* the grant of planning permission. That advice was not heeded.
- 400. The later assessment of 2018<sup>460</sup> recorded concerns by the FMP that the groundwater model was "poor from an ecohydrological perspective".<sup>461</sup> Jacobs accepted then that it would be possible to build a local higher-resolution (finer grid) groundwater model of Hinksey Meadow, if there were sufficient data available to allow development of a more detailed understanding of the local hydrology and ground conditions. They listed the data that would be required, including: site-specific rainfall and evapotranspiration data, detailed information on site drainage, site-specific measurements of aquifer properties, detailed information on the nature and thickness of alluvium, and information on the distribution and availability of moisture in the alluvium, including how this affects the plant communities of interest. There would additionally need to be: groundwater level monitoring data from the alluvium and the underlying gravel, water level monitoring data close to the meadows and river flow monitoring data. Monitoring would need to be undertaken "for a sufficiently long period of time to include not just seasonal variations, but also a suitably 'dry' year".
- 401. This list was compiled in terms which strongly support the criticisms by Ms Fraser<sup>462</sup> of the information available now. There is no reason in principle why that information could not be obtained.<sup>463</sup> It was identified in a groundwater assessment that was dated February 2018, two months before the first planning application for the scheme was submitted in April 2018 but withdrawn in March 2020 before its resubmission in March last year. There was more than enough time to have done this work.<sup>464</sup>
- 402. Jacobs went on to conclude<sup>465</sup> that "as the groundwater and surface water monitoring data referred to above "are not available", there was "little to be gained from higher-resolution modelling using relatively coarse scale data at this time". After being asked to consider the possibility of doing more detailed modelling due to concerns about its low-fi resolution, all Jacobs say in their conclusion is that there is not the information to carry out the assessment. The vicious circularity of this response is obvious. Criticism: revisit the model because it is not based on sufficient information; response: agree that information is lacking so we should not revisit the model. Even if it is claimed that revisiting the modelling was unnecessary due to a judgement on the magnitude of the

<sup>&</sup>lt;sup>457</sup> Fraser Appendix 2 pp. 16-143.

<sup>&</sup>lt;sup>458</sup> Op. cit., p. 28.

<sup>&</sup>lt;sup>459</sup> Op. cit., p. 73.

<sup>&</sup>lt;sup>460</sup> CD3.38a: see Appendix C Technical Note: Oxford FAS Groundwater Model: Review of Modelling Approach at Hinksey Meadow and Hogacre Park, p. 420.

<sup>&</sup>lt;sup>461</sup> Op. cit., p. 426.

<sup>&</sup>lt;sup>462</sup> See generally her evidence on 22 November 2023.

<sup>&</sup>lt;sup>463</sup> Raynor xx.

<sup>&</sup>lt;sup>464</sup> Raynor xx.

<sup>&</sup>lt;sup>465</sup> Cd 3.38a, p. 429.

effect on groundwater, that judgement cannot prevail when any underlying assumption about the model results being valid cannot hold, for reasons already given.

- 403. The further conclusion that it would make more sense to put a "monitoring network in place" then build a finer-scale local model in fact confirms that more information was required, even if the model itself were not refined. Contrary to this recommendation, no steps were taken even to update the existing model with better monitoring data.
- 404. The failure to act on any of these conclusions reinforces the detailed criticisms by Ms Fraser of the modelling results as they now stand (as largely accepted by Mr Raynor in the end). It is all the more bewildering now that the Agency has stated that groundwater monitoring relevant to Hinksey Meadow *has* taken place since 2018. None of that information is before the Inquiry. Quite why it has not been scrutinised and deployed to date is a mystery, but its absence emphasises the wider infirmity of the groundwater assessment.

#### Mitigation

- 405. These problems cannot be swept away by unsubstantiated claims about the prospect of mitigation. Mitigation has only been directed at demonstrably unreliable modelling results that have been produced for the no-mitigation world. If those results are flawed, any assumptions about the effects of mitigation are too. If baseline information is inadequate, this undermines the post-mitigation results in the same way.
- 406. Moreover, there is nothing in the assessment<sup>466</sup> to show what flow budgets are with the mitigation in place.<sup>467</sup> We do not know how much water is being fed into the model from the new weir cells.<sup>468</sup> There is nothing which allows for a comparison of residual flows with actual Q95 river flows, to enable an understanding of whether there is sufficient water in the surface water system to sustain groundwater levels through a drought period.<sup>469</sup> We do not know how far the river cell elevations have been elevated to represent the weirs, or whether the base of the river cells has been moved as well as the water elevation. Both would have important implications for how water flows from river cells into groundwater. There is no adequate information on what the design height for any riffles would need to be for the most sensitive periods of the year.
- 407. The model is unable to consider potential leakage from the stream to the aquifer at the assumed insertion points for the riffles;<sup>470</sup> indeed this phenomenon has not been considered. This would reduce groundwater levels. Similarly, the model does not deal with the prospect of groundwater bypassing assumed riffle locations, which has not been addressed either.<sup>471</sup> As Ms Fraser explained, if the model has been fed with fixed river levels and if it is unable to allow for circumvention or leakage, it will allow water to back up further upstream, artificially elevating the surface water levels that are taken into the modelling of groundwater. This is unrealistic and further compounds the issue with the modelling, this time from the perspective of considering whether the mitigation will be effective.

- <sup>470</sup> Raynor xx.
- <sup>471</sup> Raynor xx.

<sup>&</sup>lt;sup>466</sup> See CD3.38a: p. 346: Scenario B.

<sup>&</sup>lt;sup>467</sup> Raynor xx.

<sup>&</sup>lt;sup>468</sup> Raynor xx.

<sup>&</sup>lt;sup>469</sup> Raynor xx.

- 408. These difficulties drove the Agency to rely on highly generalised evidence about its ability to control river levels seemingly throughout Oxford, in particular through a low flow protocol.
- 409. There is no adequate explanation of any such form of control in the ES or other material supporting the scheme. The bare statement that the Agency is able to influence water levels, especially when they are low, does not materially assist with an understanding of how the MG4 at Hinksey Meadow may be affected at sensitive times of the year and how negative effects might be mitigated. There is simply no adequate information to explain exactly how, where and when any controls directed at the timely protection of the MG4 would take place, what the correct levels would need to be at different times, or what would be the potential implications for flows and receptors elsewhere in the surface water system.
- 410. Confidence cannot be placed in a case which relies upon an unspecified ability to throttle or open the system to deal with any concerns arising from the efficacy of the riffles. This even appears to involve the potential placement of new structures within the channel, with no explanation of where this might take place, what it might involve, what consents might be required to achieve it, or whether further interventions would be acceptable on broader grounds (including wider groundwater effects).
- 411. The Agency therefore asks, in effect, that modelling results which are untethered from reality should be sidestepped by reliance on mitigation which has never been directed at the correct impact (ie impacts during the sensitive growing season of the MG4), has been inadequately modelled anyway, or is otherwise based on highly generalised assertions with no adequate evidential foundation.
- 412. The Agency also relies on post-consent and even post-implementation monitoring. This should not be relied upon for the purposes of decision-making if there is insufficient information at the stage of decision (as there is here). If there is inadequate baseline data, or there are fundamental issues with the modelling, it is not possible to know whether likely significant effects here the loss of valuable plant communities are due to failures in mitigation and management, or to underlying hydrological conditions which ought to have militated against the endorsement of the proposals in the first place.
- 413. During the Inquiry the Agency appeared to suggest that the newly identified, but as yet unanalysed, monitoring data from 2018 onwards could be deployed as part of this mitigation. Without scrutinising that material, neither the Agency nor anyone else is in a position to make that claim; but in any case, it should not be relied on as mitigation; instead it should have been presented at this stage (indeed significantly before now) to allow for the principle of the scheme to be considered properly.
- 414. There is insufficient information in any event about how any monitoring would address issues with the effectiveness of mitigation if they did arise.<sup>472</sup> The generic possibility of installing further riffles in unknown locations hardly gives confidence, particularly if the existing riffle proposal is assumed to have been ineffective that stage.
- 415. All these flaws in the groundwater assessment mean that there is a substantial risk of very significant harm to a far larger extent of the valuable grassland at Hinksey Meadow than the Agency has acknowledged. The Agency evidence accepts that even the acknowledged loss of MG4 could not be sanctioned in the absence of fully effective

<sup>472</sup> See CD3.8 pp. 224 and 336; CD3.16 p. 17.

mitigation.<sup>473</sup> However, there is no adequate evidence that the mitigation it proposes would be effective, and so this loss should not be allowed.

#### **Compensation**

- 416. The fundamental flaws in the assessment of the scheme continue when the proposed compensation for the direct loss of grassland is examined.
- 417. There is no specific evidence considering the baseline hydrogeology or hydrology of the site proposed to receive translocated MG4 grassland;<sup>474</sup> nor is there evidence which looks at the effect of the scheme (which passes in-channel nearby) on groundwater levels there. The preferred translocation site returns sample values for the key determinants of soil fertility that are only just within the range indicated as optimum for MG4 and are well above the existing values for Hinksey Meadow. As Mr Woodfield explained,<sup>475</sup> what can be deduced, from the scant evidence the Agency has collected, is that the chosen location is an imperfect match to the soil type and chemistry at Hinksey Meadow.<sup>476</sup> It is agreed that, on the basis of available evidence, the balance of risk in respect of conserving the MG4 characteristics in the translocation is weighted more towards failure than success.<sup>477</sup>
- 418. As for the proposed habitat creation sites, there is again no evidence which assesses the baseline groundwater conditions or groundwater effects there. The Agency was advised by the FMP in 2018 that to give a fully informed judgement on the suitability of sites for restoration, a range of detailed information was required. This included a measure of phosphorus availability in the topsoil, several years' worth of groundwater data and a predicted regime of monthly stage levels in the newly created channel. There was however only a couple of months' worth of soil water regime data, no phosphorus measurements for the areas with potential for restoration and no firm prediction for how the stage levels in the new channels would respond.<sup>478</sup> They added that "Direct monitoring of the water regime, a measure of soil phosphorus availability and information on soil porosity should be collected and the suitability analysis re-visited using the larger data set before restoration is attempted."<sup>479</sup>
- 419. It is agreed that not all of this information has been made available.<sup>480</sup>
- 420. Furthermore, there is no evidence that all the hydrological guidelines, set by the FMP to assess whether areas are likely to support MG4, have been met in the identified locations.
- 421. These defects in assessment on their own are sufficient to undermine the compensation strategy which, it must be remembered, is only designed to address the direct loss of MG4 that the Agency is prepared to concede, not the far greater indirect loss. The Agency has, however, also failed to consider the likely implications for those

<sup>473</sup> Scholey proof 5.11/12.

<sup>&</sup>lt;sup>474</sup> Raynor xx.

<sup>&</sup>lt;sup>475</sup> Evidence in chief. References to the oral evidence of Mr Woodfield are to the evidence he gave on 22 November 2023.

<sup>&</sup>lt;sup>476</sup> See Woodfield proof OX009S/1a, Fig 7 p. 58.

<sup>&</sup>lt;sup>477</sup> Ecology SoCG 6a/2.

<sup>478</sup> CD3.13 1.2/8.

<sup>&</sup>lt;sup>479</sup> CD 3.13 2.6/22.

<sup>&</sup>lt;sup>480</sup> Raynor xx.

sites of drawdown from the scheme more generally, particularly in the light of their locations down-gradient of the proposed low flow weirs in Bulstake Stream. There can be no confidence that hydrogeological conditions at the sites are suitable to support MG4 communities.

- 422. Even in respect of soil fertility, the sample points for the restoration sites fall some way outside what has been the case at Hinksey Meadow and remain beyond the range at which success can be predicted with any confidence. They are within a range which is suboptimal for the creation of MG4.<sup>481</sup>
- 423. As Mr Woodfield explained,<sup>482</sup> the fields proposed for restoration are essentially semiimproved grassland, suggesting that there may well have been previous applications of fertiliser or other sources of enrichment that render the fields unsuitable on fertility grounds. These likely issues are borne out by the experience of the Trust, which owns and has managed three fields south of Willow Walk under Countryside Stewardship option GS2. For 14 years this has involved very low or no nutrient inputs, and management by grazing and hay cutting - more or less exactly the prescription proposed by the Agency. Even taking the latest 2022 classification of these sites as "other neutral grassland" in "moderate" condition, this cannot amount to anything near the equivalent of Hinksey Meadow.
- None of the evidence of attempts to restore traditional hay meadows elsewhere 424. justifies any confidence being placed in the restoration sites proposed here. Study work relied upon by the Agency <sup>483</sup> confirms that measuring success or even monitoring progress is a challenge, and that the dynamic nature of floodplain environments brings additional difficulties for restoration managers. The evidence is that overall<sup>484</sup> just 5% of schemes surveyed have been fully successful, with substantial progress made on only 20%. Out of 39 surveyed sites in Oxfordshire, only one had been successful.<sup>485</sup> The Agency's own evidence, therefore, suggest a very low success rate for restoration schemes. Even the case study referred to by the Agency as an example of success<sup>486</sup> started as MG15 priority habitat, which is not the case here. A specific research programme at Somerford Mead, to the west of Oxford concluded, even after 22 years of management.<sup>487</sup> that complete recreation of a floodplain meadow still remains an "elusive goal". It added that it would take c. 162 years to fully restore floodplain meadows if the observed trends there continued; and if this is the time-scale needed to achieve recreation, any compensation scheme proclaiming the replacement of floodplain meadows that are lost to development is being "wholly unrealistic".<sup>488</sup> In these circumstances the evidence relating to the potential habitat recreation sites is not sufficient to confirm that their selection has been robust.
- 425. It is no adequate response to these issues to try and postpone dealing with them by adaptive mitigation when the scheme has been approved and built, all without sufficient

<sup>&</sup>lt;sup>481</sup> Op. cit., 5.7.4-8/55.

<sup>&</sup>lt;sup>482</sup> Op. cit., 5.7.7-9/61-2.

<sup>&</sup>lt;sup>483</sup> Scholey Appendix 6 (in EA/9c) *Recovering lost hay meadows: An overview of floodplain-meadow restoration projects in England and Wales, Journal of Nature conservation*, p. 62.

<sup>&</sup>lt;sup>484</sup> Op. cit., p. 68 left hand column.

<sup>&</sup>lt;sup>485</sup> Table 3 p. 66.

<sup>&</sup>lt;sup>486</sup> Scholey proof EA/9c 10.31(c)/41, referring to Case Study 10.6 in Floodplain Meadow Partnership *Beauty and Utility* at Woodfield Appendix DW7 (in OX009S/1c) p. 153.

<sup>&</sup>lt;sup>487</sup> Woodfield Appendix DW13 (in OX009S/1c) p. 671.

<sup>&</sup>lt;sup>488</sup> Op. cit., p. 671.

real-world (or even model-world) assessment to allow a proper understanding of how the groundwater regime functions or, therefore, whether harmful impacts could be addressed.

- 426. The upshot is this: the direct and major loss of a nationally valuable ecological resource; wholly inadequate evidence that significantly greater indirect losses can be mitigated; and little or no confidence in the selection of sites elsewhere to recreate such irreplaceable habitat by way of compensation.
- The Agency cannot sidestep the obvious deficiencies in its assessment work by relying 427. on the potential for these issues to be raised through the planning process. This ignores the need to justify the Order on the basis of an identified scheme which, in the words of the CPO Guidance, "is unlikely to be blocked by any physical or legal impediments to implementation".<sup>489</sup> The Order is to be judged on the available evidence, which suffers from serious defects clearly articulated by the Trust witnesses. There is nothing to indicate that these evidential defects are to be satisfactorily resolved. On this basis, the Agency cannot discharge its burden of demonstrating that there "are no obvious reasons" why [planning permission] might be withheld".490 As other guidance states,491 the "planning framework providing the justification for an Order should be as detailed as possible in order to demonstrate that there are no planning or other impediments to the implementation of the scheme".<sup>492</sup> Failures through assessment work to demonstrate that development plan and national policy is complied with are therefore of direct relevance to the confirmation of the Order. Put another way, the Agency cannot be taken to have presented a compelling case for the compulsory acquisition of others' land interests if it relies on the prospect of unproven or unassessed mitigation being delivered beyond what it currently proposes.
- 428. Even where planning permission has been granted by a local planning authority, the Secretary of State may conclude that the quality of assessment evidence provided by an AA falls short of demonstrating that there is a compelling case for the taking of land. The grant of planning permission does not amount to a green light for any scheme, let alone this one.
- 429. In this case, for the reasons given by Mr Canavan for the Trust,<sup>493</sup> the direct harm to Hinksey Meadow, the risk of much greater indirect harm arising from inadequate assessment and the failure to demonstrate the adequacy of proposed compensation all amount in their own terms to fundamental policy conflict.<sup>494</sup> This is the case even before the question of alternatives is considered; and it is that question which falls for consideration after a brief detour to consider BNG.

### <u>BNG</u>

430. The Agency is presently unable to demonstrate how it will meet its self-declared objective of providing 10% BNG. On its own figures, albeit following the correction of

<sup>489</sup> CD4.10 15/14.

<sup>&</sup>lt;sup>490</sup> Ibid.

<sup>&</sup>lt;sup>491</sup> As applied to other compulsory purchase powers under section 226 of the 1990 Act but still relevant in this case.

<sup>492</sup> Op. cit., 104/49.

<sup>&</sup>lt;sup>493</sup> See Canavan proof OX009S/4a 4.30/20-4.67/26.

<sup>&</sup>lt;sup>494</sup> See policies G1 and G2 of the Local Plan and paragraph 180 of the Framework (irreplaceable habitats) as explained in Canavan proof at 4.32-5/20-1, 4.47-9/24 and 4.63/26.

serious classification errors, there is in fact no gain for on-site terrestrial habitat. The figures have shifted substantially from +15.8% to -1.04%, resulting in a small net loss in biodiversity units rather than the exceedance of the target for net gain that the Agency itself requires.<sup>495</sup> Its errors have therefore prompted unplanned discussions with landowners that have not yet concluded and relate to sites not in Oxford but up to 15km away.<sup>496</sup> There is therefore no evidence of how the Agency will be able to meet its 10% commitment. In any case, this provision of BNG potentially far away from the location of impact is far from the preferred approach of achieving on-site BNG and qualifies the weight the Agency appears to place on this benefit.

431. However, the issue of BNG is still at large in other respects. The 10% figure has been calculated on the assumption that the grassland at risk of indirect loss would not be affected. That assumption is not secure. Despite accepting<sup>497</sup> that it is "extremely important" that it should "apply the Defra metric as accurately as possible", the Agency did not revisit all of the areas that were the subject of the error-strewn original calculation to verify the accuracy of the relevant classifications.<sup>498</sup> It has no realistic idea whether the errors which were pointed out and prompted the re-survey still apply elsewhere. There is no evidence that this has been adequately checked, or that the latest data provides a "fair representation"<sup>499</sup> of how the relevant land parcels should be assessed for the BNG calculation, such that 10% BNG can be achieved.

#### Alternatives assessment

#### Introduction

- 432. The Trust understands the need for the scheme to protect homes, businesses and the unique historical setting of Oxford. It does not underestimate the physical and human cost of severe flood events and it supports a scheme which delivers flood alleviation benefits for the city.
- 433. However, the Agency has not demonstrated that there is no alternative way of meeting the need for the scheme which avoids irreparable harm to Hinksey Meadow.
- 434. The Trust puts the proposition that way to confirm that it is the task of the Agency to demonstrate that there is no alternative. It is not for the Trust, or any other objector, to prove that any identified alternatives would be acceptable.<sup>500</sup> The Agency accepts in its evidence that it has a "very strong onus", to demonstrate that the scheme solution is "essential" in order "to deliver the flood risk reduction which Oxford needs in order to protect it from future, climate-exacerbated flood risk; that no satisfactory alternative exists which could achieve the same end".<sup>501</sup> It states that the scheme "necessitates unavoidable impacts on existing landscape and habitats", but accepts that this "raises the bar to the highest level in terms of scheme justification and consideration of alternatives".

<sup>&</sup>lt;sup>495</sup> Scholey proof 15.6/55; CD3.31 p. 70.

<sup>496</sup> CD3.31 p. 64, third para.

<sup>497</sup> Scholey proof 15.9/57.

<sup>&</sup>lt;sup>498</sup> Fig 9 of Woodfield proof p. 67; confirmed in Scholey rebuttal (EA/9d) 7.2/8.

<sup>&</sup>lt;sup>499</sup> 15.9/56.

<sup>&</sup>lt;sup>500</sup> Scholey xx.

<sup>&</sup>lt;sup>501</sup> Scholey proof 5.11/12.

- 435. That concession properly draws on the planning policy which is relied upon by the Agency to justify the scheme under the CPO guidance.<sup>502</sup> Policy G2 of the Oxford Local Plan says (in part) that development will only be permitted on a Local Wildlife Site such as Hinksey Meadow if there is an exceptional need for the development and if that need "cannot be met by development on an alternative site with less biodiversity interest". Similarly, paragraph 186 of the Framework says (in part) that if significant harm to biodiversity resulting from a development "cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused". As Planning Practice Guidance confirms, that paragraph sets out a hierarchy in which mitigation and then compensation are considered only where significant harm cannot first be wholly or partially avoided.<sup>503</sup> The rest of Policy G2 is drafted to the same effect.
- 436. The reference to a "satisfactory" alternative in the evidence changes elsewhere to "reasonable".<sup>504</sup> The latter formulation is preferable because the former may suggest that a final decision must be taken on whether it is acceptable. Nothing in policy or guidance requires that level of scrutiny or result, by way of a planning permission or otherwise, before a decision is made about whether there is a compelling case for the Order.
- 437. That an alternative should be "reasonable" is not controversial, because the Trust recognises that a judgement is required on whether an alternative should fall for consideration or be ruled out. However, it is for the Agency to demonstrate why no reasonable alternatives exist in this case.
- 438. There is no dispute that the judgement on whether there is a reasonable alternative should take into account the objectives of the scheme. Alternatives which do not meet, or largely meet, those objectives can legitimately be ruled out. Nonetheless, it is important that the promoter is not allowed to interpret those objectives so narrowly that they self-servingly avoid the scrutiny that is properly required.

# FCERM-AG Guidance

- 439. Similarly, caution is required when the Agency claims that an alternative has been dismissed on the grounds of "proportionality," under the FCERM-AG.<sup>505</sup> This is especially so when there is evidence to suggest that, with some realistic effort, an option could be developed which is consistent with the objectives of the Scheme.
- 440. This need to ensure that an alternatives assessment is not unduly constrained is borne out by the Guidance itself. It is lengthy and written in a specialist idiom which does not apply neatly to cases such as this. But fairly interpreted, it encourages the Agency to think broadly, not narrowly. It recommends a process which begins with a "longlist exercise" including "possible options to achieve your project objectives". This should consider "innovative approaches" and "the best environmental measures".<sup>506</sup> It asks for the consideration of generic options to "carry out an agreed strategy".<sup>507</sup> Whilst this longlist should be "proportionate", the exercise requires everyone to "think broadly about how to achieve the expected ambitions of the FCERM investment" and it should not be

<sup>&</sup>lt;sup>502</sup> See James proof EA/11a 10.78/33.

<sup>&</sup>lt;sup>503</sup> Reference ID 8-019-20190721.

<sup>&</sup>lt;sup>504</sup> James rebuttal 3.8/4.

<sup>&</sup>lt;sup>505</sup> CD5.6.

<sup>&</sup>lt;sup>506</sup> Op. cit., 8.5/94.

<sup>&</sup>lt;sup>507</sup> Op. cit., p. 91.

constrained. A "wide range of measures" should be considered,<sup>508</sup> not only those which "modify the pathway to improve safe conveyance" and "reduce the probability of flooding or erosion", but also those which "reduce the consequences of flooding or erosion", or even "relocate or modify assets, infrastructure or vulnerable communities".<sup>509</sup> Modifying the pathway may include local "structural solutions" including "flood resistance measures for individual properties or groups of properties".<sup>510</sup>

- 441. Shortlisting is aimed at "refining some options or their packaged measures to reduce negative impacts and improve outcomes".<sup>511</sup> Appraisals should also consider wider aims including "sustainability and "environmental improvement including biodiversity net gain".<sup>512</sup> Options must "provide different levels of risk reduction".<sup>513</sup> Developing "combinations of measures is often an ongoing process that builds up to valid solutions to the problem". The Guidance allows for "non-starters" to be removed,<sup>514</sup> where these are technically unreasonable or unrealistic, but advises that "reasons like high cost, engineering challenges or general acceptance of a given measure may not be enough to reject an option at this stage".<sup>515</sup> The screening process is therefore to be used "as a time to develop ideas, not to dismiss them".<sup>516</sup>
- 442. In this case, the Trust has advanced a potential alternative that has been treated as a version of "Scenario A1" in the "OFAS Western Conveyance Channel Review" (Appendix Q to the ES Addendum submitted in February 2023). The so-called "no channel" option which is more accurately described as a reduced channel option is there summarised as follows: "North Hinksey Meadow section removed: represents the detailed design option with only the removal of the proposed second stage channel between the National Grid Pylon 200m downstream of Botley Road and Willow Walk".
- 443. The evidence of the Agency is that despite the inclusion of Scenario A1 in Appendix Q, the Guidance did not require it to be considered as an alternative at all,<sup>517</sup> largely it seems because it would not achieve the same levels of conveyance through the western part of the city.<sup>518</sup>
- 444. This approach fails to accord with the principles of the Guidance. It either takes an excessively restrictive view of the "project objectives" and "agreed strategy", or it ignores the broad approach that is required when compiling options to fulfil those objectives or strategy.
- 445. Even by the later stages of project development, as explained in the Outline Business Case, the investment objectives were expressed broadly to "reduce flood damages to at

<sup>&</sup>lt;sup>508</sup> Op. cit., 8.6.4/98.

<sup>&</sup>lt;sup>509</sup> Op. cit., p. 98.

<sup>&</sup>lt;sup>510</sup> Op. cit., 8.6.6/99.

<sup>&</sup>lt;sup>511</sup> Op. cit., 8.8/108. See too 8.2.2/85: an option is a "package of measures that together provide community resilience to flooding and coastal erosion over the life of the option." It must "achieve your objectives for local FCERM" and "contribute to the wider objectives of your project".

<sup>&</sup>lt;sup>512</sup> Op. cit., 8.7/94.

<sup>&</sup>lt;sup>513</sup> Op. cit., 8.4.6/93.

<sup>&</sup>lt;sup>514</sup> Op. cit., 8.9/109.

<sup>&</sup>lt;sup>515</sup> Ibid.

<sup>&</sup>lt;sup>516</sup> Ibid.

<sup>&</sup>lt;sup>517</sup> Raynor xx, Harding xx. References to the oral evidence of Mr Harding relate to the evidence he gave on 23 November 2023.

<sup>&</sup>lt;sup>518</sup> Harding xx.

least 1,000 homes and businesses currently at risk in Oxford", "reduce flood impacts on transport infrastructure and utilities in Oxford", "safeguard Oxford's reputation as a thriving centre of commerce" and "create and maintain new recreational amenities, wildlife habitat and naturalised watercourses accessible from the centre of Oxford".<sup>519</sup> The same "project objectives" are listed in the ES.<sup>520</sup> There is nothing in them to preclude the consideration of a so-called "no channel option". The preferred strategy, taken forward from the longlisted options, of "Increasing flow capacity in western floodplain"<sup>521</sup> should not of itself exclude different ways of defining how channel widening or other measures could achieve that increase.

- 446. Even if the strategy taken forward in the Outline Business Case is taken to mean maximising flows through the western floodplain by widening existing channels, there is no reason why this should be restricted to options which simply varied the overall width of the channel. The shortlisted options of a "new flood channel" of differing sizes (small, medium and large) would obviously allow for conveyance of differing extents and in any case comprised the "widening of channels in some locations". Within this approach there is nothing in principle to prevent consideration of channel widening of a lesser extent in an identified location such as Hinksey Meadow, even if this caused some decrease in conveyance as would be the case with the different widths which were considered. The Guidance confirms the need for options to provide different levels of risk reduction and cautions against relying on the general acceptance of a given measure to reject other options.
- 447. The treatment of Scenario A1 in Appendix Q is sufficient to confirm how the Agency is wrong to reject it out of hand as a potential option.
- 448. The Trust has never disputed that in broad terms removing the channel from the length of Hinksey Meadow would alter conveyance and thus affect flood levels elsewhere, but a sense of perspective is important. Scenario A1 would still increase conveyance and reduce flood levels relative to the Do Minimum case which reflects current conditions in the area.<sup>522</sup> It would only omit a relatively short length of second stage conveyance channel (around 600m of the circa 4.2km length of the scheme). The relative increase in levels that would arise under even the original Scenario A1 is generally in the order of only 30mm upstream of the defences in Area 1 in the 1% AEP event.<sup>523</sup> This is not significant enough to justify dismissing this option as a matter of principle. The differences in "residual flood risk property numbers"<sup>524</sup> lead to the same conclusion. The high level economic assessment that the Agency ultimately carried out showed Scenario A1 having a BCR greater than the scheme,<sup>525</sup> with a difference in calculated benefits of only £8m compared with scheme benefits over £1,536.4m – a tiny fraction of difference, and £2m of lower costs. Such figurework logically follows an in-principle decision on whether to consider an alternative, but the figures in this case hardly suggest a non-starter with such a conspicuous problem that it should be rejected summarily. The decision to do so

<sup>&</sup>lt;sup>519</sup> CD2.2 p. 42.

<sup>&</sup>lt;sup>520</sup> CD 3.8 Table 1.1 p. 17.

<sup>&</sup>lt;sup>521</sup> CD2.2 p. 57. See too the reference to "increasing flow capacity" on p. 58 when referring to options considered at the earlier Strategic Outline Case stage.

<sup>&</sup>lt;sup>522</sup> This is shown in Tables 1-4 of Appendix Q at location 2 at CD.3.29 p 9: water level reduction would be 0.15m in the 20% AEP event, 0.10m in the 10% AEP event, 0.07m in the 2% AEP event and 0.05m in the 1% AEP event.

 $<sup>^{\</sup>rm 523}$  See Location 2 in Table 4 of Appendix Q at CD3.29 p. 9.

<sup>524</sup> CD 3.29 Tables 6 and 7 on pp. 16-7.

<sup>&</sup>lt;sup>525</sup> See Table 5 of CD3.29: 10.8 compared to 10.6.

reveals far more about the rigid thinking of the Agency than any inherent problems with the alternative.

449. It may be said that the Agency carried out the Appendix Q analysis anyway. However its claim that Scenario A1 was not even an appropriate option to consider reveals not just a failure to apply its Guidance, but an attitude that explains why Appendix Q is defective as an alternatives assessment. It is as if Appendix Q sought to confirm an engineering-based decision that had already been made, without the Agency keeping a genuinely open mind to the possibility of change.

### Appendix Q: approach

- 450. The Inquiry has received from Rhys Coombs detailed and compelling evidence on the flaws inherent in Appendix Q.<sup>526</sup> This was set out in his evidence in chief, which has prompted a note in response from the Agency ("the First Agency Note")<sup>527</sup>, a reply by Mr Coombs (the "RC Note")<sup>528</sup> and then a further note from the Agency ("the Second Agency note").<sup>529</sup>
- 451. As Mr Coombs explained,<sup>530</sup> the purpose of Appendix Q is to determine the differences between identified options including Scenario A1. The Agency has taken into account the aspect of the Guidance which recommends the use of the iBCR method to consider which scheme should be progressed.<sup>531</sup> Subject to the matters raised below, this is an appropriate way of considering alternatives of interest.
- 452. Appendix Q considers 5 shortlisted options. These include Do Min, Scenario A1 and the Proposed Scheme. The Do Min case is used as an initial "leading option" for the purposes of the iBCR analysis. There is no dispute with this approach.
- 453. However there is a basic structural flaw that undermines the rest of the analysis.<sup>532</sup> Appendix Q says that "elements of the preferred option from the detailed design which have been retained for the scenarios tested: include '1. All raised defences (upstream of Botley Road, New Hinksey and South Hinksey)'." These defences "do not include the freeboard allowance and are set at 1% AEP flood level for consistency with the modelling of other options for economic assessment". Thus the defences that have been applied to the scheme.
- 454. This approach is mistaken because it builds methodological bias into the assessment. The purpose of the exercise is to allow for different options to be tested. This legitimately includes options that do not achieve the same conveyance as the scheme (as the appraisal of different channel widths itself assumed). However, if the analysis fixes flood defences at the level assumed for the scheme, and allows no variation when considering other discrete options, it inherently disadvantages the other options. This runs contrary to the advice in the Guidance to refine options to optimise outcomes. It is inimical to the concept of allowing discrete options to be properly tested, because it stops short of considering whether risk can be managed to improve how any option performs. The

529 INQ/29a.

<sup>&</sup>lt;sup>526</sup> References to the oral evidence of Mr Coombs relate to the evidence he gave on 21 November 2023.

<sup>527</sup> INQ/29.

<sup>&</sup>lt;sup>528</sup> INQ/40.

<sup>&</sup>lt;sup>530</sup> Evidence in chief; and see the accompanying slides.

<sup>&</sup>lt;sup>531</sup> See CD 5.6 pp. 149, 153-4.

<sup>532</sup> See RC Note 1.11/2.

Guidance is robbed of its purpose if the Agency fails to take a reasonable opportunity to improve the technical performance of an option that is being considered.

- 455. The Appendix Q assessment should instead have allowed Scenario A1 individually to benefit from the same standard of protection as the scheme. That is to say, it should have applied the level of defences that would be adequate to defend a 1% AEP event when modelled for that option, in the same way that the Agency allowed for the scheme. By failing to do so, it handicapped Scenario A1 and skewed the outcome of the modelling work in favour of the scheme. The claim of consistency is misconceived, because Scenario A1 is not given defence levels that are equivalent to the standard of protection accorded to the scheme. Such a claim cannot hold good when it embeds manifest imbalance in the assessment.
- 456. The result is that the scheme models would not allow some of the linear defences to overtop during the 1% AEP event, because they are designed to withstand this level. However, Scenario A1 is not afforded the same standard of protection in the same event. The approach thus designed-in overtopping during this event in Scenario A1, and even then water levels typically do not vary, or by only a few centimetres, <sup>533</sup> suggesting that there was scope to refine that option. It was wrong to ignore this.
- 457. Secondly, when modelling the Scheme for the comparative purposes required by the assessment, Appendix Q differs from the FRA for the scheme, because it purported to follow advice (identified in the Guidance) on the approach to freeboard. That advice<sup>534</sup> says that the benefit of the scheme should not be altered to account for "the impact of the residual uncertainty allowance". On this approach, the assessment in Appendix Q was required to remove this residual uncertainty allowance when setting the defence levels for the scheme as part of any comparative exercise. As Mr Coombs has explained, <sup>535</sup> that allowance was calculated as 0.32m "freeboard" for linear defences in Area 1 around Botley Road in the FRA.<sup>536</sup> But when this figure is deducted from the proposed design level of the scheme, the level that was modelled for the scheme is lower than the level that it should have been, by 100mm.<sup>537</sup> As a result, even if a consistent approach between the modelling of the scheme and Scenario A1 is required. Scenario A1 is still denied the benefit of adequately high defence levels.
- 458. The Agency has suggested in its most recent response that the "removal" of height from the model is to allow the defences to settle to their design height, at least in respect of the embankments in Area 1B. However there is nothing in the guidance to suggest that this is appropriate (the guidance only advises that the residual uncertainty be removed); and there is no evidence to indicate why the levels allowed for by the Agency are suitable either.
- 459. There is a third point to add to the issues of approach mentioned above. The Guidance advises that climate change should be included when considering risk over time. Appendix Q states, however, that the 1% AEP + 30% climate change scenario was not

<sup>&</sup>lt;sup>533</sup> See CD 3.29 pp. 6-9 Tables 1-4.

<sup>&</sup>lt;sup>534</sup> See 3.12/5 of the RC Note, which refers to section 2.2.1 of Accounting for residual uncertainty: updating the freeboard guide [CD5.1 p. 14].

<sup>&</sup>lt;sup>535</sup> See the RC Note 3.8-3.13/5-6, cross-referring to the Residual Uncertainty Analysis in the Flood Risk Assessment at CD3.38a. The references at para. 3.11 to figures in the RUA are to p. 467 (Table 5.3) and p. 463 (Table 4.2) of CD3.38a.

<sup>&</sup>lt;sup>536</sup> See CD3.38 Table 5.3 p. 467.

<sup>&</sup>lt;sup>537</sup> In relation to Areas 1A and 1B - see RC Note 3.13/6 and 4.5/7. See more generally in relation to Area 1A, 3.1-3.15/5-6; in relation to Area 1B, 4.1-4.10/6-7; in relation to Area 1C 5.1-5.11/8-10; and in relation to Castle Hill Stream 6.1-6.8/10-11.

assessed as it exceeded the design standard for the scheme and "all scenarios would show extensive flooding across the area."<sup>538</sup> However a 30% design level was used as a basis for the final designed levels of the linear defences in Areas 1A and 1B; and in any case, the comment on flooding tacitly acknowledges how incremental differences between the scheme and an alternative such as Scenario A1R may reduce even further, if climate change were allowed for. This emphasises the difficulties in not fully modelling alternatives such as Scenario A1. It is not enough for the Agency to say<sup>539</sup> that climate change effects have been included in the economic assessment: + 11% climate change has been considered, not 30%. Reliance on the fact that + 30% climate change would inundate more properties masks how the incremental differences between the Scheme and other options including Scenario A1R would be reduced. This again undermines the rationale for not carrying out full modelling of this scenario.

- 460. These failures matter because the iBCR approach followed in Appendix Q depends upon the scenario that has been selected for assessment and the modelling assumptions which are made for the alternatives. Thus the incremental difference in iBCR between Scenario A1 and the scheme<sup>540</sup> is unreliable because it is based on an inherent bias in the standard of protection given to the options that are modelled; or it does not correctly attribute to alternatives the level of defences that are proposed for the scheme; and it is not a fully accurate reflection of the future performance of the scheme. An unreliable iBCR figure in the economic analysis undermines the contention by the Agency that they have properly dismissed alternatives to the scheme.
- 461. These fundamental issues of approach are sufficient to undermine Appendix Q. These are flaws which can only be corrected by modelling again with corrected levels.
- 462. However, in the absence of proper re-modelling to correct the defective assumptions Mr Coombs has identified, he sought to show the potential effect of such corrections by considering what are relatively insignificant changes to Scenario A1. (This was termed Scenario A1R but was intended to show how Scenario A1 had not been properly considered in Appendix Q.) Mr Coombs illustrated his broader concerns by reference to locations within the model: Areas 1A-C to the north of Botley Road and Castle Mill Stream.<sup>541</sup>
- 463. In Area 1A, whereas the modelling shows overtopping of the defence levels that were assumed for Scenario A1, it failed to allow the same standard of protection as the scheme. Properly formulated, this stand-alone option would instead allow protection for a 1% AEP event. Appendix Q suggests that an increase in design levels of around 30mm (potentially up to 60mm in some locations) would suffice.<sup>542</sup> In any case, the modelling shows water levels for this scenario that lie below the proposed defended level for the scheme. The Agency conceded in its First Note that this area could be defended and that the incremental flooding of properties in this area could be accounted for in the design.<sup>543</sup>

<sup>543</sup> Op. cit., 3.1/4.

<sup>&</sup>lt;sup>538</sup> Note 8.24/17.

<sup>&</sup>lt;sup>539</sup> 8.2/8 of the Second EA Note.

<sup>&</sup>lt;sup>540</sup> CD3.29 Table 5 p.16, which shows for Scenario A1 and the scheme respectively "benefits" of £1,528.5m and £1,536.4m, costs of £142m and £144.6m, BCRs of 10.8 and 10.6 and an iBCR of 3.1.

<sup>&</sup>lt;sup>541</sup> As explained in his evidence in chief. The RC Note updates his evidence in chief by taking into account modelling information that was provided in substitution for erroneous modelling results that the Agency gave him previously. However the slides indicate the areas in question, as well as the levels of defences assumed in the Appendix Q modelling for each area (see the references to CD3.29 in the slides) and the level of proposed defences for the scheme (see the references to CD3.38a in the slides).

<sup>&</sup>lt;sup>542</sup> RC Note at 3.7/5 and 3.15/6.

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- 464. In Area 1B, it is common ground that the lower section of defence at the Park and Ride cannot be raised. The model results for both Scenario A1 and the Scheme show that water could flow into the Botley Road area if those defences are breached. It has never been disputed that this could occur in flood events that are less severe in Scenario A1 than in the scheme. But the defence that was assumed for Scenario A1 should have been higher to allow for a consistent standard of protection. The modelling fails to afford Scenario A1 the level of defences proposed for the scheme anyway,<sup>544</sup> and should have. The Agency has not provided adequate evidence to justify the claim that raising the defences along this reach would provide no benefit to properties in Scenario A1R due to the "bypass mechanism" at the Park and Ride. There would be some additional flow passing the Park and Ride, but the incremental differences between the scheme and Scenario A1R would be reduced given the potential for some defences to be added here. Increasing the modelled defences for this scenario even by just 10cm (to the height that should have been used for the scheme defence level) would have prevented overtopping in that location.<sup>545</sup> No clear reason has been given for why this should not be considered further.
- 465. In Area 1C, the scheme already proposes works along a length of flood wall here. Increasing the height of defences here by just 20mm - less than a course of bricks - would prevent overtopping under a Scenario A1R in the 1% AEP event. The Agency concedes that it may be possible to raise the defence levels here.<sup>546</sup> There is no evidence to suggest that it would need to be rebuilt anywhere to add this height.
- 466. In this area, the Agency claims that there is another flood mechanism that would occur to the east, where flood water would still enter from Osney Stream south of Botley Road. But there is no evidence to suggest that a short length of additional flood wall would not be possible here. The difference in flooding between the scheme and Scenario A1 in this location is driven by a difference of only 30mm, which again is less than a course of bricks. A curb could prevent overtopping. It may be that a minimal amount of land acquisition would be necessary to extend what is an existing defence. But any extension would be insignificant and not alter materially any need to exercise rights for maintenance.<sup>547</sup>
- 467. Before leaving Area 1 it is necessary to consider a further point raised by the Agency. It argues (in both its First and Second Notes) that raising defence levels in this Botley Road area would increase flood levels elsewhere, such that further exploration would be required, in particular, of whether the defences in Area 1C should be extended to tie in at an appropriate elevation. It identifies properties upstream of Botley Road where an unspecified increase in Present Value Damages (PVD) is used to indicate where there would be some increase in the level or duration of flood risk.<sup>548</sup>
- 468. All this point does in truth is to confirm why the alternatives assessment in Appendix Q is defective; indeed why the more specific points raised by Mr Coombs should be treated as illustrative of wider issues with Appendix Q that require remodelling. As the Agency itself concedes, when considering those properties upstream of Botley Road "no attempt has been made to consider the scale of change or determine whether it is

<sup>544</sup> Op. cit., 4.4-8/7.

<sup>545</sup> Ibid.

<sup>&</sup>lt;sup>546</sup> Op. cit., 5.1-2/8.

<sup>&</sup>lt;sup>547</sup> Op. cit., 5.5-9/9-10.

<sup>&</sup>lt;sup>548</sup> See 2.9/2 and 5.4/7. of the First EA Note (and 8.1/8 of the Second EA Note) as considered in 5.10/10 and 2.4-5/3 of the RC Note.

marginal or significant".<sup>549</sup> Any uncertainty is due not to a problem with Scenario A1R, but the failure of the Agency to consider it. Whatever any change upstream may be, it would need to be considered as part of the wider modelling which included any downstream effects that favoured the alternative.

- 469. The Trust has never claimed that in Scenario A1R the number of affected properties or scale of impact would be equal to or less than the scheme. But the extent of any incremental difference is still relevant to the application of the methodology followed by the Agency. If that difference could be materially reduced by changes to defences that are already in place or proposed, the Guidance indicates that shortlisted options should be refined accordingly as part of any alternatives assessment.
- 470. The Agency also accepts<sup>550</sup> that it would not know about the need to extend defences in Area 1C until "further exploration" had been carried out. Even if that is true, it does not explain away the failure to consider this issue as part of an adequate alternatives assessment. It was not for the Trust to design a detailed scheme; it is for the Agency to demonstrate that there are no reasonable alternatives. If it has not done enough work to do so, it is unable to sidestep that failing by relying on the need for it to carry out more. In evidence Mr Coombs explained that a "glass wall" model could be used to finalise the necessary level of defences within a wider remodelling exercise, a benefit of assessment that had already been taken to assess the scheme.
- 471. Turning to the Castle Mill Stream area, to the east of Areas 1A-C, the issue raised by Mr Coombs was that the model had failed to pick up a flow path that was shown in Scenario A1, but not with the scheme. This omission was probably caused by the resolution of the model. LIDAR data shows that a similar flow path would be expected in both cases, albeit to a lesser degree in the latter. Flooding in both cases could be addressed, again, by minor work to provide a dwarf wall on the alignment of an existing fence at a car park. This would allow Scenario A1R a standard of protection to a 1% AEP event. This would remove the incremental difference in flooding between the scheme and a Scenario A1R.<sup>551</sup>
- 472. The Agency suggests that any new defence would need to be longer and, given the close proximity of buildings with openings, "would require careful design".<sup>552</sup> However there is no evidence that the levels of floors and openings in the relevant buildings would require them to be avoided. In any case, the need for careful design of any defence is a given and there is no evidence that another form of defence in this location is unfeasible.<sup>553</sup>
- 473. The Agency is then mistaken in claiming that an alternative source of flooding from the Thames to the west would make any new defence ineffective. The model results show that this would not occur because there is no hydraulic connection.<sup>554</sup>
- 474. This debate about the works suggested in all these areas should be seen in its proper context. Mr Coombs has provided what is necessarily an initial response to a modelling exercise that was critically flawed in its basic assumptions from the start, and requires

<sup>&</sup>lt;sup>549</sup> First EA Note 2.10/3.

<sup>&</sup>lt;sup>550</sup> Op. cit., 5.4/7.

<sup>&</sup>lt;sup>551</sup> RC Note 6.1-4/10-11.

<sup>552</sup> EA First Note 6.3/8.

<sup>&</sup>lt;sup>553</sup> RC Note 6.5/11.

<sup>&</sup>lt;sup>554</sup> Op. cit., 6.6/11.

proper remodelling as a result. In so far as this debate also considered differentials in PVD figures between the scheme and Scenario A1R (which relate to the "benefits" and therefore the iBCR row in the economic assessment in Appendix Q),<sup>555</sup> the same point applies.

- 475. In relation to the PVD figures, and having regard to the latest information provided by the Agency in its Second Note, the Trust accepts that a discrete issue concerning Area 1B, in particular the properties at Osney Court, has now been resolved. Appendix Q was wrong (as Mr Coombs explained) to assume a difference in flooded properties between the scheme and Scenario A1.<sup>556</sup> This now appears to be agreed. As a result, the PVD values would not include a differential between Scenario A1R and the scheme. The Trust accepts that this should also affect the PVD values assumed for the scheme itself. It also accepts that when this correction is made, a calculation which uses Mr Coomb's figures would lead to an iBCR of more than 1 between Scenario A1R and the scheme.
- 476. However, again, it is important not to lose sight of the fact that, as Mr Coombs explained, the fundamental problems in the Appendix Q work require wider remodelling. The latest Agency position on iBCR remains unsatisfactory for these reasons, as well as others that are set out briefly below.
- 477. The Agency figures in its Second Note are largely predicated on calculations which consider the incremental difference between the PVD of the scheme and Scenario A1R only in the 1% AEP event (albeit over the lifetimes of these alternatives) which in the case of Area 1A<sup>557</sup> is stated to be only 1% of the overall PVD figure for the relevant properties north of Botley Road. Similarly the analysis for Area 1B, Area 1C<sup>558</sup> and the Castle Stream area<sup>559</sup> focusses on a single event, rather than the wider differences in PVD which are supposed to be calculated by discounting average annual damages for all flood events.
- 478. The underlying assumption here is that Scenario A1R would be unable to improve performance in any event more severe than the 1% AEP event. Fundamentally, however, this assumption still requires modelling to test it. A PVD assessment of the form adopted in Appendix Q needs to consider other events at which different defence levels may still produce benefits that can be assessed economically.
- 479. In any case, the Second EA Note does not substantiate how it has broken down its PVD totals (which were provided to Mr Coombs) event by event in order to validate that 1% of total PVD comes from the 1% AEP event.<sup>560</sup> Nor has there been any satisfactory resolution of the incremental difference in benefits between the scheme and Scenario A1 (EA: £7.9m; Coombs: £7.23m),<sup>561</sup> when Mr Coombs has simply added together PVD figures that were supplied to him.

<sup>&</sup>lt;sup>555</sup> Table 5 CD3.29 p.16. Mr Coombs set out his figures in the RC Note: 8.14-23/16-17

<sup>&</sup>lt;sup>556</sup> Note 7.1-9/12-13.

<sup>&</sup>lt;sup>557</sup> 4.6/4 of the Second EA note.

<sup>&</sup>lt;sup>558</sup> Op. cit., 5.2-4/6.

<sup>&</sup>lt;sup>559</sup> Op. cit., 6.2-4/7. The different figures for each area are then relied on within Table 2 on p. 13 which gives a new iBCR figure.

<sup>&</sup>lt;sup>560</sup> Even the figure of £23,000, for example, which the Agency relies upon as the PVD differential for the 1% AEP event when considering Area 1A, is not 1% of the PVD it associates with either Scenario A1 or the scheme. These are shown as  $\pounds 2.79m$  in the case of Scenario A1 and  $\pounds 2.59$  in the case of the Scheme.

<sup>&</sup>lt;sup>561</sup> Second EA Note 8.14/16 and 8.17/12.

- 480. Overall, having regard to the in-principle problems with the Agency approach, the Trust remains unpersuaded that the Agency, through Appendix Q and its subsequent exchanges with Mr Coombs, has produced a reliable assessment which justifies rejecting the so-called "no channel" option.
- 481. The problems Mr Coombs identified with Appendix Q also need to be seen in the context of the particular nature of the MG4 grassland that would be lost. The Trust does not understand disbenefits of damage to habitats (such as the MG4 at Hinksey Meadow) to have been monetised.<sup>562</sup> If so, then it is far from clear whether even the accepted extent of loss of MG4, as "irreplaceable" habitat, has been properly allowed for in the discounting of alternatives.
- 482. When focussing on the detail of Appendix Q and the implications of Scenario A1R in this way, it is perhaps easy to forget what the iBCR figures do not show on their face that with a relatively small degree of refinement to proposed defences, an alternative could allow for the retention of nationally significant grassland at Hinksey Meadow. The Trust has always accepted the obvious point that a "reduced channel" solution which leaves its land intact would have some effect on the conveyance of water and therefore flood levels under an amended scheme. But it is wrong to jump from that starting point to the conclusion that the Agency appears to have reached that it should not countenance *any* decrease in conveyance that leads to *any* possible (but unassessed) increase in flood water levels in Oxford, or *any* refinement to defences that the Agency proposes anyway. That the Agency has done so, when the loss of such a valuable ecological resource is at stake, makes its reductive approach all the more difficult to justify. It has failed to demonstrate that Scenario A1R would fail to meet the strategic objectives for the scheme, or recognise how in some respects it would offer an improvement in particular the retention of the valuable MG4 grasslands.
- 483. The desired application of basic engineering or hydraulic principles, to reduce unpredictability, would still apply. Most of the proposed channel would be retained. Scenario A1R would remain an essentially passive solution, similar to the proposed scheme, with insignificant changes in water levels. The scheme is already predicated on accepting inundation in areas of the floodplain outside the proposed channels; and it already proposes new defences. Again, the suggestion that any deviation from the scheme justifies the immediate rejection of an alternative is unduly superficial. Scenario A1R would provide substantial flood risk benefits, but without destroying irreplaceable habitat. The land take of the channel at Hinksey Meadow would be avoided and there is no evidence of any significant change in land take that would be required in the alternative.
- 484. Two further, related, points need to be made on alternatives. The first is that the Trust has always accepted that Scenario A1R would not on its own resolve the fundamental issues with the groundwater assessment which risk the loss of the retained MG4 grassland at risk. The further work that is required to produce a robust assessment would still be needed to allow Scenario A1R to proceed. This is no comfort to the Agency. As mentioned, its own evidence accepts that even the direct loss of MG4 should only be sanctioned if potential effects on the remainder of the MG4 at Hinksey Meadow are fully mitigated. Should the concerns of the Trust about groundwater be accepted, it is reasonable to expect that the scheme would be reviewed. If those concerns could somehow be resolved, starting with an adequate groundwater assessment, the alternative assessment would still be flawed.

<sup>&</sup>lt;sup>562</sup> RC Note 8.23/17.

485. The second point is that the need for the Agency to show greater rigour, in its treatment of groundwater impacts and alternatives, must be seen in the context of how long it has already taken to bring forward its proposals to alleviate flooding in Oxford. It has not yet obtained planning permission for the scheme, having submitted its original application in April 2018, before withdrawing it and submitting another one two years ago.<sup>563</sup> The latest application relies on a strategy to alleviate flooding in Oxford that the Agency began working on before 2010. Even by August 2022 Appendix Q was on its fifteenth revision. In the light of this chronology, there is good reason to not confirm any order until the Secretary of State can be satisfied that the Agency has properly assessed both groundwater impacts and alternatives.

### Conclusion

- 486. The Trust has been at pains to emphasise that it takes very seriously the step of appearing at a public Inquiry into a scheme that has been proposed to alleviate flooding in Oxford. As the scheme developed, the Trust made all reasonable attempts to discuss its concerns with the Agency, despite its frustration with how the Agency failed to give due consideration to the value of the MG4 grassland when developing options for the scheme. But even after considering the Agency's evidence with sedulous care, it cannot support this scheme in its current form.
- 487. It remains unconvinced that the Agency has carried out anything like adequate analysis of the potential indirect effects on the retained MG4, or of mitigation and compensation proposals. It has not properly explored alternatives to the loss of the MG4, because it has taken an unjustifiably reductive approach to the scope of its options appraisal; and it has embedded an unfair methodology for comparing alternatives to the scheme. It has not done enough to show, using its term, that the loss of MG4 grassland at Hinksey Meadow is "unavoidable". As a result, the Agency has squandered the opportunity properly to balance the importance of the grassland against the requirement for flood alleviation. The Agency is promoting a scheme which has an impediment to implementation and is in any case contrary to planning policy. It has failed to demonstrate a compelling case for the Order.
- 488. The Trust therefore asks the Inspector to recommend to the Secretary of State that this Order not be confirmed, and asks the Secretary of State not to confirm this Order.

# Ferry Hinksey Trust (OX 027S) / Oxford Flood and Environment Group (OX 012N)

489. The material points taken from the closing submissions are as follows:

#### Introduction

- 490. The Trustees of the Ferry Hinksey Trust (FHT) and the Oxford Flood and Environment Group ("OFEG") share the local community's concerns about flood risks in Oxford. They are part of the local community. They have been flooded themselves. They agree that flood alleviation works are needed in Oxford.
- 491. But the flood alleviation works need to be the right works.

<sup>&</sup>lt;sup>563</sup> Canavan proof 3.19-20/14.

- 492. It is for the Agency to show that their proposals are the right works. They have not done so. In short, FHT & OFEG have shown through their evidence to this Inquiry that there has been inadequate consideration given to alternatives to the CPO scheme.
- 493. This is of fundamental importance, since it is for the Agency to demonstrate that there is a compelling case in the public interest justifying the compulsory acquisition of land. It is a feature of this high threshold to justify compulsory acquisition of private land that proper consideration must be given to whether the purpose for which the AA is proposing to acquire the land could be achieved by any other means.
- 494. This is not just to ensure that FHT's land is not taken absent it being shown that the necessary compelling case in the public interest is made out by the Agency. There are also significant public interests in avoiding:
  - the expenditure of huge amounts of public money on the wrong scheme;
  - the significant environmental harm to Hinksey Meadow and environmental harms to the FHT's land;
  - the significantly greater levels of construction traffic impacts (which would be lessened without a need to transport away all the land required to construct the proposed channel); and
  - the inevitable and avoidable changes to the landscape and current recreational use of the western floodplain.
- 495. Due to their concerns about the inadequate consideration given to alternatives, FHT & OFEG took the very serious and expensive step of instructing a flood expert, Mr Carpenter. He was instructed to review the Agency's approach to alternatives, in order to provide his expert opinion as to whether the Agency had properly followed their own guidance and stepped through the minimum necessary hoops. Regrettably, his conclusion is that the Agency's work falls short.
- 496. As Mr Carpenter emphasised in answer to the Inspector's questions, when one considers the proportionality of examining at least one other no-channel alternative to the same degree as the CPO scheme, and balancing the relatively minimal cost of doing so against the £24 million cost (at least) of constructing the proposed channel in the western floodplain, the obvious answer is quite simply that not enough has been done to interrogate alternatives.

### The guidance relating to the selection of options

- 497. The guidance relied upon by the Agency, the FCERM-AG (**CD5.6**) sets out a process whereby scheme options are refined through the identification of a long-list of options, which are subsequently reduced to a shortlist. That process, as Mr Harding agreed (XX), can involve combining and refining options to improve their outcomes (Guidance, §8.8). It was through this process of refining options that a no-channel alternative was capable of being identified, refined and properly assessed against the CPO Scheme.
- 498. This is not however what happened. None of the four no-channel potential alternatives assessed by Mr Carpenter in his evidence were identified as part of the scheme development process undertaken by the Agency. That is, the no-channel

potential options did not form part of the long-list or short-listing process, as the CPO scheme moved from outline appraisal (scheme outline case) to detailed appraisal (outline business case) and draft full business case.

- 499. Appendix Q (the OFAS Western Conveyance Channel Review, CD3.29) came along after the Outline Business Case had been completed. As Mr Harding agreed, it was not an exercise which sought to refine and test the flood defences in this option. Appendix Q removed the channel from the CPO scheme design (in scenario A1, just in North Hinksey Meadow, and in scenario A2, between Seacourt Stream to Old Abingdon Road), and simply then assessed the effectiveness of these two scenarios.
- 500. What it did not do was seek to refine, adapt or introduce any other flood defence measures different to those designed for the CPO scheme. It was, as Mr Raynor properly accepted in his rebuttal evidence to FHT & OFEG's evidence (see §§4.2 and 4.9) also biased against the no-channel alternatives it assessed, in so far as it did not take a like-for-like approach in raising roughness levels between the CPO Scheme and the alternatives.
- 501. The outputs of Appendix Q, in Mr Harding's words, were purely economic. That is, they were outputs designed to assess the relative economic performance of the alternatives against the CPO scheme using the same inputs as the CPO scheme. The Appendix Q analysis was in this respect entirely self-serving. It was inevitable that its two alternative scenarios would perform less well as against the CPO scheme in terms of flood alleviation. It can be reasonably anticipated that any flood defence scheme which has a component removed will perform less well.
- 502. This is all the more so when it is appreciated, as indeed the Agency have sought to emphasise, that the CPO scheme has gone through a process of refinement to optimise each part of the scheme as against the other parts. It is a scheme that in other words needs to be looked at on the basis that each of its parts is designed in a way which works best with the other parts. That is just a matter of sensible design and engineering.
- 503. It must follow, as indeed Mr Carpenter's evidence (XiC) explained, that in respect of the two no-channel scenarios examined in Appendix Q, there was no exploration of possible alterations, additions or combinations to improve either of these scenarios. On the basis of the Guidance, however, if either of the two no-channel scenarios examined in Appendix Q were identified in the long-list to short-list process, or indeed any other no-channel options, such optioneering would have been undertaken.
- 504. That is, there would have been examination of whether, among other matters, the flood defences optimised for the CPO scheme could be altered, added to, or combined in order to achieve better flood alleviation outcomes. The effect of all this is to put the no-channel alternatives at a disadvantage. While the two scenarios considered in Appendix Q necessarily perform less well, the fundamental points is that the potential for there being a no-channel alternative is dismissed by the Agency before any optioneering is even undertaken.

### Failure to consider no-channel alternatives

505. What then are the reasons offered by the Agency for not applying the Guidance to examine at least one other no-channel alternative to the same degree as the CPO scheme? It is said that it is either disproportionate to do so, or that it is not reasonable to do so (because it is reasonable on the Agency's case to discount a no channel alternative

without fully investigating whether it could achieve similar, or even better, flood alleviation).

- 506. So far as proportionality is concerned, Mr Harding agreed (XX) that the directions given in the Guidance about proportionality required consideration of the implications of any proposal (see the Guidance at §3.1.3(2), page 15), and that those implications in this matter necessarily include the compulsory acquisition of land, albeit he also agreed that the current Guidance does not provide any definition of proportionality.
- 507. Even the definition in the previous guidance makes clear that deciding what is proportionate requires the application of judgement. Mr Harding's further agreement that the compulsory acquisition of land the compulsory taking of a person's property rights should be given substantial weight, is therefore of particular significance. Such matters should properly weigh heavily in any proper proportionality assessment.
- 508. The proportionality assessment that was accordingly required was one which considered the allocation of some limited additional resources on the one hand (these being the resources of some further investigations / optioneering of options which do not (see further below) require the compulsory acquisition of land), as against the substantial weight given to the avoidance of compulsory acquisition of land on the other hand.
- 509. As Mr Carpenter explained in answer to the Inspector's question, the cost of investigating these potential alternatives is a fraction of the £24 million that would be saved if they demonstrated that a channel (and its costs) were not required to deliver flood alleviation benefits in Oxford. Mr Carpenter's further point was that, of course, these £24 million of costs for excavating the channel and moving and locating the displaced earth, could be well in excess of that figure.
- 510. There is a further and also significant point. Ms Formoy confirmed (XX) that the Agency did not in its economic analyses put a cost on (or monetise): (i) the disbenefits of the CPO scheme relating to the damage to habitats (of principal concern here is of course Hinksey meadow, but there is also environmental harm to the FHT's land), (ii) changes to landscape and current recreational use, and (iii) construction traffic impacts (which plainly will be much worse if there is a channel to be excavated, and will cause significant reputational damage to Oxford).
- 511. This is of course in contrast to benefits, including ecosystem benefits, which were valued. These impacts would, or at least are much more likely to, be entirely avoided by a no-channel alternative. Exactly because these matters were not monetised, any proportionality assessment should have factored in these matters as (significant) implications of the proposal.
- 512. A properly calibrated proportionality assessment should have decisively resulted in a conclusion that investigation of a properly optioneered no-channel option should have been undertaken.
- 513. So far as simply discounting a no-channel alternative is concerned, there are several reasons why that is a plainly unreasonable approach. First, the Agency's concerns about certainty and reliability in truth amounted not to an absolutist binary position that the CPO scheme is certain and reliable, and any no-channel option is uncertain and unreliable, but rather a position in which the Agency judged the CPO scheme to be more certain and more reliable than the alternatives that have at this time been identified (but not yet fully developed).

- 514. Mr Harding accepted (XX) that he was not suggesting, for example, that the CPO scheme would be 100% certain and reliable. It must follow that the CPO scheme is in this sense also uncertain and unreliable. It is not promised to be infallible. Language is important here. In effect, the description of a no-channel alternative as "*uncertain*" should be understood as meaning "*less certain than the CPO scheme*".
- 515. What is also important to again emphasise when considering these relative levels of certainty is that the no-channel alternatives reviewed in Mr Carpenter's evidence are not put forward as fully worked-up alternative schemes. This is a point Mr Carpenter repeatedly emphasised (XX). So the assessments of relative certainty and reliability have to be understood as comparing on the one hand something that has been refined, optimised and interrogated, compared to potential alternatives which have not been, and so which have unexplored opportunities to deliver similar (or potentially greater) benefits, but without the same disbenefits.
- 516. The fact that we are talking about relative assessments of certainty and reliability also necessarily begs the question of how such judgements about certainty and reliability are made. They say, in this regard, and on proper analysis, that the points on reliability and certainty overlap to a significant degree.
- 517. The CPO Scheme relies in higher flood events upon the inundation of the whole of the western floodplain. That is, the flood extent of the CPO scheme is similar to that modelled for all the no-channel alternatives. This means that once the flood levels exceed both the primary and secondary channel, the CPO scheme is relying upon the areas of the floodplain outside of these channels (which is modelled to occur at least every 2 years, on a 50% AEP<sup>564</sup>).
- 518. As Mr Carpenter explained, therefore, floodplain flow conveyance is required to make the CPO scheme work outside of the two-stage channel, just as it is required to make a no-channel scheme work.
- 519. The Agency's flood model is considered fit-for-purpose for all flood events, including those that use the wider floodplain. Mr Carpenter's evidence, therefore, was that if the flood model can adequately predict flow conveyance for the CPO scheme in the non-channel areas, then it would be able to do so for a no-channel alternative also.
- 520. Further in this regard, it will be recalled that Mr Raynor's evidence was that the flood model had gone through an exhaustive process of verification and calibration, had been reviewed by specialist experienced modellers at an independent consultancy company, and so can "*effectively simulate flood events in Oxford*" (proof, §9.11). Well, exactly, and so it can also simulate flood events in a no channel scenario.
- 521. The differences in flood levels shown on the western floodplain between the CPO scheme and the potential (and, they emphasise, non-optimised) alternatives as shown on Table 4 of the Edenvale Young ("EY") report<sup>565</sup> are typically 3 4 cm different. As Mr Carpenter explained, even bearing in mind the different flood event modelled by EY, the differences between flood levels (and extents) are small, and floodplain interventions are just as able to be undertaken if either the CPO scheme or one of the potential alternatives was in use.

<sup>&</sup>lt;sup>564</sup> CD3.38a, Detailed Design Hydraulic Modelling Report, Figure 8.6 (internal page 77).

<sup>&</sup>lt;sup>565</sup> Appendix 1 to Mr Carpenter's proof.

- 522. Mr Carpenter properly accepted that the CPO scheme would allow the channel to be maintained and controlled by the Agency. However:
  - As set out above, the CPO scheme also relies on the wider floodplain and the Agency's case is that they understand how flooding will operate on that wider floodplain, necessarily meaning that understanding could be applied to a nochannel alternative (which would continue to make use of existing watercourses);
  - In so far as the lack of a channel creates some higher level of risk of blockages in particular locations, it has to be remembered that the floodplain is up to 500m wide in places. It is important not to overstate the impact of a blockage or even several blockages across the floodplain, bearing in mind the Agency's confidence in its own flood model;
  - That flood model will have been based upon existing land practices. Those practices are capable of continuing in the future, including because as Mr Carpenter explained, landowners have no interest in increasing the flood risk on their land, meaning that there is every reason to believe that they will cooperate with the Agency in the future in terms of best land management practice;
  - The Agency's case is that it will take positive steps to maintain the channel if the CPO scheme were to come forward (to ensure its intended operation in a flood event). It is just as capable of taking positive steps to engage with landowners on best land management practice going forward.
  - The ability to take such steps answers the Agency's assertion that it may need to acquire more land if there was a no-channel scheme;
  - Even on the basis of the Agency's case that there will be greater conveyance of flood water over the western floodplain (though not greater than the pumped twin pipe potential alternative), on the basis that the flood extents remain the same, discounting the other no-channel alternatives without properly interrogating how flood depths and durations might be different and might be managed is not in FHT & OFEG's submission reasonable.
- 523. For all the above reasons, it simply cannot be said that the Agency was right to summarily dismiss, as it did, the potential no-channel alternative canvassed in evidence before the Inquiry without any proper investigation of how such potential alternatives might be optimised.
- 524. Appropriate future investigations can take account of the recent flooding in Oxford, and can test both the CPO scheme and a properly optioneered alternative or alternatives against this latest event (be those alternatives one of those discussed in Mr Carpenter's evidence, or raised by other parties to the Inquiry).

# The potentially viable no-channel alternatives

525. As they explained, while FHT & OFEG's concerns led to the significant step of incurring the expense of obtaining modelling data, the resources of FHT & OFEG are understandably limited. It is not possible for FHT & OFEG, with their limited resources,
to undertake the sort of refinement and optioneering work which has been done to the CPO scheme.

- 526. In any event, it is the Agency's job to demonstrate that there is a compelling case in the public interest for the acquisition of FHT's land. As set out above, it is an aspect of that justification to show that they have given proper consideration to whether the purpose for which they are proposing to compulsorily acquire land could be achieved by any other means.
- 527. While FHT & OFEG's case is that the potential alternatives discussed by Mr Carpenter are just that, i.e. potentials, the importance of not summarily dismissing these alternatives (nor for that matter the alternative advanced by OPT) is underscored by the modelling work by EY relied upon by Mr Carpenter. These results show that the lack of consideration given to potential alternatives is not just some theoretical objection. The modelling shows the potential for there to be similar beneficial effects from a no-channel scheme.
- 528. The modelling results presented by Mr Carpenter, as he explained, used the 1%AEP (2016) and not the 1% plus 11% used for the CPO scheme's design. He properly accepted (XX) that what then was modelled in his evidence was a more frequent flood event. It remains the case, however, as Mr Carpenter explained, that the modelling results in his evidence allows a comparison to be drawn with the CPO scheme and the alternatives.
- 529. Significantly, all the alternatives shown in the EY modelling show a reduction in flood extents compared to the baseline, and in places with alternative A2R (raised defences) show flood reductions compared to the CPO scheme (INQ/32).
- 530. The fundamental point that then arises so far as a no-channel alternative is concerned, is that the modelling that has been undertaken has either assumed that the same flood defences (aside from the channel) will be in place, or in the case of alternative A2R, that those same flood defences are in place but with their height extended vertically ("glass-walled), but not horizontally.
- 531. There is an inherent limitation in the potential alternatives analysed for this reason. The retained flood defences have been designed and optimised for the CPO scheme. There is an inherent bias if those same defences are used for another alternative without properly interrogating what defences are best for that alternative.
- 532. The Inquiry heard debate in XX of Mr Carpenter and Mr Raynor regarding the scope to which the CPO scheme's flood defences might be able to be amended, what potential limitations existed in respect of those amendments, and the potential effect of such amendments.
- 533. They say care is needed here. FHT & OFEG do not purport to have fully worked-up alternatives, and have not investigated (as Mr Carpenter explained in XX) whether there may for example be feasible engineering solutions which are capable of overcoming the limitations to the raising of certain flood defences (though Mr Carpenter considered this likely).
- 534. Mr Raynor agreed (XX) that the same level of optimisation had not been carried out with any of the alternatives put forward by FHT & OFEG as had been carried out with the CPO scheme. In ReX he indicated that the design work for the CPO scheme should have explored whether the limitations of certain flood defences could have been

overcome. But this does not answer whether it is technically feasible for such a solution to be developed.

- 535. That is, proper optioneering of a no-channel option, which does not rely upon a channel but which also does not have the costs of such a channel would be able to explore other engineering solutions that could result in additional or amended flood defences, including what might be described as other significant engineering solutions. They say "other significant engineering solutions" since the digging of a two-stage channel in the western floodplain is itself plainly a massive piece of work.
- 536. What Mr Carpenter's evidence demonstrated was that the potential alternatives at the least warranted further investigation and optioneering, to see if additional or amended flood defences could be put in place with a no-channel alternative which could achieve the same or similar beneficial flood alleviation effects, without however the significant environmental cost of the CPO scheme, and the need for the compulsory acquisition of FHT's land.

#### Lack of engagement

- 537. FHT & OFEG's complaint about lack of engagement is connected to the above matters. That complaint (see Ms Murphy's and Mr Durham's evidence) is that the Agency did not properly engage with FHT & OFEG on how no-channel alternatives might be further developed. That is, despite invitation, the Agency declined to explore how a no-channel alternative or alternatives could be optioneered in order for there to be a fully worked up no-channel alternative against which the CPO scheme was able to be compared.
- 538. It is telling that despite the consultation events that the Agency did conduct, the evidence from Ms Murphy and Mr Durham was that on the important issue of alternatives, they did not consider that their concerns had been listened to. That is powerful evidence that the engagement that did take place was ultimately just not good enough.
- 539. The XX of Ms Murphy and Mr Durham provided no satisfactory answer to this core complaint. There is no dispute that the Agency undertook multiple consultation events. But what matters in this context is specific and detailed engagement about potential alternatives. This was not done, and represents a failure given also all the matters set out above as to the need to have investigated potential no channel alternatives further.

### Ecological, recreation and amenity impacts

- 540. As they set out in Opening, the CPO Scheme will cause irreversible harm to precious, extremely rare, and valued environments, which have unique ecological and biodiversity characteristics, and which bring significant recreational and amenity benefits to the local community. Key among these environments is the MG4a grassland in Hinksey Meadow, which has been described as among the finest examples of the surviving habitat in the County, and possibly the UK. FHT's land also has important ecological, amenity and other value in its own right.
- 541. Ms Burt agreed (XX) that the western floodplain is an area of particular recreational and amenity importance to residents of West Oxford, and that it is highly valued to local residents for the amenity and related health and wellbeing effects that are provided by access and use of the floodplain.

- 542. Necessarily, this enjoyment would be severely curtailed during the construction of the CPO scheme, and once constructed, FHT & OFEG say that the lowered and cleared channel will damage the character of the area both through the loss of irreplaceable meadow bio-diversity and through loss of tree cover. The historic byways will be lost, the ability to enjoy circular works and roam across the meadows will be severely curtailed by the channel, and it will be nearly a generation (20 30 years) before the proposed trees could in theory be properly established.
- 543. The depth of feeling about this issue was plainly apparent from Ms Murphy's evidence. The richness and variety of the ecology of the meadows, the way in which the meadows are enjoyed for their ecological richness and great amenity value, and the importance of the accessibility of this wonderful space in close proximity to West Oxford, were all eloquently and passionately expressed by Ms Murphy.
- 544. These are important considerations in their own right, and for the reasons set out by OPT in its submissions on ecological matters, which FHT & OFEG adopt. They are also important since they say they should have borne on the Agency's decision-making regarding the exploration of no-channel alternatives, and whether or not it was proportionate / reasonable to undertake further investigations of such alternatives. For all the reasons set out above, they say such investigations should have been undertaken.

# Conclusions

- 545. For all the reasons set out above, and advanced in evidence at the Inquiry, the Agency has failed to show that there is a compelling case in the public interest such as to justify the confirmation of the CPO.
- 546. The Inspector and the Secretary of State are urged to provide a clear statement to the Agency that a scheme such as this quite simply cannot be used as a basis to acquire land and cause the significant environmental and other harms described at the Inquiry, without it being shown that this is the right scheme.
- 547. They therefore ask the Inspector to recommend to the Secretary of State that this Order not be confirmed, and ask the Secretary of State not to confirm this Order.

# Dr Sally Prime (OX 025S)

- 548. The scheme will impinge on her local environment and the daily lives of her household. The scheme will cause irreparable damage to sensitive MG4a grassland in Hinksey Meadow, where the Framework encourages environmental protection and BNG. The construction of the scheme is complex and overwhelming and will cause distress and disturbance to all the inhabitants adjacent to it for at least 3 years. The scheme overall will deprive local wildlife of its peaceful habitat, and many trees, birds, animals, insects and rare plants will die. The scheme will degrade the floodplain in ways that nobody can predict.
- 549. The community have taken it upon themselves to care for the local environment, by clearing streams of litter, weeds and debris. As well as monitoring the wildflower meadows for their fauna and flora. Most people have had enough of construction projects and whilst there is sympathy for those people whose houses flood, those people that use the open spaces impacted by OFAS the impact will be major adverse.

The community is supportive of the objections to OFAS as seen by the donations made to the Just Giving page on the internet.

- 550. It would appear that it is the value of the environment versus public benefits and irreplaceable habitats versus compensation. The removal of over 2,000 trees is a poor way to prepare for climate change. The creation of more ponds and swales will just provide increased habitat for mosquitoes, which carry and spread Dengue Fever.
- 551. The things that she is most concerned about are:
  - Loss of wildlife. She is speaking up for these unwitting victims, because they are our friends. They did nothing wrong and we need them for our own survival.
  - Restriction of access on our vital local routes. While she is aware that steps are being taken to keep Willow Walk open, there are other paths that have been used by walkers and riders ever since she came to this area over 30 years ago. Walkers will now be faced with fences and restrictions, the most egregious being the loss of the through route via the electric road from Ferry Hinksey Road to South Hinksey, but in addition the loss of a permissive path running from a stile in North Hinksey Village over another stile to the bridge crossing Hinksey Stream and then over a defunct scaffolding bridge now converted into a wooden version crossing Hogacre Ditch, then onward along the path adjacent to Bulstake Stream, over the Electric Road and eventually joining the Thames towpath via another stile. This path does not even get a mention in the Recreation and Public Access map.
  - The change in water levels may affect plants and trees. For example, her own garden, which is low-lying relative to her house and is subject to regular seasonal flooding, may dry out.
  - Invasive Himalayan Balsam will be the big winner in this scheme. Their seeds will be strewn all over a wide and freshly dug area by the first floods. Several attempts have been made to control it, with only limited success. The Agency have not demonstrated that they are committed to the multi-year cutting/strimming plan that would be required to eradicate it.
  - She is also very concerned about the effect that all the stress caused by this disruption will have on local people, even those who live further away, but pass through the area regularly either to travel to Oxford or use the local sports facilities.
  - The Agency persistently down-play the effect of the scheme on the local population. E.g., Table 5.3 of the ES accords *"nil to moderate adverse"* impacts for *"Temporary impacts on the health of users of existing areas of open space through loss of opportunity for physical activity, socialisation and loss of restorative effects of nature"*. She disagrees that the effect is temporary, since general access rights to the area will be restricted by the channel and the general environment will take many years to recover (if it ever does). Also, it is not correct to dismiss these factors on people's mental and physical health as nil to moderate. The recent and ongoing closure of Willow Walk has caused huge disruption and stress for the people who need this route, and also damage to the surrounding environment as people seek practical ways to get to their schools and workplaces, and to walk their dogs.

- Last but not least, she is far from convinced that the channel component of the scheme, the most disruptive part of it, will have sufficient extra impact to justify all the above problems. If the scheme is modified to only build the other defences, bunds etc. then most of the projected flooding will be alleviated. Of course, this will mean that material to build the bunds will have to be acquired from elsewhere, which will add to their cost considerably, and also cause a lot of disruption, but she does not think this is an argument in favour of building the channel. Regarding this, make Thames Water build a new reservoir, as is urgently needed for their burgeoning population in the Southeast, and get the required material from them.
- 552. Further genuine efforts are needed to find a solution to Oxford's flooding problems without the use of a channel.

# James Wynne (OX 010S)

- 553. Mr Wynne lives about 2 miles from the proposed flood alleviation scheme (OFAS) but he has a license to use about 8 acres of land adjacent to Seacourt Stream ("the Field"). About 3 acres of the Field is subject to the CPO, and access to about 150m of Seacourt Stream will also be lost.
- 554. He is the Chair of Trustees of the 4th Oxford Scout Group (a registered charity) ("the Scout Group") which is adversely affected by the scheme, but he makes objections personally, intending to support the interests of the Scout Group.
- 555. The Scout Group meets on a temporary basis at Oxford Rugby Club, having been told by North Hinksey Parish Council to leave its scout hut of 50 years in early 2021. It needs to build a replacement scout hut if it is to continue its activities beyond the short term. This is because it meets on five nights a week (it has 165 young people, almost the largest group in Oxfordshire) and sometimes at weekends, both for the meetings young people attend and for other meetings and activities that support that, and it needs extensive storage and tent drying facilities. There is no building in the local area that can provide this, whether an existing building or one planned. Furthermore, there is no similar facility which can provide these activities as other scout buildings are some way away, at capacity and would only be accessible by private car.
- 556. He holds a licence to use the Field on trust for the Trustees of the Scout Group, pending the Scout Group agreeing what is intended to be a 99-year lease of the Field. The plan for the Field is to build a new scout hut in which the Scout Group can meet, on the raised ground adjacent to the rugby club's land, and also to provide facilities for other scout groups and the local community to use. The viability of the project will be significantly reduced if the Scout Group loses access to the three acres and to the 150m of Seacourt Stream. The future of the Scout Group is at risk if the hut project does not succeed.
- 557. The project will enable users to access the outdoors and will rely on capital and income generated by those users to build the scout hut and to maintain it. The quality and quantity of the outdoor space will be significantly reduced under the OFAS, reducing the appeal of the site to users, reducing the volume and character of the activities that can be caried out, and therefore reducing the number and range of potential users, and in turn adversely affecting the capital and income that can be generated.

- 558. The loss of the three acres of the Field and of the access to the Seacourt Stream will have an adverse impact on young people (a group with a protected characteristic). The PSED is engaged. This impact will be both direct and indirect, it will be significant, but he believes it can be avoided if the OFAS is altered so that access to the Seacourt Stream is maintained and the three acres of land are returned to the Scout Group.
- 559. The Agency has suggested to him that at some point in the future some agreement on access could be reached, but he has no confidence that that would in fact materialise, despite the current goodwill. If a solution can be identified or agreed, it is more likely that this will be generated now, rather than in the distant future, and there is no benefit to delaying (or at least there is no benefit that outweighs the risk of no solution being identified and the adverse impacts then materialising).
- 560. To add some detail to the needs of the Scout Group for the three acres and access to the 150m of Seacourt Stream:
  - It is intended that the members of the Scout Group (and others) will access the 150m of the Seacourt Stream for play, fishing and crayfish fishing, for environmental projects and for eg raft building and pioneering (building structures such as bridges). These activities are of enormous benefit and not something that he believes can be replicated elsewhere.
  - The Scout Group (and others) would likely use the three acres as a wilderness space for young people to play and explore.
  - The uses described above would also operate as a resource for scout groups across Oxford especially inner-city groups without their own open space, they are all in the same scouting district, Oxford Spires. Similarly, for visiting scout groups from across the UK and abroad, with the attraction of the site and it being close to Oxford with all its visitor attractions.
  - He has had discussions with other potential users regarding forest schools, the Woodcraft Folk and bushcraft providers.
- 561. The 150m of river access is an irreplaceable amenity for the young people who will or would use the land, and it is a valuable component of this new scout hut project that must provide a breadth of activities to a broad range of people if it is to succeed. Without access to the river for kayaking, fishing and rafting, and for supervised play of all sorts beside the river, young people will be unable to do these activities. They are also activities that connect young people to the nature around them and will appeal to them and may well sow the seeds of an appreciation of the wider natural world something which is important for our community.
- 562. The proposed permanent loss of access to the 3 acres or so of land will also limit the utility of the site to the Scout Group. It needs the land to camp and to do other activities that need lots of space, such as archery. It also needs to plant trees over a significant area to create the wilderness for e.g., forest schools.
- 563. To make this new scout hut project viable from a planning and a fundraising perspective, the project needs to benefit not just the young people who are members of the Scout Group, but also other users and groups. The Scout Group's plan is to use the land for forest schools, other youth group meetings, and as a resource for outdoor, adventurous and nature related activities. The ability of the site to provide this will be reduced if three acres and access to the Seacourt Stream are lost, and he is concerned that the reduced facilities jeopardise the new scout hut project and thereby the future of one of the most successful youth groups in Oxfordshire.

564. The Scout Group would also gain a significant benefit if it had access to a pond for young people to learn kayaking/canoeing/rafting, and the current OFAS proposal appears to create a number of pools but these are located elsewhere, though nearby. If one of the larger pools in the scheme could be relocated into the three acres, this would be of significant benefit to the Scout Group and young people.

## Elizabeth Jukes (OX 024S)

565. Mrs Jukes interest in the CPO is that it covers an area equivalent to approximately 50% of her garden, including her car parking space. This will be used as a "temporary working area" during the construction of the flood wall around South Hinksey; thereafter the Agency wishes to acquire the permanent freehold of the land occupied by the wall, plus permanent access rights.

### The flood wall

566. The wall will run through her garden at the eastern boundary for approx. 25m, replacing an existing picket fence and a line of mature trees, including fruit trees, which will have to be felled. The wall will be of steel-pile construction, clad in stone. It will be 1m high above ground (with the steel piles extending several metres below ground) and 1m thick. She considers that this structure will be ugly and out of scale with her garden, which was thoughtfully designed and which she has maintained carefully over ten years. She does not think the use of pile-driving equipment is appropriate only 20m from her house (which is a listed period property). Furthermore, properties in South Hinksey, including hers, will continue to be vulnerable to flooding due to groundwater and overflowing sewers and storm drains, which happens at times of heavy rainfall.

### Impact of nearby works

- 567. As well as the works on her own property, she will experience prolonged disruption (vehicles, machinery, noise, vibration, pollution) from continual heavy construction activity on adjacent land. According to the limited information provided by the Agency, this activity will include:
  - Year 1: establishment of the works areas and haul route (which will pass through the field immediately behind her garden)
  - Year 2: construction of the Devil's Backbone bridge (11 months) and new defences around South Hinksey (5 months)
  - Year 3: main earthworks from South Hinksey to the Old Abingdon Road (with 75 x 20t tipper lorries per day using the haul route behind her property for a period of approx. 12 weeks)
- 568. She therefore faces the prospect of losing the peaceful enjoyment of her home and garden for several years. (There is no certainty around this timetable, and large construction projects often run behind schedule.)
- 569. In her view, the Agency has understated the impact that construction of this scheme will have on the community of South Hinksey (e.g. by using phrases in its Statement of Reasons such as: "*potentially moderate adverse effects*" from piling; "*minor adverse impacts on recreation*" from the temporary and permanent diversion of footpaths; "*some traffic disruption*").

570. South Hinksey Parish Council has said in its response to the proposals "The inevitable increases in pollution, noise and nuisance in South Hinksey will not be capable of being mitigated once the scheme is in progress. The residents of South Hinksey have a right to the quiet enjoyment of their homes and gardens, to have reasonable access to the road and walking/cycling network, to have their health and well-being respected and protected in the planning process, and to have our setting and environment - developed over many hundreds of years – to be taken seriously and not dismissed as a price worth paying. We repeat that this level of disruption will not be tolerable for the significant construction period proposed."

## Impact on the local environment

571. The Agency acknowledges in its Statement of Reasons that the scheme will have a "significant adverse impact on the rare floodplain meadow at Hinksey Meadow", and that approximately 2,000 trees will be felled. The Agency also acknowledges that "in order to deliver sufficient biodiversity net gain, additional terrestrial habitat creation … will also be undertaken off-site." This would appear to confirm that the much-loved local environment will be degraded and that a precious wildlife site will be lost. In her view, mitigation/restoration is inherently uncertain and it would be better to conserve the environment we already have, especially as there is no long-term plan for the maintenance of the site.

## Value for money

- 572. According to the Agency's Statement of Reasons, the Full Business Case values the long-term benefits of the scheme (option 6bii) at £1,536.4 million, with a BCR of 10.6. Meanwhile, the "do minimum" option of maintaining/replacing existing assets and watercourses + deployment of temporary barriers (option 2b) produces £1,303.9 million of benefits, with a BCR of 66.3.
- 573. It seems to her therefore that similar long-term benefits can be achieved without all the cost, disruption and environmental impact of this scheme, especially the excavation of the proposed flood channel. She hopes the Inquiry will consider the case instead for making smaller-scale improvements to the local infrastructure and good maintenance of the existing network of drainage ditches etc around the floodplain.

## Chancellor Masters and Scholars of the University of Oxford (OX 006S)

- 574. The material points taken from the closing submissions are as follows:
- 575. The University supports the delivery of the wider OFAS, however, has specific objections in relation to individual sites.
- 576. The University has three separate locations affected by the scheme and the University has objections in respect of all three areas. To the extent that the scheme and proposed acquisition of rights under the CPO affect land in which University IT infrastructure is located, the University is also concerned to ensure that no disruption is caused to its critical fibre network which provides internet access throughout the University. This is a private network and may or may not be shown on public utility plans/records.
- 577. Although the University is a partner in the OFAS, its principal duty, and that of its Council members (the charity's trustees), is to act in the best of interests of the University as a charity and to protect University assets in such a way as to best enable

the University to carry out its charitable objects (i.e. the advancement of learning by teaching and research and its dissemination by every means). To do this, objections to the OFAS are necessary and they write to object to the CPO on the following grounds.

### Egrove Park

- 578. The Agency proposes to take land within Egrove Park (Egrove) as exchange land for open space land and potential open space land for the purpose of the OFAS. Egrove is currently occupied by Oxford Said Business School Limited (OSBS). It is currently anticipated that OSBS will vacate Egrove within approximately two years and by not later than 16 June 2026. The University initially agreed to discuss part of Egrove being included in the scheme back in 2018, however, the Agency changed the location of the land required for the scheme and the revised area of land is not acceptable to the University. Also, given that OSBS will be vacating Egrove within the foreseeable future, the University now needs to keep all options open to ensure flexibility when determining its future use.
- 579. Representatives from the University held a meeting with the Agency and its advisors Dalcour Maclaren on the 8 July 2022 to discuss land matters at Egrove and whether the Agency's acquisition of the nearby site known as Kennington Pools gives rise to a requirement for the acquisition of exchange land. The Agency however could not advise the University of the status of the Kennington Pools site. Either way the status of the Kennington Pools land has a bearing on the extent of the land required at Egrove Park, if any.
- 580. At a meeting in December 2018, the Agency's advisors informed the University that the requirement for land at Egrove was dependant on whether other land deemed "public space" in the context of the CPO requires replacing by virtue of being acquired by way of a CPO. If heads of terms were negotiated with district councils, this Egrove land would not be required for the OFAS as agreements with other landowners would fulfil the scheme's requirements. However, the Egrove land is still included within the CPO and, to the University's knowledge, no agreements have been concluded with these other landowners.
- 581. The Agency has not demonstrated that Egrove is the most suitable site to meet the exchange land requirements, if indeed these are needed. The University requested that the Agency provide it with a copy of the OFAS Open Space Report so that the University could understand what alternative sites have been considered by the Agency. The Open Space Report has only now just been received and the University has not been afforded sufficient time to review in advance of the deadline for submission of the objection.

### **Buxton Court**

- 582. The University holds Buxton Court on a lease from Martin's Commercial Limited, the freeholder and sub-lets the whole to Oxford University Innovation Limited ("OUI"), a company connected to the University.
- 583. The Agency has a requirement for use of the car park and external access areas at Buxton Court for the siting of a crane for the lifting of a replacement bridge together with other works. The Agency has advised the University that it requires the car park area for a period of five years, however, it advised the University and the freeholder that the works will only take fifteen months. This is unacceptable to the University and OUI. The Agency has said it will arrange for alternative car parking at the local Park and Ride or a local retail store, however, nothing has yet been agreed with OUI, or confirmed by the

Agency and the University cannot accept this position of uncertainty. The Agency has also not yet confirmed the location of any alternative disabled car parking with easy access to Buxton Court.

- 584. It is understood that the Agency have now advised OUI that they have agreed in principle that the Park and Ride can be used as alternative car parking, however, this is caveated, in that there is no formal agreement in place for the designation/exclusive use of an equivalent number of car parking spaces for the period of the proposed works. This is unacceptable to the University and its tenant and sub-tenants, who would need at the very least to be guaranteed that the same amount of exclusive parking spaces would always be available as they currently have at Buxton Court.
- 585. This situation is unacceptable for the occupiers of the building as no attempt has been made by the Agency to discuss shorter time scales for the use of the car park, the location and size of alternative car parking and the provision of alternative disabled car parking spaces.
- 586. It is also unclear what use the Agency intend to use the car park for, as the remaining 45 months are not accounted for, and also therefore what disruption may be caused by the Agency's use.

### <u>Tilbury Farm</u>

- 587. The land at Tilbury Farm is agricultural land and although the University is happy to discuss the use of the land as part of the OFAS, discussions are not yet concluded. The University does not accept the current land take proposals which would leave the University with land which is rendered unusable as a result of the land the Agency currently propose to acquire under the CPO. The University is currently awaiting additional information from the Agency so that it can consider the proposals further.
- 588. Due to the protracted nature of the discussions, the University is left with no option but to object to the scheme until the parties have agreed terms which have been documented within legally binding agreements.
- 589. The University e-mailed the Agency's agent on the 3 March requesting an update on the proposals and a response is outstanding.

## Oxford University Innovation (OX 015S)

- 590. The material points taken from the closing submissions are as follows:
- 591. The University of Oxford holds Buxton Court on a lease from Martin's Commercial Limited, the freeholder and sub-lets the whole of the building to Oxford University Innovation Limited ("OUI"), a company connected to the University.
- 592. The Agency has a requirement for use of the car park and external access areas at Buxton Court for the siting of a crane for the lifting of a replacement bridge together with other works. The Agency has specified that it requires the car park area for a period of five years, however, it advised the University, OUI and the freeholder that the works will only take fifteen months. This is uncertainty is unacceptable to OUI.
- 593. It is also unclear what use the Agency intend to use the car park for, as the remaining 45 months are not accounted for, and also therefore what disruption may be caused by the Agency's use.

- 594. The Agency has said it will arrange for alternative car parking at the local Park and Ride or a local retail store, however, nothing has yet been agreed with OUI, or confirmed by the Agency and OUI cannot accept this position of uncertainty. The Agency has also not yet confirmed the location of any alternative disabled car parking with easy access to Buxton Court.
- 595. It is understood that the Agency have now advised OUI that they have agreed in principle that the Park and Ride can be used as alternative car parking, however, this is caveated, in that there is no formal agreement in place for the designation/exclusive use of an equivalent number of car parking spaces for the period of the proposed works. This is unacceptable to OUI and its sub-under tenants, who would need at the very least to be guaranteed that the same amount of exclusive parking spaces would always available as they currently have at Buxton Court. The scheme is set to begin at the same time as Botley Road is closed by Network Rail, increasing the demand on the Seacourt Park & Ride, therefore exclusive parking is required.
- 596. This situation is unacceptable for the occupiers of the building as no attempt has been made by the Agency to discuss shorter time scales for the use of the car park, the location and size of alternative car parking and the provision of alternative disabled car parking spaces.
- 597. OUI's main concerns, in respect of the OFAS, are set out below and it is felt that neither the Agency or its agents have addressed any of the points:

### <u>Crane</u>

- 450t crane proposed to remove a foot bridge seems excessive.
- There is a culvert running perpendicular to the stream below the car park. It is unknown if the culvert can withstand a 450t crane.
- Plate bearing tests were undertaken several years ago. It is unknown if this accounted for 450t crane.

### <u>Site Use</u>

- They understand that the site would be for crane/machinery and 'day materials storage'.
- No official response stating that the car park would not be used as a contractor car park or long-term materials storage yard.

### **Operational Impacts**

- Creates issues for disabled staff, staff with mobility issues that are not classed as disabled and staff with childcare responsibilities.
- Causes a significant disruption to the business as visitors will be unable to visit easily or conveniently.
- OUI has contractual obligations to two sub-under tenants. Without alternative parking there are financial implications for OUI.
- Cyclists are unable to access the areas of the car park where cycle storage is located.
- Access to bin storage will be impeded and waste disposal contractors will be unable to access the waste. This will create either waste disposal and/or health

issues or force the bins to be stored roadside, potentially creating additional issues.

- Car security: OUI provides CCTV in their exclusive staff car park and has a security service that patrols regularly (including overnight). Alternative parking will not provide this function.
- Staff regularly leave their vehicles in the staff car park overnight when attending work related events. This will no longer be possible and thus a financial impact on the business to provide secure overnight parking.

### **Environmental Factors**

- Dust/dirt: Whilst Buxton Court is air conditioned, as an environmentally conscious company they prefer to reduce the use of the system and utilise windows when possible; this will not be possible due to dust during the works and therefore increase their energy consumption costs.
- Fifteen months of work on the streambank is likely to create a significant amount of mud/dirt that could be tracked into the building by pedestrians. Keeping the site clean would help reduce/eliminate this (vehicles driving in/out likely to muddy the roads, pedestrians walking through it bring it into the building).
- Noise: They understand piling works will take place from Richer Sounds (neighbouring business); however, this is expected to cause significant noise and no accommodation or notice of this has been provided to OUI. Their staff work onsite regularly and are often on video calls with customers – significant noise will mean that they cannot do their job if working at Buxton Court, essentially making the site useless for their needs.
- Number of Noisy days/schedule of such is required to ensure that meetings can be organised at other times and locations which will result in additional costs to OUI.
- Vibration: Piling works could cause significant vibrations to the building, potentially damaging to the building infrastructure and causing disruption to OUI operations. Any damage caused by vibrations would need to be repaired rapidly by the Agency to ensure continued operations.
- 598. Due to the protracted nature of the discussions, OUI is left with no option but to object to the scheme until the parties have agreed terms which have been documented within legally binding agreements.

## Mr Beesley (OX 018S)

- 599. The Objector owns the property freehold land at North Hinksey, land registry reference ON370846. Accordingly, this Objection has been made to protect the Objector's position, pending a decision to: 1. Remove those property interests in question from the Order, and/ or 2. Reach an acquisition by agreement and agreement over compensation on appropriate terms.
- 600. For the following reasons as set out within his letter and his presentation to this Inquiry, he objects to this Order:

- The Objector is concerned about the impact of the construction of the scheme and its impact on the property.
- The use of compulsory purchase powers is premature; the AA has not made a meaningful attempt to acquire the interest by agreement.
- The OFAS will destroy the environment and the land will still flood.
- The Agency has not attempted to dredge the rivers and streams and clear out debris from under bridges to increase capacity.
- 601. The confirming authority will expect the AA to demonstrate that they have taken reasonable steps to acquire all of the land and rights included in the Order by agreement. The Order Statement of Reasons, para 15, states that:

"The Environment Agency has approached owners, lessees, tenants and known occupiers, for the purchase of the land and/or rights in land, that are required for the CPO Scheme and terms for such purchases on a voluntary basis were issued during Autumn 2018 ("the 2018 Terms"). The Environment Agency encouraged the affected parties to obtain professional advice to help steer them through the process of reaching a voluntary purchase agreement where appropriate. Each affected party was advised that they could engage a qualified surveyor to act on their behalf and that the Environment Agency would meet their appropriate and reasonable fees incurred".

- 602. The Objector has not had any meaningful discussions with the AA or their representatives and are unaware of any substantive efforts to make contact. This is contrary to the above paragraph 15 within the Statement of Reasons.
- 603. The AA wish to acquire rights over the property, the details of which are not clearly defined within the Order the Objector's land appears to have been included within a larger land interest belonging to the neighbouring owner and has not been identified separately.
- 604. Therefore, the AA has not taken reasonable steps to acquire the property by agreement nor is compulsory purchase being used as a last resort. Accordingly, the Order should not be confirmed.

## DB Cargo (OX 026S)

- 605. At the Inquiry DB Cargo updated parties on their position. They are continuing to negotiate with the Agency and Network Rail as a tri-party agreement needs to be agreed. A schedule of conditions has been circulated and agreed which provide guarantees during construction operations, which essentially deal with track and line side safety. Additional matters that still need to be confirmed are permanent and temporary access and private agreements concerning land transfer.
- 606. Accordingly, DB Cargo are not in a position to withdraw their objections due to these access concerns.

### THE NON-STATUTORY OBJECTORS (Who presented Evidence at the Inquiry)

### Riki Therivel and Tim O'Hara (OX 002N)

607. The material points taken from the closing submissions are as follows:

#### Background To the CPO

- 608. The CPO was made to create the main part of a 5km long flood channel, which is just part of the proposed flood alleviation scheme.
- 609. Other parts include: raised flood defences at four key locations; and measures to allow flood water to escape from the floodplain by going beneath the railway and three roads. The Agency would also provide new bridges to cross the new channel at six locations.
- 610. The scheme as a whole is intended to provide long-term flood alleviation, largely prompted by a series of floods between 2000 and 2013/14 (EA/1a 2.3).
- 611. However, it's important to understand that, since mid-2014, many flood alleviation measures have already been put in place (EA/1a para 5.9(a)). There is ample evidence that these, together with others works in 2015 and 2016 (OX023N/1a page 2), have significantly improved flood protection in Oxford. So, it's against this existing level of protection that any new scheme should be gauged.

#### Requirements for CPO

- 612. In their evidence (OX002N/1a) they referred to the Government publication "Guidance on compulsory purchase process and Crichel Down rules" (2019 edition). This provides the framework for making CPOs, and considering objections against the same.
- 613. Taken together, section 12 and 13 of the guidance mean that:
  - Confirmation of a CPO requires the minister (or her/his representative) to test whether there is a compelling case in the public interest; and that
  - The wider public interest is distinct from the intention of the AA, and the concerns of those with interests in the CPO lands. In this instance it provides the justification for looking at costs and benefits that go to the wider public interest, and not just those the Agency have considered.

#### The Two Key Issues

- 614. They believe there are two key issues related to the Agency 's proposed flood alleviation scheme.
- 615. First, there is strong evidence that the main part of the channel should be omitted from the scheme, based on the balance of costs and benefits. They will signpost this evidence, and explain why this removes the need for the channel, and therefore the CPO.
- 616. Second, the Agency have argued that the scheme must include the full planned length of the channel, and have provided reasons that go beyond the very limited flood protection benefits shown in their own modelling. So later they will outline the Agency 's reasons, and show why they are flawed, unconvincing and inadequate.

Benefit Cost Analysis of The Proposed Scheme And Alternative A2

- 617. Starting with benefit and costs. In arriving at their choice of scheme the Agency have identified two types of costs and benefits: those that can be included within the formal benefit cost analysis (BCA), and those that cannot.
- 618. Regarding the former: the BCA provides present day money values of 100 years of flood protection benefits, and the costs of providing these.
- 619. Benefits are defined as the flood damages that are avoided by the option being assessed. Therefore this measure takes account of both the severity of damage expected in a given flood event, and the probability of such an event actually taking place.
- 620. Costs within the BCA are limited to the direct cost of the option being assessed, including construction, maintenance, and land acquisition.
- 621. The Agency have modelled the proposed scheme. They have also modelled how omitting parts of the channel would alter the results of the BCA. Firstly Alternative A1, which omits the channel between Seacourt Nature Park and Willow Walk (i.e. in Hinksey Meadow). And secondly Alternative A2, which omits the channel between Seacourt Nature Park and Old Abingdon Road. The results of this modelling (CD3.29, Table 5, page 16) show that the total benefits, benefit-to-cost ratios and net present values of Alternatives A1 and A2 are comparable to the proposed scheme.
- 622. For example, the proposed scheme has flood protection benefits only 2.4% higher than A2. Moreover the higher cost of the channel means that the net present value (NPV, total benefits minus total costs) of the scheme is only 0.8% (£11.3 million) higher than A2 as it is currently modelled (CD3.29 Table 5, page 16).
- 623. However, the modelling of A2 and A1 was on the basis that no substantive changes were made to the scheme other than omitting the channel (CD3.29, page 2). This means that the other flood alleviation measures within A1 and A2 were not optimised to reflect the omission of the channel.
- 624. Regarding optimisation: there is evidence from Mr. Coombs regarding A1 (summarised in INQ/40), and Mr. Carpenter regarding A2 (OX 027S 4A) that the flood protection benefits could be increased by simply increasing the height of some of the flood defences.
- 625. There are other examples of optimisation of the alternatives that the Agency could have carried out but haven't. The proposed scheme includes the construction of several bridges which are needed in order to span the new channel. The modelling of bridges is included within A2 even though four of them are in locations where A2 omits the channel.
- 626. These bridges are Willow Walk, North Hinksey Causeway, an unnamed footbridge to the south, and a bridge at Devils Backbone (INQ/12 and CD2.15). They do not know what they cost, but they will cost something, and omitting them would reduce the cost of this option, which in turn would increase its NPV and benefit-cost ratio.

- 627. There is another way that optimising A2, and this could improve the flood protection it offers.
- 628. In their cross examination of Mr Harding (30/11/23) he confirmed that Willow Walk acts as a barrier to flood water moving from north to south. If the water cannot escape under Willow Walk, there is a risk to properties either side of Botley Road. For this reason the Agency installed six culverts under Willow Walk in 2011.
- 629. The way the Agency has modelled Alternative A2 means that these culverts would be removed and replaced by a new bridge. Following their cross-examination of Mr. Harding (30/11/23), he has provided a drawing and additional information about this bridge (INQ/42).
- 630. The drawing shows an excavation for the channel where it passes under the bridge. However, in the way the Agency modelled A2, the channel and the corresponding area of excavation would not exist. Water would only flow under the bridge when it was at ground level in Hinksey Meadow which is 55.7m AOD<sup>566</sup>.
- 631. At present, flood water can drain from Hinksey Meadow through the culverts at 55.0m AOD, so 70cm lower than the ground level at Hinksey Meadow, via a ditch between Willow Walk and Hinksey Meadow.
- 632. The Agency's modelling of A2 means that more flood water than at present would build up in Hinksey Meadow before it is able to get under Willow Walk. Clearly this is at odds with the efficient conveyance of flood water.
- 633. So optimising A2 at Willow Walk– which the Agency haven't done might involve adding more culverts set at the same level as the existing ones. This would surely be cheaper than building a large new bridge and provide better flood protection than what the Agency has modelled.
- 634. If optimisations led to the cost of A2 being reduced or its benefits improved, by just £11.4 million, then this would raise the net present value of A2 above that of the proposed scheme. This in turn would effectively make it the preferred choice within the BCA.
- 635. However, even if this wasn't the case there are other costs associated with the channel that should be taken account of when considering the wider public interest.

Costs Attributable to The Channel Alone

636. Firstly, there is the certain loss of 1.33 hectares of nationally rare, irreplaceable MG4a grassland in Hinksey Meadow, and risk to the remaining parts of the meadow. They believe Mr Byass and Mr Lyness have referred to these in more detail. Accompanying this is what Dr Rod Chalk estimates as the loss of 3,780 mature trees (OX027S/1a, page 21), with related impacts on biodiversity, insect and animal habitat.

<sup>• &</sup>lt;sup>566</sup> The bottom of the existing culverts under Willow Walk is 55.0m AOD (ie above mean sea level), which is level with the bottom of the ditch that is parallel to, and in-between, Hinksey Meadow and Willow Walk

<sup>•</sup> The top of the culverts is 56.1m AOD (diameter 1.1m)

<sup>•</sup> Hinksey Meadow ground level is an average of 55.7m AOD

<sup>•</sup> The underside of the proposed bridge is 57.13 AOD (see drawing)

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- 637. Second, the loss of amenity caused by the construction of the channel.
- 638. The EA have undertaken to maintain access to rights of way, Hinksey Meadow and other open space. However the work areas would have to be out of bounds for safety reasons, and this would reduce the space that could be accessed. Moreover, exchanging an intact iconic green space with open views of a giant construction site must comprise a loss.
- 639. Third there are the impacts on the A34. The construction of the channel would require excavation of 450,000m<sup>3</sup> of material, most of which is for the section of channel between Willow Walk and Old Abingdon Road. Much of the spoil for this would have to be removed by means of 25,000 lorry loads onto the A34 (and again 25,000 off the A34) via two slip roads at South Hinksey. Dr Therivel's evidence (OX002N/1a page 15) sets out the issues associated with this.
- 640. One is the safety risk presented by 25,000 heavily laden lorries accessing a busy trunk road at less than 10mph from a standing start (OX002N/1a, para 45-62). These impacts cannot be readily quantified in money terms, but they pose a safety risk that would affect anyone using this road during the three year construction period.
- 641. Another issue is the economic cost of traffic delays that stem from a 40mph speed limit for the three years of construction (OX002N/1a, Figure 3.10). These costs can be quantified and monetised (para 63-71). Dr Therivel uses Department for Transport methodology to calculate the cost to road users based on delayed journeys.
- 642. At para. 71 she concludes:

"The net benefits of the OFAS channel is expected to be £11.3 million. The cost of only slowing down traffic during the excavation of the channel would be £10.56 - £34.96 million, i.e. between 93% and 309% of the benefits that the channel is expected to bring over 100 years..."

- 643. Although the Agency dispute these findings, they have provided no estimate or calculations of road delay or its impact. It's as though they are indifferent to these costs. Indeed, when Dr Therivel cross examined Mr. Lear for the Agency (30/11/23), he suggested that it would be possible to deal with any unexpected traffic issues by reducing the speed still further, to 20-30mph. Obviously this would further increase the cost of delays to motorists.
- 644. The section of the A34 affected by the scheme is not only part of a nationally important trunk road. It is also part of the city ring road, and therefore it is important for it to flow freely for the functioning of the city itself. This is especially so given the city's endemic traffic problems.
- 645. Hence it is galling that the Agency 's evidence (e.g. EA/3a para 9.10, and EA/3c.1 page 186) talks about the value of keeping Oxford open for business, and makes claims for how the scheme will do this by keeping open transport links. Yet on the other hand the cost to the city of three years of reduced speed on the A34 merits no assessment or even a mention. The fourth cost of the channel stems from the opportunity cost of the extra money needed to construct it.
- 646. The Agency 's modelling of A2 (CD3.29 Table 5, page 16) shows it costing £24 million less than their proposed scheme. Moreover, as the Objectors pointed out earlier, there are grounds for believing an optimised A2 would save even more money.

- 647. During this Inquiry a National Audit office report (INQ/18 came to light, which states that the value of the existing £5.2 billion fund for flood and coastal defence has been eroded due to inflation. Previously it had been expected to provide protection for 336,000 dwellings, but price inflation has reduced this to 200,000.
- 648. In their cross examination (30/11/23) of Emma Formoy, they asked if money not spent on this scheme would revert to the central fund and she agreed. Hence money saved on the Oxford scheme would make it more likely that another scheme elsewhere could be funded. Surely saving £24 million to help other schemes is something that you might expect the Agency to support.

## Other Benefits of The Scheme

- 649. Whilst they have referred to the costs of the channel that are not included within BCA; the Agency have also sought to justify their scheme by identifying benefits that are not included within the BCA. They refer to the main ones below.
- 650. The Agency (EA3/a, para 9.10) refer to local economic benefits over 100 years of the proposed scheme compared to the measures in place in 2016. These benefits are excluded from the BCA because they relate to local effects of economic loss which might be displaced as economic gain outside of Oxford. The Agency estimate the benefits from economic losses due to flooding of business property to be £102 million, and those from avoidance of transport disruption as £52 million.
- 651. However the Agency has provided no evidence to show that Alternative A2, let alone an optimised A2, would not also prevent these costs. Indeed, the flood maps that compare the proposed scheme with A2 (CD3.29 Figures 3-6, pages 10-13) show very little difference to flooding of commercial areas and road/rail links, other than in the most severe and therefore rarest flood events.
- 652. The Agency (EA3/a, para. 9.15-9.19) refer to national benefits of keeping transport links open, and protecting utilities. All of these are capable of inclusion within the BCA but haven't been, possibly because the Agency's own evidence (CD2.3, Table 8) suggests that the potential damages are too small to warrant inclusion.
- 653. In any event, when they cross examined Emma Formoy of the Agency on 30/11/23, she also accepted there was no evidence that these same benefits would not accrue under A2.
- 654. The Agency also (EA3/a, para. 9.26-9.31) refer to environmental benefits of the proposed scheme, largely around the channel being packaged as a wetland environment. This is a wetland environment that nobody asked for, that risks destroying existing nationally rare grassland, that won't reach a natural appearance for many, many years.
- 655. The foregoing all makes it impossible to see the Agency 's scheme as preferable to an optimised A2 on any sort of economic basis. Overall, omitting the channel makes sense, subject to the validity of the Agency 's reasons for insisting on it being retained.

## The Agency 's Reasons For Wanting The Channel

656. The Agency's reasons for wanting the channel have been summarised in a document (INQ/13b) that the Inspector, asked the Agency to compile. This collates every

reference in the Agency's evidence relating to the need to retain the channel. These can be summarised into four categories<sup>567</sup>.

"Uncertainty" and "unreliability"

- 657. The first category is that of uncertainty and unreliability. The Agency suggests that 'no channel' alternatives would make the scheme 'uncertain' and 'unreliable'. They make no distinction between these terms they don't define or quantify them separately so Dr Therival refer to them together.
  - 658. Aspects of uncertainty referred to by the Agency include that: the "no channel" option would not increase capacity in the western floodplain, and hence increases risks elsewhere (B); the floodplain does not have not enough capacity to avoid flood impacts (J); the lack of a channel would create a "weak point" where you cannot say with any certainty where that water would go (D); and control of the floodplain would be uncertain without a channel (H).
  - 659. The Agency has provided no evidence on how much increased capacity its scheme would provide. It has provided no quantification of what 'certainty' the proposed scheme would provide over no-channel alternatives; no quantification of the additional 'reliability' that a channel would provide; or how much additional 'control' of the floodplain a channel would provide. It has provided no evidence that the floodplain doesn't have enough capacity. Therefore, any value added by the channel in these areas is unknown and unquantified.
- 660. The closest the Agency gets to providing evidence of certainty is through its hydrological model (CD3.29). And that model shows that Alternative A2 would work nearly as effectively as the proposed scheme. If A2 was optimized it may well be as 'certain' as the proposed scheme. Remember that today's "no channel" floodplain already does a very good, certain job of conveying flood water to the River Thames.
- 661. The Agency says that flood control structures should not increase flood risk to third party land or it would be liable (G). However, the Agency has presented no evidence to show that its own scheme, minus one element, the channel, would increase flood risk anywhere. On the contrary, the modelling shows the scheme without the channel increases protection across the area covered by the scheme relative to the current situation.

## More land to be subject to CPOs

- 662. Second, the Agency claim that their control of the proposed channel would allow them to ensure this preferential route for flood water is not impeded. They argue that, without the channel, larger areas of floodplain might need to be acquired by CPO to ensure the flow of flood water (F, Gii, I).
- 663. It's hard to see the need for such CPOs when there are other remedies (e.g. agreements with landowners) to ensure obstructions are not created. There is also no evidence that the existing management of the flood plain is in any way deficient, or that

<sup>&</sup>lt;sup>567</sup> These show the identifying reference from INQ/13b para 3.8 plus their response.

this might change. This is hardly surprising as landowners have every incentive to manage their land so as to minimise flooding.

664. Moreover, the Agency would struggle to make a case for such CPOs since their modelling indicates that a 'no channel' option would work, and they cannot quantify the "reliability / certainty" benefits of having a channel.

## Properties protected and Net Present Value

- 665. Third, the Agency claim that the proposed scheme has a better net present value than the alternatives, protects more houses from flooding in severe flood events, and provides more protection from sewer and groundwater flooding (A, Gvi).
- 666. As already have discussed, differences in NPV and properties protected are largely due to the suboptimal way the alternatives have been modelled.
- 667. Regarding sewer and groundwater flooding, they have not been able to find any Agency evidence to show the proposed scheme performing better than Alternatives A1 or A2 in this regard.

## Lack of channel could be irreversible

- 668. Finally, the Agency claim that omitting the channel now might not be reversible it might not be possible to add a channel in the future due to the requirements of the FCERM-AG for schemes.
- 669. Part of the FCERM-AG (CD5.6) concerns the need to have a positive NPV. If there are doubts over the viability of the channel as an add-on then that implies the channel would not meet this test.
- 670. If a case could not be made for the channel as a later and separate "add-on" then doesn't that demonstrate that it adds very little value relative to cost?

## Conclusion

- 671. The flood protection benefits of the proposed scheme, as summarised in the BCA, are only very slightly more than those of Alternative A2, but there are good grounds to believe that A2 could be optimised so that its cost could be decreased and benefits increased. The resultant increase in NPV would already make it preferable to the proposed scheme.
- 672. On top of this there are the wider costs of the channel: on Hinksey Meadow, the A34, recreation, biodiversity, and the way that cost savings can support other flood measures elsewhere. These make an optimised A2 clearly preferable in terms of wider benefits and cost. Hence it cannot be said that there is a compelling case for the scheme proposed by the Agency.
- 673. The only ground for retaining the Agency 's scheme would be if there were some overriding reason for retaining the channel. The Agency have claimed that such reasons exist, but when examined these reasons are wanting.
- 674. For all of the Agency's claims of certainty and reliability for a channel, they cannot quantify this in any way.

- 675. The importance of certainty depends on the consequences if the system does not behave as expected. Therefore they asked Mr Harding (cross examination 30/11/23) if the Agency had looked to see what the consequences might be. His reply was this hadn't been done.
- 676. So rather than trusting their own modelling of A2, the same modelling methodology they used to demonstrate the benefits of their scheme, they instead want the implications of the modelling to be ignored, and their scheme to be adopted in the face of the facts.
  - 677. The nebulous benefits of the unquantified reliability and certainty claimed for the channel need to be viewed against the certainty of the channel's very high costs. They cannot see how a public body can justify incurring known costs for unknown benefits.
- 678. The Government guidance on CPOs distinguishes between the intention of the AA and the wider public interest. The Agency's remit may be limited to reducing flood risks. The Agency may have to follow their guidance which refers to all of these costs as only 'risks' that can be 'mitigated' (CD5.6, Sec. 9.5, page 126; EA3a para. 9.33, p.18). But the public, have to face the proposed scheme's costs as well as its benefits.
- 679. The purpose of this Inquiry is to act as an external check on what the Agency is proposing; to see whether the scheme, with all of its costs, benefits, certainties and uncertainties, is of compelling public interest. The channel costs too much in all kinds of ways. The CPO for it should not be confirmed.

# Dr Timothy King (OX 023N)

- 680. Much of the Agency's Plan for the OFAS is worthwhile. However, he wishes to point out that alternative scheme A2, also part of the Planning Application (Appendix Q, CD3.8q, CD3.29), is superior to the complete scheme in many respects; and to suggest that the whole OFAS is based on insecure foundations, because the baseline biodiversity of the whole site has received insufficient attention.
- 681. The proposed OFAS is now out of date. It has been superseded by events. The concept was first proposed in about 2007. Over the past 25 years the Agency's engineers have successfully implemented linear 'channels' in the Jubilee River, York, Exeter and Kendal, for example. A similar linear channel, in Oxford, however, is inappropriate. Oxford is different, with its vast catchment area, and many historic braided streams.
- 682. Since 2007, five developments have slowly made the OFAS redundant. These are the culverts beneath Willow Walk (2011), the major de-silting beneath Munday's Bridge (2013 & 2015), the two major culverts beneath the Railway Line at Cold Harbour (2016), the instigation of a range of up-stream flood alleviation measures (2014 onwards), and the integration of biodiversity into the national Planning System (2017 onwards in particular). Also, in prospect, there is the planned embankment and bund protecting Osney Mead from flooding from the west and south, reducing the number of commercial properties at risk.

## Advantages of alternative scheme A2

683. These changes mean that Oxford is no longer at such risk of flooding. A scheme which aims to increase the rate at which the water moves through the 'pinch points' is sufficient. If water flow speeds away from Botley, across Willow Walk, and at Redbridge

southwards, the deep channel at Sandford, the flood meadows at Kennington and improvements to the operation at Sandford Lock will ensure that the impact on Abingdon and Goring is minimal.

- 684. Alternative scheme A2 involves abandoning any excavation between Botley and the Old Abingdon Road, whilst building the important wider bridge across Willow Walk. That would probably save about £40 million. Agency officers have been reluctant to dissect their scheme into parts, but it is the logical way to proceed. Not all parts of the scheme will be equally effective at moving water. It is unclear why the Agency's engineers want to press for the scheme as a whole.
- 685. Their main argument is that by creating an extra canal about 4 km long, it will be more certain where the water goes when it floods. That is not the case, for two reasons. First, any of the locals can accurately predict where in the historic floodplain it will go; the Agency's engineers, sited in Reading or Bristol, lack the same insight. Second, the Truflow computer modelling of the hydrology, though top class as deterministic computer models go, does not model important but unpredictable features, and does not provide confidence limits for the estimates. These include (a) where in the four or five feeder rivers most of the water falls or the snow melts (b) when, and for how long, the soil remains saturated? and (c) the extensive movement of water in the underlying gravels.
- 686. Even so, the effect of not building the channel between Botley and the Old Abingdon Road does not affect much the numbers of residential properties at risk of flooding. Even if the scheme is implemented in total, in the worst floods Osney, the Osney allotments, the Seacourt Park & Ride and several residential streets down the Abingdon Road will still be affected, though Helen Road and Henry Road will be protected by the extra measures around Botley.
- 687. There are many other benefits, apart from financial, of not building the central part of the 'channel'. The CPO within this area would not be required. The Green Belt would remain intact. Oxford would receive its flood alleviation scheme sooner. There would be much less opposition whilst achieving almost as much flood alleviation. No extra fencing, grazing or maintenance would be required, and so the extra maintenance budget of £6 million or so could be spent elsewhere. The current terrestrial biodiversity would be maintained, instead of being reduced. Historic landscapes tend to accumulate species. Those plant communities most prized would continue to thrive because the periodic flooding which they require would still take place. The current continuity of the hedges would be maintained.
- 688. One major problem with the alternative Scheme A2 is that its Economic Analysis is insufficient.

### Integration of Biodiversity into the Planning system

- 689. This has been taking place since 2011 but appears to have taken the Agency by surprise. Systems for quantifying BNG such as Defra1, Defra 2, Defra3.0, Defra3.1, Defra4.0 have gradually become more sophisticated. The Agency has relied too uncritically on material produced by consultants. Any submission by consultants should be checked and recalculated by the Agency staff before being included in a planning application.
- 690. In the first (2018) application the Defra1 calculation was wrong. The Defra1.0 submission was a net gain in biodiversity of about 40 units. Three errors had been

made in the drop-down menus. His re-calculation (backed up by a BBOWT ecologist) showed an overall reduction in biodiversity of about 140 units.

- 691. By the time of the second application Defra 3.0 considered aquatic, hedgerow and terrestrial biodiversity separately, with each requiring an increase of more than 10%. The data, though, had been collected in 2020 by Jacobs on a Defra2.0 basis. He pointed out in May 2022 the underestimation of the terrestrial biodiversity, the Agency sent two samplers onto the site in June 2022. They sampled 167 quadrats in 34 parcels (polygons). The baseline biodiversity was increased from +666 units to +764 (Jacobs 2022). A comparison of the 2020 and 2022 data shows that the initial submission was markedly off-beam. In sixteen of the 34 parcels the vegetation was upgraded from modified grassland (multiplicator 2) to 'other neutral grassland' (multiplicator 4). In particular, the 'condition' in 30 of the 34 polygons had been increased from 'poor' (multiplicator 1) to 'medium' (multiplicator 2) and none of the 34, for some reason, was regarded as 'good' (multiplicator 3); his checking came up with ten 'good conditions' out of the 34.
- 692. The Agency did not re-sample all the area within the red line between Willow Walk and Redbridge. The numbers of species per guadrat still appear to have been underestimated. There are several indications of superficiality in the guadrats sampled by the Agency staff in June 2022. Five species in particular had been missed. Festuca rubra/ovina (one of the most frequent of all), Festuca/Schoenodurus pratensis (not even recorded though it is abundant in places), the Carices, and the two indicators of MG4, Alopecurus pratensis and Sanguisorba officinalis. In the 167 quadrats sampled by the Agency staff across a wide area, only 102 species had been recorded, including many which are not purely grassland species. Yet in 33 quadrats in Hinksey Meadow alone, a much more restricted habitat. Sarah Lambert found 89 species (Lambert 2020) and in his survey of the same meadow in 2016, the records include 55 species in 12 quadrats, listing another 55 not found within the quadrats (King 2018) The Jacobs surveyors did not even record Schoenodurus pratensis, yet the North Hinksey side of Long Meadow (parcel 14) has obviously been sown with it at some stage. Under-recording is serious when the number of plant species per square metre determines the multiplicators which go into the BNG calculation. In fact, some of the areas in 'average' condition should be regarded as 'good' condition, increasing their value still further. So, it seems likely that the baseline terrestrial biodiversity has still been underestimated.

### Importance of terrestrial biodiversity

- 693. The Agency's probable underestimate of terrestrial biodiversity is important because it makes the measures proposed by the Agency for mitigation inadequate. The mitigation hierarchy suggests that the steps to mitigate biodiversity loss should take place on nearby sites where possible first seeking to avoid impacts, then to minimise them, then take on-site measures to rehabilitate or restore biodiversity, before finally offsetting residual, unavoidable impacts. The nearby sites proposed for mitigation, however, are already richer in biodiversity than the Agency has estimated.
- 694. It is his view the biodiversity of the whole area should be reassessed by the Agency before their proposed OFAS is implemented in full. If the water flowing from north to south is canalised somewhat and the existing MG4 vegetation is flooded less frequently, there may well be a subsequent reduction in biodiversity. This potential problem would be avoided by implementing the Alternative scheme A2 (Appendix Q, CD3.8q, CD3.29).

### <u>Overall</u>

- 695. The plan for OFAS proposed by the Agency, about 16 years ago, is now out of date in the light of measures already implemented, changes to legislation, and data collected since the original proposal. Some parts of the plan are well worth implementing, but others are now uncertain to be effective. Since a working floodplain already exists it would be worth dissecting the plan into stages. They are not all equal in value and the costs of establishing them differ considerably.
- 696. The Agency staff should be made to justify the reasons why they regard their elderly plan of a continuous 'channel' as still viable after the improvements already made, and the recent quantification of biodiversity. The changes and information, since then, now make the plans in this current application redundant. It has underestimated the baseline biodiversity of the area and failed to make the compromises with engineering which are now built into planning practice. There is no particular reason why a few Agency engineers in Reading and Bristol should feel that they have a monopoly on common sense.

# Cllr Martin Dowie (OX 011N)

- 697. The Agency made the CPO on 16 February 2023. The Agency wishes to acquire a part of Seacourt Stream which is owned by Botley and North Hinksey Parish Council (B&NHPC). B&NHPC was formerly known as North Hinksey Parish Council.
- 698. As a parish councillor, parishioner and parish council allotment tenant he objects to the CPO.
- 699. He believes the CPO is premature as planning permission has not been granted and alternatives have not been adequately investigated.
- 700. He supports the B&NHPC objection to the planning application and as the CPO facilitates the planning application he offers the same arguments in opposition to the CPO. He agrees with the B&NHPC objection and it forms part of his objection to the CPO.
- 701. In addition, some of the land the Agency wishes to acquire (a part of Seacourt Stream) is adjacent to/part of allotments owned by B&NHPC for the enjoyment and use of parishioners. He is an allotment tenant on this land. He supports the current B&NHPC position of opposing compulsory purchase of this piece of land. Acquisition of this piece of land for works along with the impact proposed works on nearby land acquired by CPO will have a severe negative impact on his and other allotments tenants' amenity. Existing landscape and wildlife will be adversely affected.
- 702. He agrees with the B&NHPC suggestion that "*it would be following environmental impact good practice to investigate other alternatives to the same degree as the preferred option.*" Given that it appears that 85%- 90% of flood alleviation can be achieved without the channel he believes that it is appropriate to investigate the alternatives offered by the HOEG and the OFEG. The Agency should properly consider and present the alternatives using fair comparison before attempting to acquire land through the CPO.
- 703. He supports the alternative proposals offered by the HOEG and the OFEG.

### Brian Durham (OX 017N)

- 704. The material points taken from the closing submissions are as follows:
- 705. This submission focusses on opportunities for easing flow constrictions within the CPO gravity-driven scheme.
- 706. **Cross-examination** On the morning of 28 November Richard Turney as Counsel for the Agency alerted the Inspector that he would cross-examine Mr Durham solely on `engagement' to avoid him `having two bites of the cherry' on alternatives. `Two bites' seemed a surprising metaphor because, despite its title `Engagement and Alternatives', he would have known that Mr Durham's evidence for FHT related solely to `engagement', so there was only one `bite' for him on alternatives. Surprise changed to confusion when in the event, Mr Turney appeared uninterested in his chosen topic of `engagement' and, despite offers from Mr Durham and promptings from both FHT's counsel and from the Inspector he questioned him solely on alternatives. In these (what he takes to be extraordinary) circumstances the drift of their dialogue is summarised below, under items in his `Proof'.
- 707. In introducing himself he referred to a phrase from Agency's ecologist Graham Scholey, whose aim in flood alleviation was to `undo the works of man' (oral introduction to G. Scholey Evidence in Chief 15 November). Mr Durham explained that as a trained meteorologist he understands where the water comes from, and as an experienced field archaeologist he understands the obstructions that slow its escape. Mr Turney pressed him on alternatives to his client's channel.
- 708. Alternative A2: Under his Proof Item 5. he reminded Mr Turney of the data in ES Appendix Q showing that the no-channel alternative performs better than the Agency's scheme through all the meadowland downstream of Willow Walk, citing negative difference values for Scenario A2 in ES Appendix Q, Tables 2-4 (CD3.8q). Mr Turney referred to the Agency mapping, to which Mr Durham replied that the mapping is secondary information derived from the tabulated values he uses the primary data.
- 709. Under his Proof Item 5.a., Mr Turney pointed out that the CPO scheme gave better results overall, thus the same A2 advantage is not shown upstream of Willow Walk (ES Appendix Q, Tables 2-4 CD3.8q). On this Mr Durham reminded him of the evidence of Mr Raynor that there was a `backwater effect' upstream of Willow Walk in the Scenario A2, which he had not sought to explain (Philip Raynor proof EA/5a para 16.20, c)). Mr Durham suggested to Mr Turney that such a differential between upstream and downstream could arise if the model had been given different conditions at Willow Walk, and he referred him to the elements listed (ES Appendix Q, page 2, Elements 3; 11, CD3.8q).
- 710. Under Mr Durham's Proof Item 5.c, the bed level described at Elements 3 and 11 had according to Mr Raynor been designed to avoid landowner maintenance (Philip Raynor Proof EA/5a, para 16.2, e)), but one landowner had been in the Inquiry last week and the issue had not been raised, in any case the Agency was proposing itself to become the landowner. A bed level around 0.70m lower than average ground level is confirmed by Mr Harding in his written reply to Mr O'Hara (INQ/42, subtracting bullet 4 from bullet 1), while another is proposed by the CPO scheme itself, lowering by 1.84m at Old Abingdon Road (CD3 10a10 Drawing 3, meterage 450m), each implying that this is conventional practice locally. Mr Durham was asked by Mr Turney why bed levels and the concept of equal conveyance at bridges had been missed in Mr Carpenter's modelling? In response he reminded him that he had raised the issue with Emma

Formoy on 14 November (clarification of her Evidence in Chief), since when there had been time for the Agency to run the model within the span of the Inquiry.

- 711. Under his Proof Items 2. and 4., Mr Turney raised the question of control of the floodplain by the Agency. Mr Durham asked him the width of the narrowest part of his client's corridor, and helped him on that, it being 45 metres between fences at South Hinksey (CD3.10a14, Map 2). Why does any location need to be wider? Using flotsam-friendly electric fencing, a virtual corridor of this width can be created the length of the meadow section with minimal land-take, demanding only constructive engagement. For instance the Inquiry heard on Site Visits 1 that OPT was negotiating for the proposed swale (his Proof Item 4.) on Hinksey Meadow to be unfenced (Debbie Dance, dated 1 December).
- 712. *Alternative A3:* Moving downstream of the meadows, under his Proof Items 3.; 6. and 7., Mr Turney asked if Alternative A3 was integral with A2, to which Mr Durham responded that A3 had standalone merits but could and should be integral. He listed its merits, beginning with the single road bridge (his Proof Item 6) which include:
  - The bridge is on open ground, allowing construction firstly to start in parallel with the A423 bypass bridge replacement, thereby saving three years in starting; and secondly to avoid temporary diversions saving a further two years;
  - It saves the cost of a second bridge and maintenance thereof;
  - It allows freeboard under the deck;
  - It had previously been described by the Agency's consulting engineer as a `much more elegant solution' (Richard Harding proof EA/1a 16.8 (c));
  - It offers benefit to the Agency's archaeologist for preservation by record, she having been unaware of the existence of an alternative that would allow openarea excavation off the critical path (clarification of Catherine Charman evidence in chief 15 November; his cross-examination 29 November);
  - The concept was unfamiliar also to traffic engineer David Lear (clarification of David Lear's evidence in chief 15 November; his cross-examination 29 November).
- 713. Under his Proof Item 7., merits at the railway include:
  - Reduction of head-loss across the railway embankment between Redbridge and Mundays Bridge (Appendix 1, Item 7.);
  - Avoids land-take in Kennington and construction of a concrete flood channel (CD3.10a14; Drawings 4 7);
  - Exploits the exaggerated and permitted east flood arch in the imminent replacement of the A423 bypass bridge (Oxfordshire Planning, Application R3.0033/23);
  - Offers all the benefits to local and national infrastructure as listed in his Proof Item 7.
- 714. As explained to the Inspector, Network Rail had asked him not to share with the Inquiry their e-dialogue with their Asset Protection Officer (e-mail string copied by Network Rail to Richard Harding of the EA, dated Mon 20/11/2023 16:20) but for

information of the Inquiry, Network Rail's approach to such customer projects is in the public domain.

- 715. Alternative A3 was later summarized by Mr Durham for the Inspector on Site Visit 2 with reference to an A3 plan of the Temporary Diversion Route (CD3.10a14, Dwg 1). Among supporters of the CPO scheme, Bob Price said `it is very important to ensure the water gets away efficiently' (clarification on 16 November), and John Mastroddi, a Kennington resident, would back a new viaduct if it avoided loss of his garden area (clarification 16 November; Site Visit 2).
- 716. As a package with the permitted A423 bypass bridge, the single bridge and railway viaduct offer flood alleviation to Oxford five years sooner than the Agency's preferred option, while protecting the railway and the record of a nationally important monument.
- 717. Alternative A4: Under his Proof Item 8., Mr Turney asked about Alternative A4, protection of floodplain at New Hinksey where Mr Durham estimate 5% degradation of flood alleviation (Appendix 1, Item 8). Much smaller instances of such floodplain encroachment by objectors are described by the Agency as `*inconsistent with the* Agency's position on planning matters' and `*cut across the requirements of the planning regime, by encroaching further into the floodplain*' (Veronica James EA/11a at Section 15). That same test, if applied to 10 hectares at New Hinksey, would seem to demand transparent investigation of the Agency's alleged demerits cited by Richard Harding (EA/1a, para 15.34).
- 718. **Conclusion:** In omitting his stated intention to examine FHT's record of engagement, Mr Turney was paradoxically giving the Inquiry an object lesson in what the communities had missed from the Agency over four years since his first formal meeting on 3 December 2019, that being direct and reportable public engagement in the interests of the City of Oxford and its neighbours.
- 719. FHT's record on Engagement was demonstrably unchallengeable, meaning that the Agencyhad enjoyed unfettered access to the community thinking process behind alternatives, including FHT's offer to agree specifications, common terminology and non-controversial elements. Indeed, since his own evidence in chief for FHT had not included `alternatives' *per se*, Mr Turney's close understanding was a testament to what the Agency had absorbed from FHT, but had declined to make available to the Inquiry or to permit FHT to do so.
- 720. Thus Mr. Turney was at the same time giving an object lesson in internal contradiction, adding to examples including the absence of like-for-like modelling of alternatives; maximizing program integration with other authorities, protection of the railway; and floodplain encroachment. Furthermore, in connection with like-for-like modelling, and additional to the issue of conveyance at new bridges above, under Mr Durham's Proof Item 5.d. the Inquiry can note Mr. Raynor's acceptance that modelling of hydraulic roughness was not like-for-like in the comparison of alternatives (EA/5e, 4.2).
- 721. There are plenty of good things in this CPO proposal, but they are so emmeshed with the doctrinaire that there is need for at least one package, and possibly only one, to be investigated transparently to provide an intellectual framework for an overview of the remainder.
- 722. Out of wide familiarity and attempted engagement over at least four years, Mr Durham respectfully proposes the on-site gravity-driven package A2/A3 for optimizing

environmental and transport merits without raising defences, and A4 as an exercise in compliance with the planning regime.

### Jonathan Madden & Kevin Larkin

- 723. The material points taken from the closing submissions are as follows:
- 724. The pumped system consists of a short section of wide bore twin pipes, buried under the level Hinksey floodplain for a distance of some 5km. This bypasses the meadows area, thereby giving several immediate advantages over a gravity scheme:
  - i) The environmentally sensitive ecology of the meadows is left intact. The CPO over the Meadows are rendered largely, if not totally, unnecessary.
  - ii) Water-draining capacity of the meadows remains as before. The pumped system adds to, not replaces, the natural flow of flood water across the meadows.
  - iii) Fine control of pumped flow can anticipate high flood water volumes at an early stage and thereby reduce peak flood levels. Likewise, pumped flow may be reduced as required, in the event that levels in the downstream areas demand a reduction in flow output from the pipe discharge points.
  - iv) Removal from site of soil upcast from the meadows is minimised, and may in principal be reduced to zero in the trenched area, by backfill and creation of a shallow bund over the trench. Only excavated soil from the pumping station foundation will need to be removed.
  - v) Power requirements for accelerating water through the pipes are low, amounting to some 1.5 mega Watts at full capacity. This is similar to the power of a single railway locomotive.
  - vi) The system has power supply and hardware redundancy, with each component being at least duplicated.
  - vii) All aspects of the system are industry-standard, including trenching; pipe-laying; pumping with axial-flow pumps, and energy dispersion by means of baffles at the discharge points.
  - viii) Construction time will be much less than for a gravity scheme.
  - ix) By suitable design, the system can accommodate sharp bends and can run under streams at crossing points. The pipes can change elevation without performance degradation.
  - x) Final discharge of water can be positioned at will. In principle, one or both pipes can be run to the downstream side of Sandford Weir, giving improved flood level control at all points along the meadows route.
- 725. The Agency have not put a pumped Twin-Pipe proposal out to multiple, independent, tender. A system such as this requires a number of specialities, provided by several companies that can cover each facet of construction efficiently.
- 726. Complex, underwater and deeply buried, piped schemes for water, oil and gas typically come in at £5m £10m per mile. The favourable soil type of Hinksey Meadows is ideally suited to trenching.
- 727. A fully independent tendering process for a pumped scheme will result in a cost estimate very significantly less than the Agency's figure.
- 728. Kevin Larkin and Mr Madden believe that the cost projection of £22m (2022) is reasonable.

#### WRITTEN REPRESENTATIONS

#### THE SUPPORTORS

#### Richard and Vicki Thurston (WRS/01)

729. They broadly support the scheme and the CPO process in particular. They moved to West Oxford in 2001 and since then they have seen flood events in 2002, 2003, 2007, 2013, 2014, 2020 and 2021. The 2007 flood event was the worst they had witnessed. They saw, first hand, the impact that it had: as well as the devastation caused to people's homes, there was the mental impact also on neighbours and friends, many of whom are still worried each time there is a significant rainfall. After 2007, residents were encouraged by the various agencies to start to address the problems in the western catchment: a number of small improvements were made but, sixteen years later, it is still being discussed. It's now time to get building!

#### Victoria Johansen (WRS/02)

730. Whilst it is understood that this scheme and the CPO has received quite a bit of adverse criticism, should permission be granted it will be very welcome to those of them who have been flooded in the past. It is realised the work involved will be disruptive but it is suspected that those who object have never known the absolute devastation at having one's house 1 metre under water and the internal structure – walls, floors and kitchen appliances and furniture destroyed. Her house and others nearby were badly flooded in 2007. She had the care of two young children and had to find alternative accommodation immediately, after which she was not able to return to her house for seven months. It was especially difficult for the old and disabled and now, sixteen years later, the prospect of having to walk through 1 metre of water at three o'clock in the morning and climb into a boat to be taken to dry ground slightly disturbs her. She is fully supportive of the OFAS which she hopes will free this part of West Oxford from fear of floods for many years to come and trusts that the public Inquiry and subsequent planning permission will take into account its importance to the people whose houses are prone to flooding.

### Hugh Airedale (WRS/03)

731. As a veteran of the 2007 floods, and a home owner on Osney Island, West Oxford, he is writing to show his support for the above scheme. He recalls the disruption and heart-breaking damage caused by the floods in 2007; West Oxford suffered badly and over 30 of his neighbours' homes were flooded here on Osney Island. Climate change will make this a more frequent problem. Flooding causes great disruption to businesses, transport along the main arterial road into and out of Oxford, not to mention the damage that it causes.

### Dr James Pritchard (WRS/04)

732. He operates a small business on East Street, Osney Island, which was built in 2021/2 to offer no interference with the floodplain, due to the low-lying position. According to guidance from the Agency, flood water will move through the ground floor of the building without obstruction.

- 733. As well as the damage which would be created, a flood would also prevent operation of the Centre, from the time a risk of flood is established to the time the building is cleaned out and repaired after the flood has receded. This could cause a serious disruption to the business. Although he has narrowly avoided flooding in this property in the past, extreme weather events are becoming more frequent and it seems irresponsible not to take action before it is too late.
- 734. His home is also situated close to the river, but at a slightly higher level than East Street. Having watched the water rush past the end of his garden in 2007, very close to the back of his property, he also has concerns over the effects of climate instability on this property in the near future unless action is taken. The OFAS is a well researched intervention, which would provide some protection to property in Oxford, while offering a range of varied habitats for wildlife, supporting the natural ecosystem. It is vital to minimise the delay in getting it developed.

# Matt Dyson (WRS/05)

- 735. He has been a resident of Osney Island in West Oxford since 2016. He is in support because flooding is a significant risk of where he lives. Since the very significant incident of 2007, West Oxford has had flooding in 2013, 2014, 2020 and 2021. The direction of travel is for things to get worse, not better. The climate crisis is pushing more severe weather events, and we as a country are not changing our habits or building processes sufficiently to address the problems. The impact was bad before, home lives, ability to work, and property damage, let alone the risk to life, are all likely, and seems likely to get worse.
- 736. The scheme proposed seems carefully planned and thought out. He has read the materials of some who oppose it, and can see value in some of their arguments. On balance, however, they have not persuaded him that there is a better scheme than the OFAS proposed, or that the work of the Oxford Flood Alliance and Agency is not rigorous and appropriate. He supports the scheme and the steps that are needed to get the scheme underway as soon as possible.

# John Magrath (WRS/06)

- 737. He has lived in Oxford for nearly 40 years, much of it in west Oxford. He has experienced the great difficulties involved in getting to work, into and out of the centre etc, caused by severe and lengthy floods in Botley/Hinksey. Good friends of his who live nearer the river have fared worse as their house has been flooded twice, causing them severe loss (financial and material) and considerable distress. The possibility of flooding continues to cause them considerable anxiety. He also spent much of his later working life researching climate change impacts for an international NGO, and he knows it is highly likely that extreme rainfall events due to global heating, combined with extensive housing and infrastructure building upstream, will increase the risk of future floods.
- 738. He understands and share the great concern about the loss of 1.3 ha of precious MG4 grassland on Hinksey meadows that creating the channel would entail. He regularly walks or cycles along Willow Walk, undertakes conservation work on a local nature reserve and makes assessments for an environmental grant-giving body, and in other circumstances he would say such a loss was intolerable. However, in these

circumstances he considers the balance – weighing harms and benefits - is in favour of the necessity of the channel. He says this because:

- i. His understanding is that the Agency believe (and he has to trust their expertise) that the channel is absolutely necessary for the effectiveness, in flood control terms, of the whole scheme, and would provide a clear and more predictable method for flood water to travel from Botley Road to the Old Abingdon Road. He understands that if the channel is rejected, then the Agency may well not go ahead with the scheme at all. If so, he believes that would be a greater disaster and result in further loss, damage and distress to people, society and economy from floods.
- ii. He understands that the Agency has striven, and has taken expert advice, to try to reduce the impacts on the MG4 grassland and to compensate by creating natureenriched habitats elsewhere by e.g. removing and transferring MG4 turf; creating new flower rich meadows south of Osney Mead, and forming new freshwater wetland habitat elsewhere. These are not exact substitutes for impacts, and the removal of turf is experimental and might not work at all. However, it seems to him that considerable attention has been paid to how to mitigate impacts, and that the scheme as a whole does have the potential to enhance biodiversity over time and in several locations – and if it does not go ahead, then those opportunities to enhance biodiversity are likely to be lost.
- 739. Therefore, in light of all the above, he believes that the best solution not a perfect solution, but the best would be to approve the proposed CPO and proceed with the OFAS as it has been submitted.

### Tomas Imre (WRS/07)

740. He is writing to confirm that he supports the CPO process as this will allow the flood alleviation scheme to move forward. He is the owner of a local business in West Oxford. Where there are flood events, the disruption to his business is considerable: the main road is closed, trade is disrupted, takings are down and his customers' homes are under threat. He believes that the flood alleviation scheme needs to progress - and quickly - so that we can stop flooding in West Oxford. Climate change will only make flooding more frequent. We need to act now to ensure that businesses like his can continue to flourish.

## Gerry Kendall (WRS/08)

741. Those of us who came close to disastrous flooding in the past are eager that effective flood defences, with the full proposed by-pass channel, are set up as soon as possible. He is delighted that this work seems, at last, to be proceeding. Please press on before we are flooded again.

## Robert Lawrence (WRS/09)

742. He lives on Osney Island in West Oxford and recalls the terrible impact that the floods of 2007 had on his neighbours. The time it took for them to rebuild their homes was considerable. With climate change, we see extreme weather events more often, these overwhelm the local river system causing localised flooding, road closures and a lot of disruption to businesses. He is really keen to see the flood scheme go ahead.

### Julia and Peter Marsh (WRS/10)

- 743. They are in favour of the flood alleviation scheme and they see the CPO as a key step to getting the scheme started. Their family have lived in Osney for 24 years. Osney has always been susceptible to flooding but the flooding of 2007 was particularly bad. About 25 of their neighbours' homes were flooded as well as their own house which has had flood water in the kitchen three times since they moved into it. These flood events cause significant disruption to the community including Botley Road, which is the main thoroughfare into the city centre from the west. Although the flood relief work done on Willow Walk in 2011 had a noticeable effect in lessening the consequences of subsequent flooding events for them, following the 2007 flood, given the likely increase in rainfall predicted as our climate warms up, they think it is imperative that the flood management systems for West Oxford are added to as soon as possible.
- 744. The majority of recent comments about the flood relief scheme have seemed to concentrate on the short term inconvenience of the construction work. They are glad that the interested parties are still looking to the long term future. Consequently, they are writing in support of the CPO as a first step on the way to this goal.

### Sebastiaan van Schaik (WRS/11)

- 745. He is writing to express his support for the Agency's proposals for OFAS. Where he lives has in 2007 and 2014 been one of the streets most affected by the floods. Quite apart from the severe stress caused by these floods, his house (dating from the 1880s) has needed considerable renovations after each of these flooding events.
- 746. It appears likely that, as a result of climate change, such floods will only happen more regularly, and each will be increasingly severe. When the OFAS was first announced back in 2016, he hoped that construction would be well under way in the early 2020s, and that he'd be safe(r) from the floods by 2025. It's unfortunate that the scheme has been delayed, and he hopes the CPO can be issued soon in order for construction to begin.
- 747. He has attended multiple information events on the scheme some organised by the Agency, others by local residents to exchange thoughts, and some by a very small group of extremely vocal local activists who (successfully, so it seems) intend to delay or prevent the introduction of this scheme. Some are worried about wildflowers, others about trees, and yet others fear they have to change the route they take to walk their dog while the construction is underway.
- 748. All of the land in and around Oxford has been churned over by humans many times in the past decades, centuries, and millennia. The flowers that thrive here will thrive again, likely accompanied by others. The small number of trees that have to move were planted by humans in the first place and will be replanted as part of the work. This is a very small price to pay if it means that current and future residents of West Oxford are protected from floods.
- 749. Moreover, the Agency has gone out of their way to consult on the scheme, engage with local residents, and address many objections. Conversely, he has seen some "alternative proposals" from local activists, each of which lacks credibility. Some are scribbled on the back of an envelope, others are worked out in detail, but turn out to be ineffective pipe dreams upon closer inspection. The truth of the matter is: we need to provide more room for water, and more routes for it to make its way downstream. This

is a hard truth he learned growing up in The Netherlands, where river floods on the scale like the ones in Oxford in 2007 and 2014 are unprecedented in modern-day cities.

750. He therefore urges you to expedite the approval of the CPO, which will get Oxford's much-needed Flood Alleviation Scheme back on track.

## Athene Reiss (WRS/12)

- 751. Having lived in West Oxford for over 30 years, she has long familiarity with the water issues in this part of the City. In July 2007, along with many other properties in her area, her house flooded. She had 10cm of water throughout the ground floor for several days, which, inevitably, led to months of disruption, including absence from work, ill health and unexpected expenditure of time and money. She has also had occasions when the water has been literally at the lip of the back door, and sometime very near that for extended periods, which causes its own difficulties, such as staying home from work in order to keep an eye on the water levels and the associated stress.
- 752. She has kept up with proposals and discussions about flooding since 2007 and am very much of the camp that thinks that no solution will be perfect, and there are downsides to any action. But the downsides of not going through with this scheme far outweigh its imperfections and downsides.
- 753. This neighbourhood, and the city more widely needs to significantly reduce the impacts of high-water instances. She would like to see more work being done upstream to hold water on the floodplain, and what she likes about this scheme is the use of this principle as part of the management. But we also need the water to be able to flow out of the Oxford bottleneck more swiftly, and this scheme will deliver that benefit.
- 754. She has a background in nature conservation, and she regularly enjoys the rich floodplain fields in and around Oxford. Every time there are excessively high waters, the moles disappear from their gardens for at least several years, and she is confident there are many other negative impacts on wildlife. She looks forward to benefitting from the reduction in flood events and the severity of such events, and also from the biodiversity gains that she believes will enhance the neighbourhood for people and wildlife.
- 755. She hopes you will put the overall positive gains above the temporary and limited inconveniences that some people are touting, and work towards the timely implementation of the OFAS, so that West Oxford can be spared more severe flooding events, and Oxford more widely will benefit from the reduction or absence of the disruption, expense, etc. that they cause.

### Valerie Thomas (WRS/13)

756. Although she is used to seeing the river rise and fall, between 2000 when she moved into the house and 2007 she has seen five serious floods in the area. Her house was built about four inches above the level of her neighbours' houses, so water did not quite enter the house itself, but on the last occasion it was right up to the back door and the garden was full of sewage from burst drains. Her neighbours suffered far worse and some were out of their homes for more than six months while the houses dried out and remedial work was done. It was a frightening experience for them all. The flood of 2014 did not so much affect them as some protective measures had been put in place. Since

then, however, some of their neighbours have built large extensions and extra buildings in their gardens, so the likelihood of flood water coming into her house is now much greater.

- 757. After the 2007 flood, the Oxford Flood Alliance and the Agency have put together a plan which they have been working on for many years. They have been meticulous in taking all aspects of the scheme into account, consulting residents and many experts. She knows that there have been some concerns about the effect on wildlife in the area, but there would be some fallout from any scheme and the danger would be much greater if nothing was done before another serious flood. As it is, the Agency has worked with the Earth Trust to ensure that the environment suffers as little as possible, and that there are positive benefits.
- 758. They have been extraordinarily lucky in Oxford that there has been no repetition of the flooding they had earlier in the century, but other regions have suffered badly since then, and with climate change and the increasing frequency of serious flooding incidents throughout the country, it cannot be long before this area is inundated again. We really cannot afford any more delay.

# Marion Hanbury Brown (WRS/14)

- 759. She writes to endorse the course the Agency is taking to address flooding in the future in Oxford. She attended the presentation given on the flood alleviation plans several years ago. At the time she was impressed by the detail in the plans which are now much more extensively researched and developed and provided on the Agency's website. She has also heard more recently, the former local lock keeper speak at the local community centre and appreciate the care the Agency takes in keeping them safe. She understands the next step is to approve the CPO which is probably the most difficult step to get through so she writes in support of the OFAS.
- 760. She has lived on Osney Island since October 1990, and remember the anxiety of the floods in 2007 and moving her precious piano onto blocks with the assistance of Simon Collings of Oxford Flood Alliance and 5 other neighbours. With the improvement in local flood defences she has not yet had the same anxiety again so she is keen for levels of protection to maintained and enhanced.

# Jane Woodcock (WRS/15)

- 761. Living with the worry of flooding is rather debilitating and in 2014 her street was barricaded at the Botley Road end to stop the flood water coming down the street. Cars had to be parked elsewhere. She has also had many flood warnings including one on Christmas Day 2020.
- 762. She is very keen on the Flood Alleviation Scheme not just because of her own personal experience but because of the misery caused to those in this area. Climate change would suggest that severe flooding is more likely than not and the increased encroachment with building on the floodplain has exacerbated the problem. They are not isolated to this flooding and what happens further up the river will affect both the Botley area and further downstream.

- 763. The proposed scheme has been in discussion for a long time and she thinks those in favour would ask for the CPO to be approved so the work can move ahead as this project is going to take a long time to complete.
- 764. Of course there will be a temporary loss of wildlife in the Seacourt Nature Reserve which she walks on every day, when it is not winter flooded, and inconvenience while the project is developed, but as is the same with all large engineering projects once it is finished the wildlife and vegetation will return. The Agency has been a huge supporter of this scheme and has always done their best to help this area to keep them dry, coordinating their efforts with the other services and agencies.
- 765. They have far more knowledge about river flow, farming practices and if they are in favour of this project they should be listened to. They have done a huge amount of work to support the OFAS.
- 766. Along with all those who live in West Oxford and the Abingdon Road area please ensure that this project is allowed to be built.

## Colin Cook (WRS/16)

- 767. He writes in his capacity as a home owner living in the area of benefit of this scheme and lives with the Bulstake Stream at the bottom of his garden. He is also a former City Councillor with a long record of interest in planning and flooding issues both in and around Oxford.
- 768. Over the past twenty years he has seen the impact of flooding on his own garden and the enormously positive impact the Agency has made to improving the flow and reducing the impact of recent floods by their works to Bulstake Stream, downstream at Kennington and at all points in between.
- 769. The Agency were one of the few public bodies he worked with as a Councillor which inspired confidence. He has been very impressed with the care and expertise with which they have developed the scheme and which they are now putting forward for approval. The delays forced upon them by events have worked to improve the scheme as a result. The Agency are one of the few organizations which takes on board constructive criticism and has been willing to amend their proposals where it makes sense and they are able to accommodate them.
- 770. Given the nature of climate change and the increased chances of extreme weather events, a flood scheme for Oxford is urgently needed. This is why he believes both the planning application and the corresponding CPO should be approved. There will always be a compromise between improving flood protection for the city and meeting the concerns about cost, biodiversity, disruption and recreation. He believes the Agency scheme strikes the right balance between these competing demands and commends the application for your approval.

## Adrian James (WRS/17)

771. He writes to express his support for the OFAS. He is a resident of Osney in west Oxford and he runs his business, an architectural practice, in west Oxford too. He has lived here for 30 years and ran his business here for 25 years.

- 772. As a resident, he is acutely aware of the dangers of flooding, having lived here through the catastrophic floods of 1998 and 2007 which flooded many homes and roads and brought west Oxford to a standstill, and he has seen the river rise dangerously high on many other occasions necessitating flood defences to be installed on Osney island and elsewhere. The danger of flooding is a sword of Damocles hanging over them here.
- 773. As a business owner and architect, he is also acutely aware of the damaging effect flooding has on his own and his clients' businesses and the impact of flood risk on restricting development. He has had to design buildings with raised ground floors and other flood measures, all fair enough, but more importantly he has seen development proposals dropped or diluted because of the risk of flooding. He is not advocating more building in the floodplain, but is advocating that we manage the floodplain to provide greater certainty over the extent of possible flooding and protection from flooding. It is his understanding, having followed and studied the OFAS, that it will provide the flood relief they so desperately need here.
- 774. He has read about all the measures being taken to protect and enhance the natural environment. There will undoubtedly be damage caused by the works but he thinks it is temporary and recoverable and the measures being taken to improve the biodiversity and enhance the local area are all good. It seems to him that the meadows will be better for it in the long run, as will Oxford, its residents and its businesses.

# Keith Hutchence (WRS/18)

- 775. He supports this CPO, having been:
  - Environment Agency Oxford Communications Manager 2008-2914
  - News Desk Editor, ITV Central News 1991-2006 (based in Abingdon, Oxon)
  - Resident of Oxford and its environs for more than 50 years
- 776. Now that all the parties have agreed, and found funding for, the OFAS, this longawaited opportunity to reduce flood risk to many residents and businesses must be grasped with both hands.
- 777. Oxford's vulnerability to flooding is down to its location within the Thames catchment, as well as the building development that has taken place over the past 200 years. While the mistakes of the past cannot be undone, this scheme offers many people in West and South Oxford improved circumstances in which to live and go about their daily lives.
- 778. While working at both the Agency and ITV Central, he saw at first hand the misery that flooding brings to residents and businesses. It is not just the financial hit nor the inconvenience. It is the vulnerability, the smell and not knowing when it might happen again.
- 779. He met many people, who had seen their homes and businesses flooded. It was inspiring to see their enthusiasm to do something about it. The OFAS gathered momentum after the floods of 2007. Residents got together to form the Oxford Flood Alliance and, in turn, worked with the Agency to find ways to reduce flood risk. The resultant scheme is a tribute to local effort.
- 780. During the development of the scheme, the Agency carried out wide-ranging ES. It was as aware as anyone of its own responsibility for the precious countryside around Oxford. Its experts sensitively considered any possible impacts. That said, it would always be difficult to dispel every lingering concern.
- 781. He is a member of the local Preservation Trust and share its attachment to the Hinksey Meadows, the Willow Walk and the visual amenity of Oxford. But, at the same time, that has to be balanced against the needs and welfare of a substantial part of the city's population at a time when the impacts of Climate Change are becoming increasingly felt. The floods of 2003, 2007 and 2014 are fresh in the local memory. Looking back further, there are the black and white photographs of the great floods of 1894, 1947 and 1963: they serve to heighten the awareness that even worse could be yet to come.
- 782. Without further delay, the time is right for work to begin.

# Archibald W Hendry (WRS/19)

- 783. He is of course very sad about the loss of meadowland and habitat caused by the inevitable destruction involved. Nevertheless, it seems to him that on balance the scheme proposed is a reasonable one.
- 784. He is familiar with the disputed area in question. He has lived on Osney Island for about 16 years, and his wife for many years before that. He knows that every few years the present system of ditches and channels barely manages to cope with the heavy rainfall we periodically get. He remembers in 2007 for example the water level being up to the top of his front doorstep, his wife and next door neighbour had to be evacuated later that evening. On that same occasion, a friend on Bridge Street had water 2 feet deep under her wooden floorboards. And neighbours on South Street and West Street had to use pumps to remove water from their homes. He hates to think of what would happen when the 'big one' comes (as it surely will, thanks to Global Warming). We must be prepared and have the OFAS put in place.
- 785. He has one main reservation maintenance. Sadly, most of the water channels around West Oxford are at present severely clogged with forests of reeds. (If you look for example over the bridge at Botley Road/ Westway, it's unlikely you'll see any water flowing these days, it's hidden underneath the dense forest of reeds that fill the channel). These channels should all be cleared now, and together with the new channel, maintained reed-free! Which of course costs money. He would therefore ask that adequate annual maintenance funds be a necessary part of the budget. What's the point of having lots of water channels, big and small, if they are all clogged? That's unlikely to deal with the deluge when it comes. At that time, perhaps only the creeping marshwort on the sheltered side of Willow Walk bridge will be the sole survivor!

## Margaret Stopard (WRS/20)

786. She writes in three capacities:

- As a former resident of South Hinksey, personally affected by severe flooding in 2000, 2003, 2007 and 2014
- As the former Chair of South Hinksey Parish Council for many years

• As the widow of Dr Peter Rawcliffe, founding member of the Oxford Flood Alliance until his death in 2020.

#### Impact of flooding

- 787. Their house in South Hinksey flooded in 2000, the first serious flood since 1947.
- 788. Relentlessly over many hours, the water flowed in between the floor and outside walls. Electricity failed, meaning no lights, no central heating, no oven and no kettle. Thankfully, the gas hob worked. They carried everything they could upstairs (including the cats), putting on wellingtons to visit the ground floor, or waders to walk across the lane to their neighbours or into the village.
- 789. The anxiety in a dark house with the waters rising was profound. The event was horrible, miserable and not a little frightening for them all, but especially so for her 10-year-old son and 6 year old daughter. The whole experience was physically, mentally and emotionally exhausting.
- 790. And it was repeated again in 2003, 2007 and 2014, with days or weeks of dread as the floodwaters moved inevitably across the fields towards their house. Each time, subsequent clearing, cleaning, drying and restoration took months. It was a dirty, stressful and, in spite of good insurance, expensive process.
- 791. This is the mental and physical impact of flooding on people, repeated across many homes in South Hinksey, and more than a thousand homes across Oxford. For the city, it means transportation and economic activity grinding to a halt, at enormous economic and personal cost.
- 792. They are lucky not to have suffered major flooding in Oxford since 2014. But climate change means flood events are likely to recur with increasing frequency and severity in future, with the city centre potentially at risk.
- 793. <u>OFA and OFAS</u>: Her late husband Dr Peter Rawcliffe was a founding member of the Oxford Flood Alliance ("OFA"). This is a community action group working to reduce flooding in Oxford. He remained an active member until his death in 2020.
- 794. In its early days, OFA campaigned for smaller improvements that would have local benefit, and could become, in due course, part of a more major scheme. These include Towels Mill Weir, culverts under Willow Walk and improvements to the culvert under the railway at Munday's bridge at Kennington.
- 795. Subsequently, OFA became a strong advocate of the OFAS, concluding it was the only means to permanently and reliably protect Oxford from flooding. As the scheme has been developed, OFA has played an important role in connecting the Agency to the views of local residents affected by flooding, partnering with the Agency and, where necessary, providing it with rigorous challenge and public pressure.
- 796. <u>Wildlife:</u> The members of OFA have always been environmentally minded people. Peter was a passionate environmentalist and conservationist. In the 1970s and 1980s he was a founding member of The Hayfield Road Residents' Association which campaigned to save from development, and to preserve The Trap Grounds as a wildlife haven in perpetuity.
- 797. Over the many years that OFAS has been under development and consultation, OFA has consistently advocated for a scheme that enhances habitat and wildlife around Oxford and ensures the effective management of these habitats into perpetuity. In OFA's view, her view, and the view of her late husband, the Agency has designed

such a scheme. OFAS would enhance the natural environment, creating new stream and wetland habitats, planting more trees and hedgerow and preserving (or replacing) grassland and meadow. Some disruption and potential loss of habitat is inherent in a scheme of this sort, but the design does everything possible to minimise, replace and in fact more than offset this disruption, in order to deliver a net benefit to the environment, as well as achieve the core purpose of flood alleviation.

798. For these reasons, she is a supporter of OFAS. she believes it necessary to prevent the enormous costs of flooding, personal and economic. And she believes it beneficial to Oxford's environment. She knows that her late husband shared these views with equal strength.

# David Rawcliffe (WRS/21)

799. He writes in support of the OFAS. He is no longer a resident of Oxford but was for the first 20 years of his life. His childhood home was flooded several times which was a frightening and unpleasant experience. He believes that OFAS is a necessary and important project to protect residents and businesses in Oxford from future flooding and its devastating effects. From the research he has done, it seems that the Agency have done everything possible to ensure the scheme is as environmentally friendly as it can be, and the benefits outweigh the disadvantages.

## Brian Spencer (WRS/22)

800. He writes to voice his unequivocal support for this thoughtful, well-planned scheme. As a local resident, flooding is a serious concern for him and his family. While they of course wish to preserve and not disturb their beautiful surroundings as little as possible, a sensible solution like this is absolutely necessary.

## Anne Thell (WRS/23)

- 801. She has lived in six countries -- some quite undeveloped (Thailand, Malaysia) and some quite affluent (Singapore, US, France, Japan) and there is just nowhere on earth that would allow this kind of public health hazard to occur year after year, to the great detriment to residents, without taking serious action to prevent further catastrophes.
- 802. We have focused so far on the detriment to property, which is no small area of concern, given that people's livelihoods are tired up in their homes and property, but there is also a clear public health issue at stake, one that will only get worse with recurrent floods. In the past couple years, her child has fallen ill on numerous occasions after slipping and falling into flood water, or being splashed on the way to school, and she had an awful stomach bug last year after being splashed walking her child to school. It's hard to believe that's allowed in West Oxford, of all places, and it needs to stop.
- 803. There is refuse, dead animals, heavy metals, industrial farm run-off and fertilizers, construction materials, faeces (the list goes on) floating in that water, and they inevitably track that into their homes for months each year as the waters rise. This will only get worse with the climate catastrophe that is now unfolding.

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- 804. She would also like to point out the importance of the myth of the 'pristine,' unchanged landscape those opposed to the scheme are trying to protect; no such things exists, as vast changes have already occurred in the area and continue to occur daily. This scheme would actually create new parkland, and introduce new wildlife and water species, which would be a boon to what is now mostly rough and trash-ridden terrain.
- 805. She would also like to point out how non-sensical it is to say you are "85%" in agreement with the scheme, yet are insisting that it not go ahead until you reach 100%. No public policy anywhere on earth generates 100% agreement from 100% of people (or nothing would happen anywhere, and we'd live in anarchy). If even the detractors agree with 85% of the scheme, that's a fantastic figure and we should move forward, given the great fortune of having the funding and a wonderful plan in place.
- 806. She also thinks that the plan itself is thoughtful and meticulous, with some of the best engineers and environmentalists in the UK contributing to its design. It will make their wild spaces even better, and more usable, while also protecting homes, health, and livelihood for so many people. Living in flood water for months per year is just not acceptable.
- 807. Finally, she would also like to point out the danger of the sensationalist lies being posted about the scheme. That all walking paths will be closed for 5 years, for instance (where did this come from?), or that giant areas of natural beauty will be destroyed. None of this is true, and most is spread by a small group that do not own property in the area. She doesn't think it's fair that this kind of misinformation influence the decision of the public or the council on this matter.
- 808. They are tremendously fortunate to have gotten the funding for this scheme and to have arrived at such a well-planned and environmentally conscious plan. It would be shameful and silly to squander this due to the special interests of a vocal minority. This needs to —be taken forward as soon as possible!

## Dr Maria Unkovskaya-Harley (WRS/24)

809. She writes in an utter support of the CPO scheme. She thinks it should be approved. She lives on Osney Island. The Bullstake Backwater is running at the bottom of her garden. Almost every year her riverbank floods. In 2007 she was saved by the numerous sandbags, front and back. In 2010 she very nearly came a cropper and had to use the pump in her conservatory. It was not too difficult then. She has been following the development of the scheme and feel confident that the Agency will be careful in developing the appropriate solution to the flooding threat.

# Andrew Boag (WRS/25)

- 810. Mr Boag urgently urges the go ahead of the planned OFAS as it is vital that Oxford have a new route for flood water to be taken to the west as proposed and to protect Oxford and Oxfordshire when under the potential impact of extreme weather events. It is clear that given the floods Oxford has attracted in the past, future floods will only be much worse.
- 811. He lives on Osney Island, an area that is highly liable to flooding. He has no immediate experience of flooding since he moved here 3 years ago, but he did come

close to flooding in a previous house. That house is in Thrupp very near the canal. About 20 years ago the water flow to the canal was mismanaged by the removal of the lock and sluice gate handles, meaning that all the properties further down the canal came incredibly near to being flooded.

- 812. His current house fronts the river where it is canalised for the Osney Lock so though he hasn't experienced flooding here in the last 3 years his past experience of living near the canal in Thrupp makes him concerned that if there were to be extreme water events locally that were not properly managed further up the river or indeed at the points in the river where the water levels are managed and maintained ahead of Osney the resulting flood waters would be extremely damaging to his home and indeed all of the environment on Osney Island.
- 813. He urges that to help put residents' minds at rest, that the planned OFAS should go ahead.

## Kevin Busby (WRS/26)

814. With increasing changes in weather patterns he believes that there needs to be a flood channel for Oxford. Having experienced the previous flooding in Kennington and the inconvenience it caused he supports wholeheartedly the proposed Agency flood alleviation scheme.

## Polly Rawcliffe (WRS/27)

815. She grew up in Oxfordshire, and her childhood home was flooded 4 times in those 18ish years. It was very strange and scary for her as a child, and she remembers missing many days of school when the waters were too deep to get to the bus stop. What really sticks with her was how stressful and upsetting both her parents found it not just when there was water in the house, but the preparation and aftermath which lasted months either side of the actual flood. It had long term impacts on her family's health and wellbeing, especially having to watch the flood waters rise and feeling powerless to do anything about it. OFAS is a vital measure to protect other families (and businesses etc) from future flooding. She is also so glad to see the care and attention that is being taken to preserve and even improve biodiversity in the area.

#### Dr Barbara Hammond MBE (WRS/28)

- 816. She has knowledge of Oxford flooding issues as a resident of Osney Island since 2000, as a voluntary director of West Oxford Community Renewables that owns and operates a 49kW hydro at Osney Lock, and as CEO of the Low Carbon Hub that owns and operates a 440kW hydro at Sandford Weir. In these capacities, she has experienced a number of serious flooding events, most notably the summer flood of 2007. She notes that the frequency of flood events is increasing and that we are increasingly seeing 'flash' events as a result of very severe rainfall over a short period of time. She would expect that increase in frequency and severity to continue as one of the impacts of climate change.
- 817. Impacts of these events include: increasing difficulty in insuring buildings; impact on the economic model of the hydro schemes; and difficulty in moving around the area in times of flood.

818. As a result, it is clear to her that the river and floodplain need extra to help to manage times of peak, and unexpected, flooding. The OFAS offers them this protection and is urgently needed, and this is the reason why she believes the CPO should be approved. She has confidence that the Agency and its legal team will have exercised great care in developing an appropriate solution and applaud the way they have worked with the Oxford Flood Alliance on this.

## lan and Claire Williams (WRS/29)

- 819. While they have been fortunate that their property has not been flooded, access has been obstructed by water and they wonder whether the recurring sinkhole has been caused or exacerbated by historical flooding. People living in the village are acutely aware of the risk of flooding, with the village communication networks going into overdrive when water levels are high. Even when the fields are not yet full, the anxiety is clear. For example, during the heavy rain on Friday 13 October 2023, members of the village were actively checking the water levels in the streams around the village and reporting to each other on the extent of water flow into the fields.
- 820. The majority of the primary school age children in the village attend schools in New Hinksey and Grandpont. Last winter, flood waters encroached upon the footpath to Oxford, making the journey more difficult and concerning with young children. The path was not completely blocked but has been in the past.
- 821. The OFAS promises to protect the village in a sustainable fashion which takes into account the increasing likelihood of flood events in the coming decades. Having reviewed documents connected to the scheme they are satisfied that it is well planned and necessary. The current protection offered by the Agency is very welcome, but it is dependent upon staff and other resources being available to deploy the barriers. They are aware that other areas may be prioritised, depending upon the wider situation. The proposal to build dykes and walls around the village provides a long-term and sensible solution in keeping with the landscape. Having lived in Cambridgeshire for many years, they can confirm that such protections are both effective and ecologically sound. The plans include a proposal to raise the level of the path to Oxford, ensuring the village remains connected to the wider community and the children do not suffer disruption to their education.
- 822. They are aware that alternative proposals have been put forward, but having attended presentations on the same, they did not convince that they would be an effective protection for the village. One of them would have the effect of destroying Hinksey ponds, which are an important ecological site. They have observed a wide range of wildlife in the ponds, including an otter.
- 823. They are looking forward to the completion of the scheme, including the wetlands area, which they understand will remain available to the public. They appreciate there will be disruption in the short-medium term, but this is outweighed by the benefits to both Oxford and their village. They are aware that statutory processes can take many years, but given the increasing risk of flooding, they hope that the scheme moves forward swiftly.

#### Stephen Lynam and Fiona McFarlane (WRS/30)

- 824. They live on Osney Island, in an area vulnerable to flooding. One of them has lived here for over 19 years whilst the other has lived here for 15. During that period they have lived through a number of threatening near flood incidents, and of course, the serious flooding of 2007.
- 825. They have experienced the fear and uncertainty as the water rises around them, and seen the impact on neighbours who've had water in their houses. In 2007, they were one of the few houses which did not flood, but it was a very close run thing. Their immediate neighbour for example, did flood and had to rent elsewhere for over a year whilst remedial work was completed.
- 826. Flood events are frightening, hugely disruptive to any kind of normal life, and have long-term impacts for those whose houses are damaged. They are already seeing more extreme weather owing to climate change and are concerned that the risk of more severe floods in Oxford must be increasing.
- 827. They have been aware of the development of OFAS for a long time now. They cannot pretend to have kept up with all of the technical arguments of such a large and complex project. Very few people will have possessed the expertise or the time to have been able to do that.
- 828. But they do have a great deal of respect for the Oxford Flood Alliance (OFA) who have worked for many years in lobbying the Agency and other key players to ensure improved flood management, and who worked hard to keep the community informed about the more short-term measures that were put in place after 2007. They know OFA has been closely involved in the OFAS project and they trust their integrity, and because of that, the expertise of the Agency. They therefore support the proposals.
- 829. There is vocal opposition to the scheme from some, and they are of course entitled to express their views, but they have not been impressed by their attempts to smear the reputation of OFA. They understand why some opponents of the scheme might wish to do that, because they want to give the impression that there is unified community opposition to the scheme, and it is clearly not helpful to their case to have to accept that there is a bona fide community group composed of individuals who have spent many years working to improve the lives of all, including those who disagree with them.

## Leanne McCreadie (WRS/31)

830. She has been flooded and so have personal experience of the disruption and cost to individuals without the scheme going ahead. She is concerned about the increasing risk and was always assured that it would be addressed by the scheme. To consider that it's not, is unfathomable. For her this is urgent. She had major water damage. She is also surprised that it is taking this long to get everyone on board. It seems obvious that this is the best option. She expresses confidence in the Agency and the proposals which have been put forward (the extensive consultation on the scheme, the Agency having sought to address objections, the plans being expected to result in an overall gain for nature and a lack of confidence in the alternatives proposed by objectors). As such she requests that the CPO be confirmed so the scheme can move ahead.

#### Andrew and Caroline Webber (WRS/32)

- 831. They have lived in Oxford for about 30 years, their house has been flooded in 2000, 2003, 2007 and 2013.
- 832. In the floods of 2000, 2003 and 2007 they faced significant damage to the ground floor of the house, having to replace wooded flooring and a kitchen. In the 2007 flood Mrs Webber moved out for a period of time. In fact at one point Mr Webber was the only person living in their street for several weeks. In the 2007 flood all properties were evacuated by the emergency services.
- 833. Prior to the 2000 flood a major development was taking place at the bottom of their street by a building company called Westbury Homes. The Agency put several conditions on this development one being that ground levels should not be raised, the reasons being Floodwater Flows and Floodwater Storage Capacity. This condition was ignored by OxCiCo.
- 834. There has got to be an increasing concern of the residents that as our weather patterns change because of climate change the flooding situation could become more frequent and could be a lot worse. Also, the fact that this Government have weakened their stance on climate change and building regulations.
- 835. They think we are all surprised that in 2023 we are still waiting for a major project in Oxford to reduce flooding risk. There have been small projects done to try to alleviate the problems, pumps at the bottom of the street, building a sandbag wall at the top of the street, trying to divert the water from the northern side of Botley Road to the southern side without it causing any damage. OxCiCo have already extended the Seacourt Park and Ride into the floodplain. It makes one wonder just how serious the decision maker takes flooding incidents.
- 836. Besides the damage that is done to the property there is the job of contacting insurance and starting the process of drying the damage out. In 2007 because of the amount of properties to be accessed they were waiting several weeks before an accessor could come out. Once the property was accessed the dryers and fans arrived, the damaged plaster had to be removed, once the house was dry, walls could be replastered, flooring could be replaced, and any damaged furniture could be replaced. This all takes time, it doesn't happen in weeks normally you are looking at several months. People also struggle with not physical health issues but mental health issues. It's depressing watching your house being destroyed and then trying to get it put right.
- 837. As a founder member of the Oxford Flood Alliance Mr Webber is fully aware of the meetings that have taken place between the City and County Council, the Agency and all the other parties involved. So why are the residents of Oxford still waiting for something to be done after 23 years? Why has the project stalled? Why are the CPO not been completed? Why does no one really care?
- 838. There is of course the alternative which has been put forward. A pump or several pushing water from the North to the South. They are not that impressed by a pump, it's got to be manned, it can fail, it will need to be fuelled, suction pipework would need to be placed in areas so the pump never loses suction. How big will the pump be? How much water can it move? Will the pumps need to be brought in, and are they permanent?
- 839. A channel which is proposed is permanent, does not need fuelling, does not need checking except maybe annually. So the plans put forward by the Agency are fully support.

- 840. They wonder how many of these objectors to the project have ever had their properties flooded. They suspect not many.
- 841. Another argument put forward by the objectors is the amount of trees and land that will be destroyed. Mr & Mrs Webber don't believe this as they think that once the channel has been built then the whole area will be enhanced and will be made better for attracting flora and fauna, trees removed would be replanted as would plants etc. The existing floodplain would still hold water so birds would still thrive.
- 842. They would like to think that this huge project will be put in place sooner rather than later to protect not only their house and their lives but also everyone who is affected by flooding.

# Alistair Lloyd (WRS/33)

- 843. He is a local resident, living in Osney Island. His property was affected by the floods of July 2007. As a result he welcomes the OFAS proposal and fully supports its implementation. In his view the scheme will reduce risk of further flooding to his neighbourhood, and has been designed in a way that is sensitive to the environment.
- 844. He is also a director of West Oxford Community Renewables Limited, a community energy organisation which owns a run-of-river hydro power station located at Osney Lock. Through this role he interacts with the Agency's River control team, and has gained some understanding of the challenges they face in managing flood risk in Oxford. He can also confirm that he does not expect OFAS to have any material impact on the operation of their community power station.
- 845. In summary, he supports the OFAS as he expects it to significantly reduce flood risk for Oxford residents and wish this to be communicated to the Inquiry.

## Dr Anna Pendry (WRS/34)

- 846. Dr Pendry is a resident of Osney Island. In 2007 her home was flooded, destroying the ground floor of the house.
- 847. In her view the much needed scheme is an effective compromise between improving flood protection for the area (for residents, businesses and those wishing to access Oxford) and other concerns such as biodiversity and environmental protection. Its thorough consideration of all competing interests means it is the most reliable and desirable option. The pressure of climate change and its attendant increased risk of flooding speak to the urgent need for the scheme.
- 848. Her support for the proposal is especially motivated by the awful personal experience of her home being flooded. It is hard to overstate the practical and emotional and enduring consequences of this experience. On the practical level, moving belongings upstairs prior to the ingress of water, finding a builder to confirm that the ground floor of the house needed to be gutted, ripping up the carpets and piling them outside on the pavement for all to gawp at, contacting the insurers and myriad related firms, negotiating with an obdurate loss adjuster, packing up belongings, arranging storage, finding a rental property, living in a smelly, damp house for 6 weeks until the insurance agreed to pay the costs of moving out for 7 months, moving out, paying for costs such as kitchen units that were located over 1 metre higher than the

floor level. Living in a rental property that was essentially a holiday home. She could go on, and on.

- 849. But worse than trying to cope with all of this was the emotional toll. Her home was invaded by an unstoppable force. She finds it pretty much impossible to convey the sense of intrusion, violation and personal vulnerability that she experienced both at the time and over the ensuing months. And the fear that this could happen again remains with her now, sixteen years later, every single time that it rains heavily.
- 850. She had intended to write in much more detail about the trauma associated with being flooded but perhaps the most powerful way she can communicate this is by saying that to even think about it all again is extremely distressing. The OFAS will offer her some much needed peace of mind.

# Martin and Georgina Kerr (WRS/35)

- 851. They write to express support for the scheme. They are homeowners in South Hinksey, having moved there in December 2021. Whilst they have not experienced the full effects that flooding can have on this village, they were given a taster last winter/spring when the Devil's Backbone became near unpassable due to flooding on both sides of it. This is a critical route for them to get their children to school every morning. Should the Devil's Backbone become unusable due to floods, it would severely impact their ability to be able to get their children to school safely and would involve having to take young children on the cycle path adjacent to the A34 at rush hour, which does not feel safe (particularly for a 4 year old). They have been made aware of the frequency of flooding in South Hinksey (and having lived in Oxford since 2005, have been acutely aware of the devastation that causes across Oxford). This is surely only going to get worse as climate change ensures a higher frequency of flooding in years to come! Given the urgency of this issue and the length of time it has taken to get to this stage to come up with some sort of solution, they cannot afford to wait another 10 years for alternative proposals to mature. It is their belief that the alternative proposals mooted will take too much time to be thought through thoroughly and do not provide the same level of confidence in minimising/eradicating flooding in Oxford for the next 100 years.
- 852. They appreciate the help South Hinksey has received/will continue to receive from the Agency the demountable barriers they have had deployed have made flooding much easier to manage but they are not guaranteed and will only have limited effectiveness and of course are only a partial solution for South Hinksey.
- 853. They are requesting that the CPO is approved so that the scheme can move forward, because they feel confident that the current proposal is the correct solution, not just for South Hinksey, but for the whole of Oxford.

# Claire and David Wilson (WRS/36)

854. Their house in South Hinksey has been flooded 5 times since 2007. Their flood insurance is still over £1,000 per year. They have spent a lot of money making their house flood resilient. They also allow the Agency access to their garden every year to erect temporary barriers and pumps to protect the village, which causes a lot of damage to their lawn and prevents them from moving forward with changes to the

bottom of their garden as they have to leave space for the barrier to connect with a bund in the field.

- 855. They would like to request that the CPO be approved so that the scheme can move ahead. Despite worries about environmental damage and disruptive building works, they would like the scheme to progress as uncertainty about the future is challenging to live with and creates discord in their tight knit community.
- 856. They would like to stress that they absolutely love the rural nature of their neighbourhood and they are very concerned about the destruction of trees and ancient hedgerows. They would appreciate it if the Agency could do all they can to make sure that, when work is carried out to build the channel, the contractors do not sacrifice nature in the name of expediency.

## Sohani Hayhurst (WRS/37)

- 857. Is seventy-six years old and lives in central Oxford and is surrounded by water on all sides. She has the canal and river in front of her house and a large stream bordering the bottom of her property. When we have heavy rain the water from river and canal overspill into her street and at its worst and this has happened several times in recent years has become part of the river with water rushing down the street.
- 858. The water has lapped at her front door and flooded her passageway any number of times. She lives in constant fear of her home being flooded especially so with the unpredictability of climate change and the kinds of flooding which are taking place elsewhere.
- 859. She has been investigating means of individual protection for her house which seems extremely difficult given that she is without a cellar and even if she was able to alleviate some flooding at the back and front of her house the main danger is likely to come from groundwater over which she is unable to find any means of protection.
- 860. She is very much in support of the OFAS it seems to be the only chance Oxford citizens and business' have of protecting their homes and business', climate change is now present in all of our lives.

# Ben Sawyer (WRS/38)

- 861. He is writing to support the OFAS, because it is important to ensure that the farreaching consequences of increased flooding in West and South Oxford are mitigated as far as possible.
- 862. He moved to this address in March, 2013. He and his wife understood that the garden of the house flooded but that the house itself had never done so, although it was on the edge of a floodplain. They took precautions to make the house flood resilient when they renovated it, including:
  - Not having any fitted carpets downstairs, and installing tiled flooring where possible;
  - Installing all electricity points at 1m height downstairs, and not running any electrical wiring under the ground floor at all;
  - Installing the boiler and fuse box upstairs.

- 863. The garden has flooded most winters since they moved in, and there is regularly ground flood water in the void below the house for many weeks during the winter months. On several occasions the water has been within a few inches of entering the house.
- 864. They have flood plans, a pump, and emergency bags at the ready in case of flooding and follow updates on the river levels when there has been heavy or persistent rain, in order to be as well prepared as possible. They explain to their young children exactly what is going on when the flood waters rise, and what it might be like and what they might have to do when the house floods. They listen to their questions and answer them as factually as possible, so that the prospect of flooding does not become a stressful or frightening thing for them. This has helped them to make plans that incorporate what matters to the children as well as to them as adults.
- 865. They hope that with these measures, they will be able to mitigate at least some of the impacts of their house flooding, so that they can concentrate their resources on dealing with the unexpected when the time comes.
- 866. Given the risks posed by climate change, it is inevitable that flooding in the Oxford area is going to get significantly worse in the medium to long term, including potentially more frequent and longer-lasting floods with more extreme water levels. Many of the impacts of flooding are out of the control of individual homeowners to mitigate, including:
  - Closure of or interruption to businesses
  - Closure of or interruption to schools
  - Interruption to or cancellation of public transport
  - Closure of the Botley Road
  - Closure of the Abingdon Road
  - Closure of the railway line and / or railway station
- 867. These will have even larger and broader consequences than the impacts on individual residents whose houses flood, devastating though those consequences are for the families in question. The knock-on effects of flooding are felt broadly across the whole community, locally and regionally, and run into millions of pounds.
- 868. Therefore, he supports the OFAS, because it is important to ensure that the farreaching consequences of increased flooding in West and South Oxford are mitigated as far as possible. As this risk is foreseeable, it appears irresponsible not to take action to reduce it when there is clear evidence that vital public infrastructure and public services will be compromised.
- 869. When flooding comes, infrastructure needs to be as resilient as possible so that potentially scarce resources can be concentrated on the areas most in need. He and his family have done what they can to be ready, and now they ask that the same is done to protect the public infrastructure and services on which we all rely.

#### Maria Radford (WRS/39)

- 870. Ms Radford moved to Oxford in 1995 and has seen several severe floods which have damaged nearby homes, disrupted power supplies, transport services and caused much stress to residents.
- 871. Her house was built in 1935 with a flood cellar and a garden which is four feet lower than the building. She has seen her 100 ft garden flood multiple times, but thanks to the height of her building, has never had the devastation of a flood in her house while neighbouring newer flats and houses have flooded because they were built too low.
- 872. However, the floods are getting increasingly rapid and unpredictable. She fears that South Oxford faces the threat of being overcome with the prospect of hundreds of properties being flooded.
- 873. For her, the worst experience was in 2014 when continuous rainfall caused the streams at the back of her property to flood to the extent that a small river started pouring through the flats development next to her. Water was surging into the South Oxford streets around her at a rate such that for the first time, she feared their homes would be overcome. Thank goodness, the rain stopped and the threat was over. She has never forgotten the extreme anxiety caused by that experience.
- 874. She fears that if the purchase of the land is quashed and the Agency scheme stopped, it may be many more years before another scheme is put in place.
- 875. She urges the Secretary of State to consider the urgency of the need to solve the damage caused by flooding for residents, business and transport.

#### Rosemarie Perry (WRS/40)

876. She is writing in support of the proposed OFAS. As a homeowner in Osney Island she has three times experienced flooding and its effects, though thankfully not as seriously as many other people in Oxford. In 2007 flood water filled her garden and seeped up through her kitchen floor, ruining the quarry tiles and the fitted cupboards. It was a frightening and dirty experience and resulted in the hassle of an insurance claim and a long and stressful period of restoration work. Insuring the house since then has been prohibitively expensive. With the likelihood of flooding apparently increasing it is essential that preventative measures are taken in Oxford and she supports the proposed OFAS.

#### Oxfordshire Local Enterprise Partnership (OxLEP) (WRS/41)

- 877. OxLEP has been a long-term partner of the OFAS. Originally, they worked with the Agency to secure £25.8 million-worth of Local Growth Fund investment for the scheme, to support its ambition of mitigating the risk of future flood damage to homes, businesses and transport infrastructure across Oxford.
- 878. Although OxLEP are by no means the definitive 'voice of business' for Oxfordshire, they have the ability to convene and understand the views of the county's business community, gaining insights across a variety of matters. To add, their Board of non-executive directors also includes representatives from within the private sector. Such governance provides their organisation with the ability to collate the thoughts of their

business community in relation to programmes that they either deliver, support or amplify through partners, wherever necessary.

- 879. Therefore, they believe they are in a strong position to outline the benefits to business of the scheme, as well as what its full-completion will mean to the city of Oxford and indeed, the county more widely.
- 880. It is their overall assessment that the implementation of the OFAS will have a positive effect on the local economy and in particular, those businesses located within close, geographical proximity of it.
- 881. Current statistics published by OxCiCo suggests that Oxford is home to around 4,950 businesses, collectively employing approximately 128,000 people. The city sees a large number of people employed by the two universities, as well as the public sector. It also benefits from significant jobs in other sectors including tourism, hospitality and growing science and innovation-led industries.
- 882. In a post-Covid 19 economy, ensuring these sectors, amongst others, are able to benefit from an infrastructure that protects against significant flood risk is imperative. This project will provide resilience to those businesses and indeed, the many companies who benefit from the various supporting supply chains.
- 883. It is also not just the city who will benefit from a reduced risk of flooding.
- 884. The major floods suffered by Oxford in 2003, 2007 and 2013 into 2014 cut-off significant parts of the city. Without the risk of flooding being addressed, key routes into the city, particularly for those commuting via motor vehicle, bus, foot or bicycle along Botley Road and Abingdon Road, will be badly-affected.
- 885. In addition, those travelling from further afield will feel a negative impact too.
- 886. Approximately seven million daytime and staying visitors per year are attracted to Oxford, generating around £780 million of income, plus, in terms of overseas visitors to the UK, Oxford was the ninth most-visited city for staying visits in 2021. This is a significant, economic market and ongoing opportunity for Oxford and Oxfordshire.
- 887. Severe flood disruption could potentially have a drastic impact on this multi-millionpound visitor economy, in particular those smaller, independent establishments contributing both economically and culturally within locations like the Covered Market who rely on an ongoing, strong footfall into Oxford.
- 888. Like any organisation, *OxLEP* recognise the likely short-term challenges that a project of this size and magnitude will bring during its construction, however the long-term benefits to the economy of Oxford and Oxfordshire will, they believe, outweigh those difficulties.
- 889. In summary, they believe that the scheme will genuinely help to keep Oxford in operation during times of major flooding and will, through a timely completion, allow an economy, already building a strong recovery following the pandemic, to continue to thrive.

## Carolyn Porter (WRS/42)

890. She lives in South Hinksey and has experienced severe flooding in 2007 to the extent she had to relocate with her then 18month old when she was pregnant with her second child while the property was dried out and was repaired. As a consequence of

this she puts in place a flood defence scheme and without this would have flooded at least 4 more times. Despite this during those subsequent flooding times she still experienced high levels of stress and significant disruption to family and work life. She had to wade into her property in flood gear and carry her children and pet into her property which at times was surrounded by water higher than adult thigh level; despite the flood defence she was unable to leave the property unoccupied in case of power cuts which would lead to failure of the defence system.

- 891. Flooding in her village not only negatively impacted them as a family but also the broader community as multiple properties flood and certain parts of the village including those with elderly neighbours are not accessible during flooding incidences. Flooding also has impacted the sewerage system with multiple occasions where sewerage drains overflowed posing danger to families with young children. For example while they lived at 32 Manor Road they had sewerage in their back garden on multiple occasions as well as in the house that had to be dealt with prior to her children being able to use the garden.
- 892. They also had major concerns about the saleability of their property (no 32) and when they decided to move it took them some time to find a buyer at a reduced market price for their beautiful listed property and this despite having a flood protection scheme installed. Several of her neighbours experienced similar issues when trying to sell their properties as they wanted also to move to avoid the long term stress implications of flooding events.
- Her husband who has separately written has tirelessly campaigned for flood support 893. for the village more broadly and this has resulted in high profile politicians visiting the village, the military deploying temporary flood defence in times of significant flooding and ultimately in temporary demountable barriers being made available to the village and the attention and support of the Agency during the flooding events. While she and other villagers appreciate the support, it does not fully allay long term concerns about flooding and is not fool proof so they urgently need the flood alleviation scheme to go ahead. Climate change is only going to increase the number and severity of these inundations and she is concerned that funds already allocated will be reallocated if there continue to be what are already significant delays to the implementation of the scheme. A significant public consultation regarding the best flood alleviation scheme started 6 years ago that led to the current one being selected. She is aware that there are several parties including some in the village who are objecting, but this scheme was selected as the best one from about 100 schemes that were considered, and many only have voiced concerns when the (short term) impact of the scheme's construction and its proximity to their properties has become apparent. I appreciate there will be a shortterm disruption to all of us in the village but overall the scheme will save properties and prevent not just her village but other parts of Oxford from the significant stress and associated cost of managing the after effects of flooding.

# Elizabeth Ball (WRS/43)

- 894. Since buying her property in 2018, she has seen some flooding most winters.
- 895. She has heard it said by some Oxford residents that hotter and dryer summer weather reduces the need for a flood alleviation scheme. It is not her experience that there is an obvious reduction in winter flooding.

- 896. Some also say it is a big investment, with environmental costs, to protect a few residences. Her understanding is that it will protect some residences but also businesses, the local economy and the contribution that Oxford as a city, privileged by wealth and opportunity, should make to the state of the nation.
- 897. The floodplain of Oatlands, King Georges Field and the meadows beyond is under water most winters at some point. The allotments by Bulstake flood most winters. As allotments these may be low priority but it does require the temporary flood barriers to residences in Bulstake and the Botley Road, which are manned 24/7. This is costly but a welcome comfort.
- 898. Each winter, she and other local residents watch the water levels. The most anxious watch was Christmas/New Year 20/21 when water was in the back garden and they used the community pump to put the flood water into the road although the water in the road drains was just below the grates.
- 899. It seems that there have been plans for an alleviation scheme for some time. Indeed she was told of them when she bought her property. Like other big infrastructure projects, progressing a scheme is difficult in the face of competing interests, perspectives and passions. The risk is no action.
- 900. The Agency has drawn in a wide range of professionals and consulted widely. Plans have sought to respond to environmental concerns.
- 901. Consultation and plan re/development has taken time. The time has come for implementation. She hopes that now, the next step will be taken to implement a scheme that protects local resident property, businesses and the economy.

## Gordon Mitchell (WRS/44)

- 902. In the 6 years he has been there he recalls 3 winters/springs when flooding was at a level which was problematic and of personal concern.
- 903. He understands the surrounding land is historic floodplain, but the safety, disruption and anxiety of the clear threat of flooding in the immediate area is problematic.
- 904. On each occasion there has been disruption to daily life. He has had difficulty undertaking his business travel, and normal daily life.
- 905. In the 3 problematic years the scale and longevity of flooding has affected travel, in one year resulted in some flooding in his garden and those of his adjacent neighbours, always resulting in anxiety on whether the water will breach the doorstep and cause major damage and disruption.
- 906. On each occasion the effect has lasted over a month and in one year returned several times over 3 months.
- 907. It has resulted in significant problems with damp damage on the internal walls from ground and foundations which have been sodden from lengthy periods.
- 908. He has attended and seen the briefing materials on the proposed scheme and believe the Agency scheme is the best option available. He has also seen the material from the objectors and am unconvinced that the alternatives are sensible options, whether that be delivery of untested options in one case or simply causing more flooding problems a few miles down the river in others.

909. He is concerned about the timescale this scheme seems to be taking. He thinks many residents and businesses think it had been decided to go ahead some years ago and are perplexed that it appears that this is not yet in delivery.

## John Cotton (WRS/45)

- Mr Cotton lives in South Hinksey and has experienced flooding of his property 3 910. times in the eleven years that he has been a resident, most seriously in Jan 2014 when they had to move out of their home with his elderly in laws and baby son, not yet 1 year old, as there was a foot of water throughout the ground floor of the house (and outside surrounding the property) and there was serious danger to life had the eldest or youngest members of the household fallen. Whilst splashing around in wellies may have seemed like fun initially, the danger to life, the loss of electricity (the dishwasher was under the water line so tripped the electrics), heating, hot water, cooking and lighting had a massive effect on their lives during the several days of this flood period. In terms of the impact on the fabric of their house, they are still having to attend to aspects of the house which were affected and damaged during the flooding and the marks of flood water are permanently visible on the walls of their house, particularly in the extension area that had only just been completed when the flooding came. He had taken as much care as possible to lift their possessions off the ground, but as they had no staircase at the time, was unable to take very much upstairs using a ladder. In the event, the depth of flood water was such that the pallets and blocks that he had used to raise larger objects up were insufficient and their piano, amongst other pieces of furniture, were damaged. As South Hinksey is known to be a flood risk area and their house has a history of flooding, they are not able to get insurance to cover flood damage, so there has been and will never be any financial recompense for the damage, past or future, caused by flooding. Obviously, he had to take time off work during the flooding and the period leading up to it too, and have had to do so several other times when flooding has been imminent in order to try to protect his property with sandbags, flood gates and clearing away as much as possible from the ground floor of the house. In most instances, these measures have been sufficient to safeguard his house, but on three occasions they have had water through the ground floor of the house, and each time the flood waters rise, it is a cause of considerable anxiety, stress and tension, as they constantly monitor the height of the water at key places around the city and have no control over whether the peak will come over their defences or not.
- More recently the Agency has been wonderful at coming out to erect flood defences 911. for the village and the most recent deployment almost certainly saved his property from being flooded. The water level, however, was perilously close to coming over the top of their flood defences, but these flooding events are regular, increasing in frequency and severity and only set to get worse with the effects of climate change that have been all too evident even in this last year. They were lucky that the Agency deployed effectively in this instance, but their deployment is not guaranteed - indeed it is reliant on less demand elsewhere, and were very nearly overwhelmed last time. When they have been flooded, the village has been wonderful at rallying round and helping them out. They have had people accommodate them, cook for them, help with the erection of defences, take items from their freezer into their own and offer to do shopping and assist them. These flood events impact the whole village, both in terms of the response to help others, but also in the major inconvenience of the direct footpath / cycle path into Oxford being closed and the need for many villagers to move vehicles to higher ground, parking some distance from their houses and losing vehicular access to their properties.

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- 912. He would therefore like to request that the CPO be approved in full so the scheme can move ahead. He is aware that there are a large number of land owners that have been served the CPO, but many of the parcels of land are unlikely ever to be needed, so the impact of the CPO is likely to be much less than it initially seems. He is also very keen that there should be as little delay as possible with the commencement of works for the OFAS as each day that goes by is another where they and many other householders are at an increased risk of flooding until the scheme is completed, a scheme which was identified as being urgently needed back when David Cameron was Prime Minister!
- 913. He is aware that there are many opinions on the scheme and that people's perceptions on the impact of this scheme differ, but he has seen no alternative proposal put forward which is better for solving the problem of flooding and which can be supported by proper data. He is convinced by the proposal put forward by the OFAS and firmly believes that it will offer the protection that it states in the scheme, supported by proper modelling and data. He is concerned by some aspects of the implementation, such as the plan to move spoil by road and certainly hopes that it will be possible for most of this to be done by rail, as the planners also hope, but his support of the scheme and the CPO are not affected by this.

# Alan Goodwin (WRS/46)

- 914. He is a resident homeowner who has lived in Osney Island since 2007 and is Chair of the Osney Island Residents' Association.
- 915. The need for a flood relief scheme to protect homes and businesses in West Oxford was brought home to him almost immediately after he moved here. The flood of 2007 was devastating for many of his neighbours on Osney Island and elsewhere in West Oxford and has been followed by several lesser floods. With climate change now clearly upon us, without the protection of a well-designed flood prevention scheme we can expect worse flooding in the very near future and for years to come. As well as causing huge disruption and financial and emotional distress, the knock-on effects of flooding on issues such as house insurance and property values are considerable. Many people in his community are dependent on regular access to healthcare facilities elsewhere in Oxford which are inaccessible in times of flood, and the same goes for families and small businesses dependent on home deliveries.
- 916. He believes the vast majority of Osney Island residents, and especially those in the southern half of the island which is more liable to flooding, are strongly in favour of the scheme. The small minority who oppose the scheme tend to live in parts of the island which have not yet been affected by flooding and can usually be relied on to oppose any new development of any sort on environmental grounds.
- 917. The need for a flood relief scheme is urgent. Failure to implement the OFAS would be an excellent example of 'letting the perfect be the enemy of the good'. The inhabitants of West Oxford need flood protection as soon as possible and cannot wait for some hypothetical scheme which might claim to achieve the same ends with nil environmental impact at some unspecified point in the future.

## *Emmeline Bryant (WRS/47)*

- 918. She lives in South Hinksey now, but during the 2007 flooding lived on Earl Street. Her house had 2 feet of floodwater and the experience was awful as the whole ground floor needed to be redone (new bathroom and kitchen and flooring once the house had dried out which took a while). They had to move out of the house for 8 months during which time she was pregnant and suffering greatly from constant sickness. As she was too unwell to do much, her husband dealt with the insurers and this took up hours every week managing the claim and the work. It was a very stressful, tiring and destabilising experience.
- 919. As extreme weather events are now becoming more, not less, common it seems to her that this scheme should be approved to ensure that communities in areas that flood are protected and that businesses and essential services are not disrupted.

## James Miller (WRS/48)

- 920. Mr Miller has lived in the local area since 2021 and the potential impact of flooding in the area highly alarms him. Every winter he watches with trepidation as the water level on the Bulstake Stream rises to alarming highs, knowing that the churning water only needs to rise a few more inches before it will flood his street. While he did not live in the neighbourhood during the 2007 flood, many of his neighbours did and their stories from then worry him greatly. This is especially the case since in the years following 2007 climate change has only made the occurrence of 'once in a lifetime' floods increasingly common.
- 921. The plans put forward for the OFAS offer therefore a ray of hope that the risk of his home being flooded might be seriously reduced. He is unconvinced that plans proposed without the North Hinksey channel will be effective at reducing flooding for his home. He has faith in the Agency's thorough plans and think it wonderful that as well as reducing the flood risk in the area the proposed plans will also ecologically benefit flora and fauna in West Oxford.
- 922. He asks that the CPO is approved so that OFAS can proceed and so that he can have peace of mind about the risk of his home flooding. Despite the urgent need for the flood alleviation scheme, progress over the last years appears to have been slow. He deeply hopes that approval of the CPO will allow the project to move towards completion swiftly.

#### Paul Kirkley (WRS/49)

- 923. As an OxCiCo officer, he was actively involved in flooding investigation and in providing protection measures from 2007, when floods affected Oxford so severely in mid-summer, until he retired in late 2015. Throughout that period he was as active member of the Oxfordshire Flood Liaison Group, and attended all AGMs of OFA (Oxford Flood Action).
- 924. He was personally responsible for schemes arranging property-level flood protection measures for dozens of houses on Osney Island, Earl Street and Duke Street (off the Botley Road) and around March Road in Cowley. He also undertook the survey and design of measures for construction by the developer of the retail site on Lamarsh Road

which resulted in turning flood flows over the Botley Road (in 2013) to discharge to the floodplain rather than inundating 36 houses.

- 925. He has taken an active interest in this Agency scheme throughout and is disappointed that, despite an earliest possible completion date of 2015 when first proposed, it has yet to be commenced. Obviously, he understands that a significant part of that delay has been due to liaison with Highway Engineers over adapting the replacement bridge on the Southern Bypass, to the great advantage of the OFAS. And that this delayed the whole project as that downstream section was the starting point for construction.
- 926. However, Oxford's residents, workers and visitors have waited quite long enough. All objectors have had sufficient time to raise their points of view in the 14 years since this scheme was first proposed. He understands that subsequent cost-engineering and rerunning of the hydraulic models has resulted, by now, in a truly cost-effective scheme. In addition, the Agency has developed an approach which both minimises damage to the environment and enhances it for the benefit of future generations.
- 927. He knows that, in 2007, a total of 183 of Oxford's houses were flooded internally above ground floor level: he was responsible for managing the surveys which identified them. And many others suffered underfloor flooding, which resulted in unhealthy living conditions.
- 928. The problems for those residents were clearly acute. However, fear of flooding brought stress to countless others and flooding of key arterial roads and the main railway line to London caused immense economic damage to many other individuals and to Oxford as a whole.
- 929. Yet the 2007 flood was a minor one compared to those from which Oxford will be protected by the OFAS proposals.
- 930. Whatever CPO is needed, whether for the permanent or temporary works necessary to implement this scheme, should now be facilitated, to enable construction to commence as soon as possible.
- 931. He would dearly like to see this scheme completed years before he dies, with growth reinstated on all working areas. Even better would be the chance to see it in operation, turning floods around Oxford as his little scheme once turned floods on the Botley Road to save the 36 houses of Earl Street.

## Diane Chambers (WRS/50)

932. She has lived in Oxford, in one of the most flooded streets in the city, since 1987. Her home has been flooded three times. It's not just a question of flood gates at doors, etc to prevent water coming in, it usually comes up first through her concrete floor and she does not know how to stop that! In the worst flood of 2007 the water was almost two feet deep in her house. It's an awful thing to happen to your home. She stood at the top of her stairs and watched the water slowly coming up higher and higher wondering when on earth it was going to stop. She was evacuated by the Emergency Services at 3.00 a.m. You have to go through something like this to understand the serious impact that flooding has on people's physical and mental health. It takes months, and years, out of their life.

- 933. She has spoken to people locally, who haven't had problems like this, and they assume that everyone's back to normal after six months. She didn't get a 'drying certificate' for nine months, and restoration work couldn't begin until that was signed off. It took 18 months before she could get her home back together again.
- 934. Climate change is happening at a very fast rate. Recent 'showers' have been downpours and it will only get worse. The fields near her home are already becoming waterlogged.
- 935. The Agency has been working on this scheme for years and surely wouldn't put forward proposals which aren't going to work. They must have tested for everything. Something has to be done and soon, so to say again she fully supports the OFAS.

# S Voysey (WRS/51)

- 936. They have lived in Earl Street since September 2012. They still live with the effects of the 2007 flood on their house—damp problems in the walls, insurance still difficult to get and at least twice the price of other homes when they can find a provider, and more. They remember well the 2012 and 2013 flood events which had them sandbagging homes up and down the street, and especially the 2014 floods that tested the emergency response plans in place for Earl Street and nearby streets, including their street's own mobile pump being deployed and flood barriers erected at the Botley Road end. With all those things in place, they still had flood water through their kitchen.
- 937. There has been a well-coordinated campaign against the scheme. Several things have concerned him about this campaign, one illustrated in the following story. Walking his dog in Hinksey Meadow a few months ago he was stopped by a campaign supporter. "Isn't it terrible that they want to dig up this beautiful meadow," she said, "cutting down five lovely old trees in the process—all for the sake of a few homes!" He asked her where she lived. She pointed to the houses on the hill above Hinskey Lane. "So, you haven't been effected by flooding personally then?" he asked. She admitted that she hadn't. He then told her where he lived and what his street had experienced over the years. He explained that it wasn't 'a few' homes at stake, but hundreds of homes and businesses along Botley Road and its side streets, including council housing blocks like those on Bullstake Close, the whole of Osney Island, hundreds more along Abingdon Road and other effected areas of the city. Literally hundreds of homes and businesses with thousands of people and their livelihood and wellbeing at risk. "But even if it was only 'a few' homes affected," he asked, "do you think you'd feel differently if your home was one of them?" She admitted that she might.
- 938. The Flood Alleviation Scheme has had plenty of consultation and been delayed for far too long. He trusts that those with actual flood experience and those with real potential flood losses will have their views appropriately weighted in this decision.

## THE STATUTORY OBJECTORS (Written Representations)

## Network Rail Infrastructure (OX 001S)

- 939. Network Rail has various land interests affected by the Order and objects to the confirmation of the Order for reasons set out below.
- 940. The extent of land interest sought by the Agency pursuant to the Order affects Network Rail's operational land. The nature of the acquisitions sought (together with the

works proposed for which the Order is sought) have the ability to compromise the integrity of the railway assets and systems.

- 941. Network Rail must have full control over the land on which the railway sits (and related assets) and the ability to access such railway and assets for the purposes of ongoing safety and maintenance requirements. The Order currently prejudices the ability of Network Rail to do so if confirmed in its current form.
- 942. Network Rail has been engaging with the Agency to put in place appropriate agreements to de-risk the concerns raised above and will continue to do so. However, for the time being Network Rail objects to the confirmation of the Order and reserves its position to further expand on and include further representations as further information is provided.

## Travelodge Hotel Ltd (OX 002S)

- 943. They formally object to the CPO which is being promoted by the Agency.
- 944. The Objector enjoys the benefit of a leasehold interest over land on the south side of Abingdon Road, Oxford, Title Number: ON323126 (the property). The lease is held with Milton Keynes Parks Trust Limited and commenced on 7 December 2015 for a term of 25 years.
- 945. The property comprises of a three-storey hotel, with 83 hotel bedrooms. Vehicle and Pedestrian access to the property is provided via Old Abingdon Road (public highway).
- 946. It is understood the proposed order includes the acquisition of rights over Plot 11-107. It is proposed to use the land as a temporary working area, and for the AA to pass and re-pass with and without machinery, plant and equipment between the public highway and all parts of the works over 56 square metres of car park access land to Redbridge Park and Ride and the hotel, south of Old Abingdon Road, Oxford.
- 947. Accordingly, this Objection has been made to protect the Objector's position, pending a decision to: 1. Remove those property interests in question from the Order; and 2. Reach an acquisition by agreement on appropriate occupational terms.
- 948. For the following reasons the Objector formally objects to this Order.

<u>There is no case for part of the Objector's property (Plot 11-107) comprising access</u> road and pavement to be included within the Order

949. The Order contains 56 sqm of the Objector's property. The AA has failed to demonstrate that the acquisition of rights is necessary. There is an alternative access road (Plots 11/108 and 11/109) included within the Order which would allow for the Objector's property to be removed from the Order. The works compound proposed at the property could be located within the main works compound within the Redbridge Park and Ride.

The Objector is concerned about the impact of the construction of the scheme and its impact on the hotel business

950. The Objector is concerned with the disruption caused by the acquisition of rights over the property to service the wider construction compound within the Redbridge Park and Ride. The construction of the scheme is likely to have a negative impact on business activity. Access from Abingdon Road is likely to become congested, with road

closures considered. The impact of this disruption is anticipated to negatively impact customers / staff resulting in business disturbance and reputational damage.

- 951. This is further confirmed within the ES: 'the Scheme will result in temporary disruption to some existing businesses (notably those along Botley Road, Old Abingdon Road, Oxford Spires Hotel and those within adjacent retail/business parks and industrial estates to the scheme) during the construction works. Such impacts will result from localised and temporary increases in noise, vibration and access disturbance (considered minor to moderate negative magnitude and a very high value receptor), mainly as a result of construction activities and to a lesser extent from associated localised increases in vehicle movements due to the delivery of materials, machinery and site personnel. There will also be disturbance to some commercial properties and businesses over which access will be required for construction, for example Seacourt and Redbridge Park and Rides. These are considered to be potentially moderate adverse impacts.'
- 952. Working hours for the construction of the Scheme are also a cause for concern. They are currently proposed to be 7.00am to 7.00pm Monday to Friday and 8.00am to 1.00pm on Saturdays (with piling works restricted to 8.00am – 6.00pm Monday to Friday). This provides the ability to cause business disruption throughout the business day causing most impact to customers and staff.

The use of compulsory purchase powers is premature; the AA has not made a meaningful attempt to acquire the interest by agreement.

953. The Department for Levelling Up, Housing and Communities document 'Guidance on Compulsory purchase process and The Crichel Down Rules' states:

"The confirming authority will expect the acquiring authority to demonstrate that they have taken reasonable steps to acquire all of the land and rights included in the Order by agreement."

954. The Order Statement of Reasons states that:

"The Environment Agency has approached owners, lessees, tenants and known occupiers, for the purchase of the land and/or rights in land, that are required for the CPO Scheme and terms for such purchases on a voluntary basis were issued during Autumn 2018 ("the 2018 Terms"). The Environment Agency encouraged the affected parties to obtain professional advice to help steer them through the process of reaching a voluntary purchase agreement where appropriate. Each affected party was advised that they could engage a qualified surveyor to act on their behalf and that the Environment Agency would meet their appropriate and reasonable fees incurred".

- 955. The Objector has not had any meaningful discussions with the AA or their representatives and are unaware of any substantive efforts to make contact beyond:
  - Works Licence Agreement Letter dated 15 August 2022
  - Environment Agency Oxford Flood Alleviation Scheme Update dated 12
    December 2022
- 956. Engagement has been provided via a proposed Works Licence, however this is not drafted on CPO terms and the Objector is yet to have any meaningful discussions on the Licence Terms proposed with the AA. To date no meetings have been organised by the AA's representatives with the Objector's agent. The dates for when the licence

would come into effect have not been provided, and no disturbance compensation provisions have been formally included within the licence.

- 957. The AA's representatives have also not responded to requests for further information specifically relating to:
  - Whether access would be retained along the slip road to allow customers and staff 24/7 access into the Travelodge site; and
  - When the works would take place (would occupation be weeks or years).
- 958. This lack of information causes significant uncertainty to the Objector.
- 959. They conclude that the AA has not taken reasonable steps to acquire the property by agreement nor is compulsory purchase being used as a last resort. Accordingly, the Draft Order should not be confirmed.

#### Waitrose Ltd (OX 003S)

960. The extent of land affected by the Order relates to the main access to the service yard for Waitrose delivery vehicles. The uninterrupted use of this service access road is imperative for the ongoing operation of the store. Whilst the right sought is expressed to be a temporary right, the reality of the Order, if confirmed is that it would enable a permanent right to be exercised over this land. The acquisition of any right, whether temporary or permanent over the sole service yard access will severely affect the operation of the store.

## National Grid Electricity Transmission plc (OX 004S)

961. Objection Withdrawn

## SBM UK Ltd (trading as Jewsons) (OX 005S)

- 962. The property is identified on the CPO map as land to be acquired to exchange for existing open space and thus, is identified as 'Exchange Land'.
- 963. SBM UK Ltd holds a freehold interest in the property.
- 964. SBM UK Ltd object to the above-mentioned Order on the following grounds:
  - SBM UK Ltd is willing and able to dispose of its interest in the property to the Agency by private treaty;
  - Agreement of terms has not been reached between SBM UK Ltd and the Agency;
  - The Agency has not demonstrated that there is a sufficiently compelling case in the public interest to justify interfering with SBM UK Ltd's rights under the European Convention on Human Rights;
  - There are no compelling grounds for the Order to be confirmed to enable the compulsory acquisition of the Property.

# Sackville UK Property Select III Nominee (3) Limited and Sackville UK Property Select III Nominee (4) Limited (OX 007S)

- 965. Sackville purchased 234 Botley Road, Oxford, OX2 0HP with the intention of redeveloping the site for life sciences. Design development has been ongoing for some time with significant capital and resource invested to date. It is the intention to submit a full planning application in the Spring of 2024. The envisaged development is in the region of 20,000 sqm (215,000 sq ft) with a gross development value in order of £300,000,000.
- 966. Our client has engaged Foster + Partners to design the scheme a globally recognised architectural practice. Foster + Partners are supported by an extensive team of consultants. Our client is engaged with the Local Planning Authority (LPA) having concluded a number of pre-application meetings and a design review workshop.
- 967. The LPA are accepting of a substantial redevelopment of this employment site for life sciences. The design information provided to date is evolving as our client prepares the final planning application, however, it is indicative of our client's aspirations and thus the need for development flexibility.
- 968. As of today, our client has the ability to redevelop the land and amend the buildings layouts, with the restriction that the footprint can be no greater than that present.
- 969. Without consulting our client and unaware of the intended redevelopment of the site, the Agency designed the existing flood defence structure to allow for only one narrow vehicular entrance. This is in conflict with our client's emerging designs which will require:
  - the width of the existing entrance to the north of the site (off the rear access road within our client's title) to be doubled in size to facilitate Heavy Goods Vehicles (HGV) and commercial goods access and egress.
  - a second and separate access point to the north of the site (again off the rear access road within our client's title) for passenger vehicular access to the proposed disabled and VIP car parking. It is best practice to separate the passenger vehicles from commercial vehicles.
- 970. Throughout the CPO process there has been a complete lack of meaningful engagement or acknowledgement that our client's redevelopment of the site will be impaired by the arbitrary position of the Agency's proposed flood defence structures which dissects the site.
- 971. Since submitting our objection, we met (July 2023) with Dalcour Maclaren (DM) and the Agency's, the lack of engagement from the Agency is exemplified by the fact this meeting took four months to arrange. During this meeting we explained why building the flood defence structure (in its proposed position) would impair redevelopment of the site.
- 972. We have tabled a realignment of the flood defence structure alongside a set of heads of terms which would allow the Agency to build the flood defence structure around the perimeter of our client's site. This alternative proposal is demonstrably the same in length and design but relocated a very small distance to our client's title boundary. Since submission of this solution to DM and the Agency in March 2023, the proposals have been summarily dismissed with no reasonable justification. The Agency have simply refused to amend the flood defence design without explanation other than they wish to minimise any potential loss of the existing floodplain. What is at odds with

the Agency's refusal and current position is their assertion that our clients can relocate the flood defence in the future.

- 973. DM and the Agency would appear deaf to the most simple and cost effective solution we have tabled which irradicates our concerns.
- 974. Despite our best efforts, we are no further forward than we were in March 2023 and we have made no progress in reaching a suitable agreement. Attached at Appendix 6 is a chronology of our discussions along with extracts of key exchanges. This includes an indication from the Agency that it may be possible for our client to move the flood defence structure at a later date with consent (the criteria for which unknown). Our position, in the interests of (i) costs and (ii) sustainability (needless additional construction works) is that it should be installed in the alternative position at the outset.
- 975. It is unreasonable for the Agency to suggest that they have constructively engaged with us when no progress has been made on reaching an agreement. In light of the recent decisions at Vicarage Field and the Nicholson Shopping Centre, it is not acceptable for the Agency to simply suggest that our queries and concerns have been addressed.
- 976. In our view, reaching an agreement is the true mark of engaging constructively with affected parties, the Agency have failed in this duty as demonstrated by the number of objections that remain outstanding.
- 977. Our client is supportive of the principle of the Agency flood mitigation works but only insofar as they do not impair their ability to redevelop their site. The gravity of this impairment and the significant financial implications upon our client would appear to have been disregarded by the Agency and their advisors to date.
- 978. From the outset, we have explained this to DM and the Agency and that it is critical our client retains their flexibility in order to allow options to be considered and fall away. The constraints the proposed location of the flood defence structure will result in our client's current design inaccessible.
- 979. It is important to stress that the Agency do not need to be granted CPO powers to build the flood defence structure as our client is prepared to grant the Agency the rights to build and maintain the flood defence structure in the realigned position being proposed by our client that being around the perimeter of the northern boundary in exchange for £1. A revised set of heads of terms setting this out were issued to DM in September.
- 980. The proposed alternative layout tabled by us does not result in any material change to the wider Agency flood mitigation works but does maintain flexibility for our client, removes the risk of impairment and thus no compensation would become payable.
- 981. Whilst we are well aware that a Public Inquiry is not the forum to raise issues of compensation, in the circumstances, we believe it is relevant to point out the willingness and reasonableness of our client to treat with the Agency on terms that retain flexibility, yet allow the Agency to deliver their scheme unfettered and at minimal costs (£1 plus professional fees) vs the Agency current course of action that will impair the development and delivery of a £300m life sciences development in Oxford and result in a very substantial compensation claim against the Agency.
- 982. Given that our client has made an offer to sell the Agency the rights to deliver the Scheme and the Agency continue to ignore this offer, we contend, in accordance with the Inspectors decision in Harlow District Council and cost implication following the

subsequent litigation by Powerrapid Limited, that the need for the CPO is premature and may result in yet further unnecessary costs.

- 983. Our client remains ready, willing and able to treat with the Agency and has offered them terms that not only allow them to deliver their Scheme but also allows our client to retain the flexibility they require in order to deliver their own development.
- 984. Unfortunately, the Agency's reluctance to engage with us will result in a significant compensation claim that could have been avoided should they continue to stay the course.

## Julian Richer and Richer Sounds (OX 011S)

Objection 1 – failure to assess impacts and consider alternative proposals.

- 985. The Agency accepts that the CPO will have an impact on their clients' property and business. The Agency does not accept a failure on their part to consider alternatives. Regrettably in practice the level and speed of engagement has been inadequate and the result is that full agreements have still not been received from the Agency to enable their client's objection to be withdrawn. A draft of the main agreement was only received at 17:08 on Friday (13 October 2023). It is incorrect for the Agency to suggest that their clients should withdraw its objection in the absence of any binding commitment from the Agency not to exercise compulsory purchase powers which are sought by them and they still seek notwithstanding that alternative arrangements could be entered into which could be acceptable to both parties.
- 986. Their clients sent Heads of Terms to the Agency as long ago as 6 February 2023. Notwithstanding further correspondence since that date the Agency has only just been able to instruct solicitors and begin to issue documents to settle this matter.
- 987. Their clients would be willing to enter into the arrangements set out in the heads of terms which should be entirely acceptable to the Agency.
- 988. Compulsory purchase is a last resort. Given that their clients are prepared to enter into the arrangements there can be no justification for the acquisition of the rights sought in respect of their clients property in the CPO.
- 989. In relation to the rights sought in the CPO, they note that the Agency believes that the impacts can be controlled and mitigated. This is not the case and no evidence has been put forward to support this contention. The rights sought in the CPO would result in business extinguishment for their clients.
- 990. The proposals put forward to control and mitigate the impact would be contained in the agreement. They cannot be relied upon in the context of seeking CPO powers.

#### Objection 2 – Planning permission

- 991. It is accepted that planning is a separate regime. Nevertheless the Agency is required to demonstrate that there are no impediments to the delivery of the CPO scheme. A bald assertion that there are no such impediments is wholly inadequate.
- 992. Their understanding is that the planning application for the scheme as a whole remains undetermined and the Local Planning Authority is considering a further round of consultation. At the very least there are material issues that the Local Planning Authority has not formed a final view about.

993. Furthermore, there is nothing to suggest that the Local Planning Authority will grant planning permission in the form relied on so far as it relates to their clients' property given the substantive objections raised by their clients. It would be unsafe for the CPO to be confirmed in relation to their clients' property in the absence of determination of the planning application.

## Objection 3 – Business extinguishment

- 994. They have dealt with this above. No binding agreement has been entered into with the Agency and no undertaking has been given by the Agency not to exercise compulsory purchase powers.
- 995. The consequence to grant CPO powers in the form sought would result in their clients' business being unnecessarily extinguished.

#### Objection 4 – Heads of Terms

996. The basis on which their clients are prepared to enter into agreement and subject to contract. We still await full draft documents from the Agency and a costs undertaking.

#### Objection 5 – Failure to engage

- 997. It is now a simple matter for the Agency to engage in the process necessary to reach finalised agreements. Any previous engagement would be rendered meaningless if the Agency is not prepared to act promptly to reach a settlement.
- 998. Their clients' position is very clearly set out and they are entitled to expect the Agency to give this matter the necessary attention.
- 999. They remained prepared to seek to reach agreement with the Agency in the period before the commencement of the Inquiry. But time is now short and the Agency needs to issue full documents and provide a costs undertaking immediately and deal with them promptly.

## North Hinksey Parish Council (OX 012S)

1000. The Agency made The Environment Agency (Oxford Flood Alleviation Scheme) Compulsory Purchase Order 2023 on 16 February 2023. The Agency wishes to acquire a part of Seacourt Stream which is owned by North Hinksey Parish Council.

1001. North Hinksey Parish Council objects to the CPO on the following grounds:

- The land the Agency wishes to acquire (a part of Seacourt Stream) is adjacent to/part of allotments owned by North Hinksey Parish Council for the enjoyment and use of its parishioners.
- Should the OFAS planning application be approved, North Hinksey Parish Council will allow the Agency and their contractors access to the land for the necessary works for the duration of the works (provided they are temporary and within reasonable agreed dates) but does not agree to give absolute title (ownership) of any part of the land to the Agency or any other body.

#### Hartwell PLC (OX 013S)

- 1002. With reference to the CPO submitted by the Agency for confirmation to the Secretary of State in the Department for Environment, Food and Rural Affairs dated 16 February 2023 ("the CPO"), Hartwell PLC objects to the confirmation of the CPO in respect of the interests that the Agency wish to acquire from Hartwell PLC.
- 1003. Firstly, it must be noted that the Objector fully supports the objectives of the Flood Alleviation Scheme, but is submitting an objection on the grounds that matters affecting the Objector's property have not been correctly addressed by the Agency or their advisors, and this objection is submitted to protect their position.
- 1004. The CPO proposes to erect a flood defence wall in a position across the property that severely compromises the use and amenity of Boundary House the alignment follows land parcels 01/015 01/020, as shown on the CPO plot maps (map 1 of 17).
- 1005. The positioning of the flood defence structure will have a significant impact on the use and enjoyment of the property and cause considerable diminution in value. Despite the Objector's request for meaningful engagement with the Agency and their advisors to discuss the alignment of the flood defence and suggest suitable alternative options, there has been no substantiative engagement throughout this process.
- 1006. The Objector has undertaken their own flood modelling which has shown that the acquisition is not proportionate. It can be demonstrated that the flood defence structure can be slightly realigned to the satisfaction of the Objector and will have no consequence on the impact of the wider flood scheme.
- 1007. The CPO further proposes to take land parcel reference 01/013 referred to as 'all interests in 11,943 square metres of grassland, trees and scrubland east of the A420 and north of West Way, Botley, Oxford' within Schedule 1 of the Land to be Purchased (Except Exchange Land or Additional Land) and New Rights of the Order, for the purpose of biodiversity improvements and other environmental benefits. Within the Statement of Reasons there is no justification about how this land will be used, or how it can be enhanced beyond its current state and condition, being a wooded area, and therefore the purpose for the acquisition of this land is called into question. The proposed inclusion of parcel 01/013 is considered excessive.
- 1008. The Objectors do not feel that there is justification for the CPO on land within their ownership. With proper consultation around the placement and nature of the flood defence, the Objectors will willingly agree terms to accommodate the Agency's proposed interests.
- 1009. They conclude that the AA has not taken reasonable steps to acquire the property by agreement nor is compulsory purchase being used as a last resort. Accordingly, the Draft Order should not be confirmed.

#### Terry's Stone Cottage Ltd (OX 014S)

1010. Objection Withdrawn

#### The Camping and Caravanning Club (OX 016S)

1011. Objection Withdrawn

#### Ms Ayse Ergeneli (OX 017S)

1012. Objection Withdrawn

#### Southern Gas Networks Plc (0X 019S)

1013. Objection Withdrawn

#### Antony and Theresa Aldwincle (OX 021S)

- 1014. They formally object to the CPO which is being promoted by the Agency (The Acquiring Authority).
- 1015. The Objector owns the property freehold land at North Hinksey, land registry references ON304305 & ON280835.
- 1016. Accordingly, this Objection has been made to protect the Objector's position, pending a decision to:
  - Remove those property interests in question from the Order, and/ or
  - Reach an acquisition by agreement and agreement over compensation on appropriate terms.

#### Grounds for Objection

1017. For the following reasons set out, the Objector formally objects to this Order:

- The Objector is concerned about the impact of the construction of the scheme and its impact on the property.
- The Objector is concerned that the impact of the construction of the scheme will have on the use of the property and its desirability for the tenant and any future tenants (the property is currently tenanted).
- The use of compulsory purchase powers is premature; the AA has not made a meaningful attempt to acquire the interest by agreement.
- 1018. The confirming authority will expect the AA to demonstrate that they have taken reasonable steps to acquire all of the land and rights included in the Order by agreement. The Order Statement of Reasons, para 15, states that:

"The Environment Agency has approached owners, lessees, tenants and known occupiers, for the purchase of the land and/or rights in land, that are required for the CPO Scheme and terms for such purchases on a voluntary basis were issued during Autumn 2018 ("the 2018 Terms"). The Environment Agency encouraged the affected parties to obtain professional advice to help steer them through the process of reaching a voluntary purchase agreement where appropriate. Each affected party was advised that they could engage a qualified surveyor to act on their behalf and that the Environment Agency would meet their appropriate and reasonable fees incurred".

1019. The Objector has not had any meaningful discussions with the AA or their representatives and are unaware of any substantive efforts to make contact. This is contrary to the above paragraph 15 within the Statement of Reasons.

1020. They conclude that the Acquiring Authority has not taken reasonable steps to acquire the property by agreement nor is compulsory purchase being used as a last resort. Accordingly, the Draft Order should not be confirmed.

## Pembroke College (OX 022S)

#### Ground 1 - Impact on Biodiversity and the College's Biodiversity requirements

- 1021. The College has limited access to external and open space. The College is based within the heart of Oxford City Centre and the only available land is made up of the sports fields and associated land adjacent to Hinksey Stream. A significant part of this land is used by the College for the use of a sports facility hosting tennis, crickets and rugby pitches. This is integral for the use of the College.
- 1022. The land to the west and south of the sports grounds are used by the College for Biological research and to support its biodiversity objectives. It is the only land available to the College for such purposes.
- 1023. The College is committed to increasing biodiversity and is aware of the potential of the Site to become a biodiverse lowland meadow. The Site is already significant in terms of biodiversity. A recent biological study found rare species on the site including Great Burnet, an indicator species of Lowland Meadow, a nationally at-risk habitat. It is also habitat to red-listed birds including Mistle Thrush, Spotted Flycatcher and Starling.
- 1024. Plant species present include cock's-foot Dactylis glomerata, false oat grass Arrhenatherum elatius, Yorkshire fog Holcus lanatus, perennial rye, common bent, rough meadow grass Poa trivialis, wall barley Hordeum murinum, creeping thistle Cirsiumarvense, bramble Rubus fruticosus agg., sow thistle Sonchus sp., cow parsley Anthriscus sylvestris, hogweed Heracleum sphondylium, dog rose Rosa canina, hawthorn saplings, nettle Urtica dioica, bindweed Convolvulus arvensis, creeping buttercup, broadleaved plantain Plantago major, ribwort plantain Plantago lanceolata, meadow cranesbill Geranium pratense, meadow buttercup Ranunculus acris, ragwort Jacobaea vulgaris, silverweed Argentina anserina, lords-and-ladies Arum maculatum, herb-robert Geranium robertianum, creeping cinquefoil Potentilla reptans, oak sapling Quercus robur, willowherb Epilobium hirsutum, yarrow Achillea millefolium, white clover Trifolium repens, knapweed Centaurea nigra, scentless mayweed Tripleurospermum inodorum and oxeye daisy Leucanthemum vulgare, oak, hawthorn, elder Sambucus nigra, dogwood, field maple Acer campestre, blackthorn Prunus spinosa, ash Fraxinus excelsior, poplar Populus sp., and goat willow Salix caprea.

#### Research:

- 1025. The College has recently carried out a number of research pieces on the Site. This included but not limited to the following research pieces:
  - Internal work by College undergraduate Biology students
  - Use by Departmental Biology DPhil students;
  - Defra Biodiversity Metric research
- 1026. Without the use of this land the College will no longer be able to carry out the same level of research most in particular the "400 Biodiversity Project" the project has grown into a long-term, student-led biodiversity monitoring and enhancement initiative.

Policy and objectives:

- 1027. The Site forms part of the Network Enhancement Zone 1 identified within the Oxford City Council (OCC) Green Infrastructure Study 2022 (the GIS), drawn from Natural England's Habitat Network Mapping. This is identified in the Natural England Habitat Network Mapping Guidance as '…land connecting existing patches of primary and associated habitats which is likely to be suitable for creation of the primary habitat…'. It also forms part of the OCC identified Green Infrastructure and is further identified as 'delivering' climate change adaptation as part of that function within the GIS.
- 1028. Noting this identified contribution to biodiversity, green infrastructure and climate change adaptation, the current operation and function of the Site is underscored in local policy within adopted Policies G1 and G2 of the Local Plan 2016-2036 and further within emerging Policies G1 and G5 of the emerging Local Plan 2040.
- 1029. The policy framework support extends to national guidance with Paragraphs 174 and 180(c) of the National Planning Policy Framework providing direct guidance on the point, directing decision and policy makers to focus their minds on 'minimising impacts on and providing net gains for biodiversity'.
- 1030. As such the present function has robust current and emerging policy protection. That function is inherently sensitive to disturbance arising from construction works, and goes well beyond the description of the land as 'agricultural land' within the Order. Indeed the area proposed to be taken risks severing the City Wildlife Site identified along the eastern bank of the Hinksey Stream, possibly significantly undermining the contribution made and the value of the entirety of that site's function, a contribution and value protected by adopted policy G2 and emerging policy G5.
- 1031. There are plans to further develop the land's biodiversity, restoring it as a lowland meadow as well as adding fruit bearing trees and wild flowers, forming an orchard and wild life centre to celebrate the 400th anniversary of the college and to support student welfare thereafter. This would enhance the contribution made by the Site towards the function that has established and emerging policy support at local and national levels, and a function which is fundamentally incompatible with the rights sought under the Order, which would risk entirely undermining that present and future contribution made by the Site.
- 1032. As yet the proposed mitigation is uncertain so cannot be adequately assessed, albeit the proposals relating to off-site terrestrial mitigation outlined within the published Statement of Reasons, and the CEMP and LHMP proposed within the pending planning application, is inadequate. This has been corroborated by the holding objection to the planning application currently maintained by OCC biodiversity officers. This is in the context of the particular location and function of the Site being such that any use (even temporary) of the Site for operational construction works will have a negative and meaningful impact on its function. This in turn goes to Ground 3 below.
- 1033. Biodiversity also is integral to the College's ESG agenda. Oxford University as a whole has an aim to reach net zero and improve their biodiversity by 2030, the use of the land impacted by the Order will have a significant impact on the College's ability to achieving this goal. These goals are made in line with the City Council's Local Plan 2040, particularly chapters 3, 4 & 5.
- 1034. The College notes that whilst the EA claim to have undertaken the necessary biodiversity calculations for the Scheme itself, the College is not aware of a similar calculation for the planning application regarding access to the Hinksey rail sidings. The

College would request that such modelling is undertaken for the EA's proposed route, and the College's proposed alternative route (through the Devil's Backbone, adjacent to the pre-existing footpath access), as part of the Planning Application for this element of the Scheme.

#### Ground 2- Impact on the College's future use of the land

- 1035. The College has outstanding plans to use the land to improve biodiversity, in line with its existing function and policy protections. These plans are under development and subject to baselining activities and professional advice, which has been ongoing despite the College's inability to improve the land during to the CPO proceedings. Given recent advice, the College's proposal is to restore the land as a lowland meadow, and plant some fruit trees and wild flowers, for the use of its 400th anniversary. Such an anniversary is an integral part of safeguarding the College's future funding and donation ability.
- 1036. Given the limited space available to the college this is the only land which can be used for this purpose.

#### Ground 3 - Scheme alteration

- 1037. Having highlighted the College's concerns to the Environment Agency we believe there has been no investigation to divert the right of access across the Site, thus avoiding the impact on the biodiversity and green infrastructure function of the Site, which is contrary to established public policy and interest. This is particularly pertinent given the scheme does not currently have the relevant agreement and authorisation to use the railway and railway sidings to remove the spoil from the scheme. We believe other routes should be investigated to remove the soil via the railway in the event the scheme obtains permission, for example to the south of the College's land. Other routes not including the railway should also be considered.
- 1038. An alternative route which did not require access rights across the College's land would alleviate Ground 1 and Ground 2 as stated above.

#### Messers R & R Baker (OX 023S)

- 1039. They are writing to formally object to the CPO which is being promoted by the Agency. The Objector enjoys the benefit of a freehold interest over the property, land registry reference ON174682.
- 1040. Accordingly, this Objection has been made to protect the Objector's position, pending a decision to:
  - Remove those property interests in question from the Order, and/ or
  - Reach an acquisition by agreement and agreement over compensation on appropriate terms.

#### Grounds for Objection

1041. For the following reasons set out, the Objector formally objects to this Order:

• The Objector is concerned about the impact of the construction of the scheme and its impact on the Objector's interests and the loss of the entirety of their holding in this location.

- The use of compulsory purchase powers is premature; the AA has not made a meaningful attempt to acquire the interest by agreement.
- 1042. The confirming authority will expect the AA to demonstrate that they have taken reasonable steps to acquire all of the land and rights included in the Order by agreement.
- 1043. The Order Statement of Reasons, para 15, states that:

"The Environment Agency has approached owners, lessees, tenants and known occupiers, for the purchase of the land and/or rights in land, that are required for the CPO Scheme and terms for such purchases on a voluntary basis were issued during Autumn 2018 ("the 2018 Terms"). The Environment Agency encouraged the affected parties to obtain professional advice to help steer them through the process of reaching a voluntary purchase agreement where appropriate. Each affected party was advised that they could engage a qualified surveyor to act on their behalf and that the Environment Agency would meet their appropriate and reasonable fees incurred".

- 1044. The Objector has not had any meaningful discussions with the AA or their representatives and are unaware of any substantive efforts to make contact with them. There has been consistent and persistent delays in engagement by the AA with lack of provision of an offer on commercially appropriate terms. This is contrary to the above paragraph 15 within the Statement of Reasons.
- 1045. They conclude that the AA has not taken reasonable steps to acquire the property by agreement nor is compulsory purchase being used as a last resort. Accordingly, the Draft Order should not be confirmed.

## Yvonne Hutchinson (OX 028S)

- 1046. The proposed plans will directly affect the surrounding fields and small livery yard where she and other horse-owners keep their horses.
- 1047. In the first place, the scheme would claim huge areas of the fields where they currently ride to exercise their horses. The limited areas remaining would be difficult to access as it would involve riding past extensive areas of construction. This would be completely unsafe. As a result, they will no longer be able to ride their horses.
- 1048. Of equal importance is that access is being demanded through their yard and across their paddocks for works vehicles and to store equipment. This would be in the very small area in which they operate. They would no longer be able to access their stable area, and the daily requirements essential for equine care would no longer be possible.
- 1049. She is one of a group of horse-owners at this livery. They have 9 equines, and have always been a much valued part of North Hinksey village life. If they lose this land, which they currently rent, they will not be able to relocate, as they do not have the funds to purchase private land.
- 1050. She might also add that they were extremely surprised to find the CPO nailed to their gatepost without any prior consultation or notification. She understood that such orders should not be served until planning permission is granted.

#### Dr Matthew Scarborough (OX029S)

1051. He objects in the strongest possible terms to the CPO on the grounds that the scheme will prevent his family and others from using the fields of which he is a registered tenant. In addition, the compulsory access route through a shared livery yard will render this completely unusable. Further afield, the scheme would markedly restrict the amenity areas that he currently uses for walking and riding. As a consequence, he would not be able to continue owning horses in the area and the local ecological diversity would be irreparably damaged.

## THE NON-STATUTORY OBJECTORS (Written Representations)

#### Andrew Clayton (OX 001N)

- 1052. He expresses a strong objection to this CPO. He is a resident and Parish Councillor of South Hinksey village, a community significantly affected by this scheme.
- 1053. He is very concerned that local views are being ignored in this process. In 2022, OxCoCo ran a public consultation as part of the legal process for this scheme, which 233 local residents and groups took the time to respond to.
- 1054. You will see that 91% of the respondents to this public consultation expressed objection to the scheme. These were for a wide range of issues, ranging from traffic impacts on the A34 of large numbers of lorries, the destruction of beautiful and rare local flora and fauna, the carbon footprint of the scheme, and the loss of local walking access and rights.
- 1055. Most importantly, there is strong feeling amongst respondents that alternatives to the current version of the scheme, that would have much smaller ecological, carbon, and financial impact, have been ignored by the Agency.
- 1056. It is astonishing to him that a scheme purported to be for the benefit of the local community should still be continued unchanged with such an overwhelming level of objection.

#### Anne-Marie Desitter (OX 003N)

1057. She objects to the compulsory purchase of Hinksey Meadow due to its regular use by large numbers of dog walkers, and also ramblers and joggers. The meadow contains rare snake's head fritillaries and is a beautiful traditionally managed flood meadow. Altering this with the proposed colossal flood scheme is very detrimental to the local ecology & environment.

#### Sarah Ainsworth (OX 004N)

1058. She expresses her opposition to the CPO served by the Agency for its proposed Flood Alleviation Scheme. She notes that the Agency has requested compulsory purchase for Hinksey Meadow and nearby fields, including one owned by FHT and leased the Scouts, Seacourt Nature Reserve and the fields along Electric Avenue from Osney Mead to South Hinksey. 1059. She has lived in North Hinksey since 1987 and her house overlooks these fields. They are a source of constant delight and she uses them daily for recreation, walking different routes at different times of the year as access to some fields is harder in the wet winter months. She is retired and widowed and open access to the immense biodiversity in these fields is a solace to her mental health and helps her remain fit. Her grandsons who are at the local primary school walk there with their friends and their dog and this allows them some independence in a safe setting away from the traffic which blights so much of this area. They also attend the 4th Oxford Scouts and use these fields for their games. At whatever time of day she goes walking, she sees other local people of all ages out enjoying these fields and they greet each other and comment on the beautiful flowers and abundant birdlife. Hinksey Meadow was given to the OPT so its rare ancient grassland could be enjoyed by local people. Please do not let this beautiful, accessible local space be taken from them by a CPO for the Agency's proposed flood channel which was opposed by 90% of the 300 local residents who commented on the Planning application in 2022.

# Hilary Mead (OX 005N)

- 1060. Please do not destroy their natural flood plain with the CPO.
- 1061. Their lovely rural path named Willow Walk has already had tarmac put down when the birds are nesting. Their house martins no longer migrate to North Hinksey Lane since the local building work. There are better natural schemes to stop flooding. This one is expensive. It is also very destructive. Please save this natural environment that is so precious.

# Leanne Kelly OX 007N)

- 1062. She walks the land subject to the CPO daily. she strongly objects to the CPO and the scheme on the grounds of destruction of habitats for the animals and birds, the destruction of precious grasslands, loss of trees and hedgerows, loss of access for public during construction and after the channel, the waste of public money for a scheme that is calculated on old data and is experimental. The Agency does not maintain or manage these flood meadows currently. There is no pollarding of willows or clearing of streams, no dredging of the waterways which are no longer navigable by boat as they used to be, and no maintenance at all anywhere on the land. The Agency are trialling much cheaper and less destructive schemes all over the country which use the natural landscape to mitigate flooding. There are plenty of experts who think that would be applicable in this area before years of construction, money and destruction.
- 1063. She hopes the Minister considers a less invasive, more up to date with current thinking and less expensive option for these precious grasslands and habitats.

# Julia Bray (OX 008N)

1064. She is a local resident (since 2013) of New Hinksey and her property is uninsurable against flood damage because of the high flood risk. Nevertheless, she objects to the scheme as it stands, particularly to the proposed channel to be dug through Hinksey Meadow and the CPO.
- 1065. The channel was planned before the extent and rapidity of the effects of climate change were appreciated. It does not meet the challenges we now face, which call for a thorough new study, and it does not take account of the flood alleviation measures being trialled elsewhere in the UK and whether they might be applied here.
- 1066. The channel will destroy a plant and wildlife habitat of a kind that has become rare to the point of near-extinction in the UK.
- 1067. It will cost a huge estimated sum for minimal (insufficient) protection. The adverse effects on the economy and the negative impact (direct and indirect) on human wellbeing, estimated to last for 3 to 5 years, have not been costed. It is realistic to expect that both overall costs and duration have been underestimated in the overall scheme, and that parts of the overall scheme would be abandoned in the course of implementation, but only after irreversible damage has been done (compare HS2).
- 1068. At a time of increasing pressures on all of Oxford's growing population, the loss of amenity will affect physical and mental health not only locally but city-wide, as will pollution and traffic congestion resulting from excavation and carrying away of spoil. The impact of the extra, heavy works traffic on local transport (particularly bus services, on lines which are vital not only to locals but also to commuters) has not been assessed. How will it interact with other local developments, such as the rebuilding of the railway bridge and the closure of the Botley Road?
- 1069. There has been insufficient local consultation.
- 1070. The study of the functionality of the scheme in both the short and long term has been insufficient. There is no realistic medium to long-term planning for mitigation/compensation of loss of biodiversity and for maintenance of the flood alleviation channel and surroundings. Some of the biodiversity loss (of nationally rare MG4a grassland) is not replaceable within the stated time frame, if at all.

## Dr Helen Harvey (OX OO9N)

1071. She objects to the OFAS, for multiple reasons, some of which are listed below:

- There is no proof that this scheme will actually work
- It is very poor value for money. How can spending £176 million to protect an extra 51 homes be sensible? An economic analyst would surely say that this is a complete waste of money. And we know that schemes like these never stay within budget they nearly always cost more (for example, HS2). The scheme represents a lot of public money being spent for very little/short term or no gain and to protect private property
- Biodiversity will be permanently damaged. The area currently supports a wide range of wildlife including some protected species and many species of birds. All of this will be lost. Even though trees will supposedly be replaced, they will take years to mature. The area will never be the same again. Why is this scheme being allowed given that the national government policy is to conserve and enhance the natural environment and protect the green belt? We should be conserving our natural environment, not destroying it
- Residents of South Hinksey Village, New Hinksey and West Oxford will be deprived of a recreational area for the 3-5 year construction period, not to mention being subjected to all the disruption (noise, dirt, increased traffic, pollution, etc.) of the construction work

- The works will increase traffic/congestion on the A34, a road which is already extremely busy and almost at a standstill at certain times of the day (particularly on the stretch of road between the Hinksey Hill and Botley junctions); the emissions from the earth removal vehicles will worsen the air quality (which is already known to be bad)
- Earth movement and the removal of trees (carbon sinks) will make the effects of climate change worse rather than better by removing these carbon sinks this is in direct opposition to OxCoCo policy to achieve a Net Zero Carbon Oxfordshire by 2050
- At the moment, the county is in drought this needs to be taken into account before spending money of flood schemes. Water needs to be stored more efficiently and rivers managed as a whole, not just in 'small' stretches.
- 1072. Overall, she thinks the scheme is a shocking, if not a wicked, waste of public money. The money would be better spent on clearing and maintaining all the streams, ditches and dykes in this area so that water could run away freely (a short walk in the area would show you that most of the streams have become blocked over the years with fallen trees and undergrowth) a method which has, up until recently, protected Oxford for 100s of years but the Agency seem to be against this. At the very least, this approach should be tried before the Flood Alleviation scheme a massive over-engineered and destructive project is put into action. It would have much less of a detrimental impact to her area and cost far less.
- 1073. Unfortunately, the proposed scheme seems to be yet another example of 'ripping out' something that is broken (ie. the blocked ditches, streams and dykes), but could be fixed at far less cost, and replacing it with a 'shiny' new (unproven) scheme at vast expense.
- 1074. She hopes that the parties involved will rethink this proposal and act in the best interests of the environment and the people of the areas affected by the scheme.

## Robert Grant-Downton (OX 010N)

1075. He has used the land subject to the CPO for many, many years. He has used it for walking on a regular basis, for instance from his home to the centre of Oxford and from his home to Kennington, for both work, social purposes and exercise benefits. It has been land that has been very well managed by the existing owners who have maintained key walking routes for local citizens. He should also add that he finds it quite astonishing that the CPO has been made before planning permission has been granted. He feels that this is completely out of order and very wrong.

## Susan Irvine (OX 013N)

- 1076. The ecological damage is immense to a MG4a flood meadow which has existed for a thousand years. Sequestered carbon will be released, very rare plants will be destroyed. 97% of all the UK meadows have been destroyed in the last 100 years and Hinksey Meadow is a particularly rare meadow.
- 1077. She has walked over Hinskey Meadows every day for 20 years, unless it is performing its essential task of holding water during a flood. To lose this place would be detrimental to the people of Oxford.

- 1078. The sum of money that will be spent on the channel part of the scheme does not offer value for money because it alleviates flooding in a fairly small number of houses in Osney Island. Clearing out the ditches and implementing the majority of the scheme would be far more cost effective.
- 1079. Please reject the channel part of this scheme for the good of the very rare MG4a grassland and because it is a beautiful place much loved by local people.

## Susannah Sheffield (OX 014N)

1080. As a local resident she regularly walks on the land under consideration for this scheme (at least 4 times/week) and feels it is a vital space for local wellbeing. Since the pandemic, more of us have got out walking (with or without dogs and/or kids) and have felt the value of the local space and environmental habitats around us. They chose to live here to enjoy the combination of open space, countryside and access to the city. The majority of people in this neighbourhood cross the meadows and pathways to access work, local schools, shops and leisure. The CPO will have immediate impact on their access to these services and encourage more people to get into cars to get around.

## Georgina Howes (OX 015N)

- 1081. She objects to this flood scheme, in particular the channel to be carved out of Hinksey meadows. She is very concerned about:
  - Environmental damage and the loss of rare meadow land that will be caused by the channel built as part of the OFAS;
  - Loss of beautiful land in which the residents of South Oxford walk every day;
  - that building continues on floodplains in spite of the problems it will create; please stop building on floodplains they need to be able to function as floodplains;
  - that the existing "flood alleviation" they have is not maintained leading to flooded roads, and existing streams are not maintained.

## Sanchez Mateos and Dany-Lewandowski (OX 016N)

- 1082. Overall, the project has received 91% of objections.
- 1083. Still at the time of writing, this planning application remains unchanged, since its impact and lack of rationale remain exactly the same.
- 1084. As a result, their objections remain exactly the same.
- 1085. They have been local residents in West Oxford since 2009, and have two children who attend the North Hinksey Primary school.
- 1086. Like a majority of residents, they are proud of this natural treasure that Hinksey Meadow represents. This is a place full of wildlife, which they have been delighted to see their daughters enjoy year after year.

- 1087. They cannot understand the Agency's proposed project to take over the area and modify it completely, while there are other alternatives that would be much less expensive, more efficient and less invasive; and would protect the natural area.
- 1088. They believe that the alternatives have not been compared against the proposed planning application, in terms of:
  - how efficient other options would be to manage floodings,
  - cost effectiveness / return of investment of public money,
  - protection of Land and River species,
  - local residents' satisfaction.

1089. This includes:

- Daily effect on school runs from parents whose children attend North Hinksey Primary School over the coming years,
- Changes on historical landmarks,
- Generally speaking, the "satisfaction" to see one of the last beautiful natural areas in Oxford converted into an artificial human construction.
- 1090. As a pleasure angler who knows the Hinksey Meadow area very, very well (Environment Agency license number 18250623-2WC3FSD-J29LS7 they have been fishing in Oxford since 2000, and know all the local streams in the area the Seacourt, Hinksey, Bulstake, Potts and Botley which all interconnect as tiny running backwaters of the Thames.
- 1091. They currently are one of the very few that still hold species of national interest.
- 1092. These running streams serve as reproduction sites for at least 3 species that are recognised by the Agency as species of special interest that require significant conservation measures.
- 1093. They have highlighted that the project completely contradicts a number of objectives, and studies, established by UK public bodies:
  - the Environment Agency's Conservation Assessment 2018
  - the National Policy "Conserving and enhancing the Natural Environment"
  - the Joint Nature Conservation Committee's Habitat and Species Conservation Status Assessment 2019.

1094. Other National Policies are not met:

- NP 12 'Achieving well-designed places',
- NP 15 'Conserving and enhancing the Natural Environment',
- NP 16. 'Conserving and enhancing the Historic Environment'.

1095. The construction of the so-called flood channel, and the surrounding deep modifications of the floodplain, mean that the scheme would take over the whole area.

1096. Further consultations should be run, and further proposals should be gathered and then objectively analysed and compared to the current planning application.

#### Eleanor Dobson Gomez (OX 018N)

- 1097. She has walked and ran this field every week since she remembers. She is very worried after hearing of these plans to build this canal. It doesn't look like it will benefit many people and the changes and damage to the environment which be severe.
- 1098. Recently with the works on willow walk she has not had access as she has been feeling very down with the restriction. She has few places to run, walk my dogs and contemplate nature. She recently was running in Binsey Lane which has been hurting her knees.
- 1099. This is a wild meadow that brings her and her family so much joy.
- 1100. In the summer you get the odd wild orchid and once she saw a bee orchid 5 years back near the willow walk ditch. Insects include cinnabar moths, orange top butterflies, small blue, soldier beetles, glow worm and crickets/grasshoppers. There are a huge array of wild flowers.
- 1101. She is not happy about this turning into a waste land and the number of trees being cut is really excessive.
- 1102. Please understand this is a green field site that is helping enhance the mental health of many people in the local area.
- 1103. Loosing this plot of land for a project that will not even cause much flood alleviation is a ridiculous waste. Felling 200 mature trees would surely not help with the matter.
- 1104. She really prays and hopes this does not go ahead.

## John Lowe (OX 020N)

1105. The proposed works will be highly destructive and result in significant carbon emissions. Almost as good flood alleviation can be achieved without the destruction caused by the proposed channel, as the Agency's own documentation shows. He and his family regularly use the Meadow and nature reserve for walking and exercise. The meadow in particular is unique, not only in terms of its biodiversity, but also in being a rare open space in the Botley area; the other nearby publicly available spaces are all much more enclosed and very different to walk and exercise in.

## David Brown (OX O21N)

- 1106. He objects to the CPO in reference to the flood channel element of the proposal. The cost/benefit does not weigh up and the overall environmental impact is negative.
- 1107. He currently uses these grounds daily to dog walk and commute into town and work within city centre.

## Axelle Jeangirard (OX 022N)

1108. She lives up the road and uses the meadow every day to walk her dog; so losing its access for 5 years would really reduce the quality of life, and we all know the importance of green spaces for mental health.

- 1109. And on a more practical level she uses the paths every week to go to the centre, so this would make her access to the city centre much reduced and isolate further the North Hinksey village. This is a shame when the government is trying to pursue a 15 min city objective with lower vehicle emissions. If this is to be achieved why do the Agency wish to close cycle and footpaths.
- 1110. Without mentioning all the ecological damage to those green spaces which won't be able to be recovered.
- 1111. So, with this in mind please receive her objections to the CPO on Hinksey meadows and nearby in relation to the OFAS.

## Mrs Jean Dighton (OX 025N)

1112. She would like to point out that sending the water behind her house and under the bridge is a worrying prospect. In the past the water doesn't flow easily under the bridge and overflows and floods her land and house. Works were carried out back in 2013 to address the flooding which involved taking over the garden to our home and digging it all up. This caused great distress to us as we had built a beautiful garden over the 50 years we have lived in the property. My husband found it particularly distressing and during the process died, leaving my family devastated. This whole process is extremely stressful.

## St Ebbe's New Development Residents' Association (Rep/01)

1113. Our members are residents of the houses on the site of the old gas works in St Ebbe's bounded by the Castle Millstream and the Thames (Dale Close, Trinity Street, Sadler Walk and a section of Thames Street). We understand that you are looking for comments before the November public inquiry into the OFAS. As we understand it the benefits of this scheme are marginal for us with a very small reduction in the risk for our area. Clearly if there are substantial benefits elsewhere we would not wish to oppose the Scheme but we would like reassurance that we will suffer no disadvantages from the project and that, in particular, our area will be at no greater risk of flooding.

#### INSPECTOR'S CONCLUSIONS

Figures in [] indicate relevant paragraph numbers in the text.

- 1114. Guidance on Compulsory purchase process and The Crichel Down Rules (2019) confirms that a compulsory purchase order should only be made where there is:
  - A compelling case for acquisition in the public interest, and
  - evidence that the acquiring authority has a clear idea of how the land is to be used, and
  - evidence that the acquiring authority can show that all necessary resources to carry out its plans are likely to be available in a reasonable time scale, and
  - evidence that the scheme is unlikely to be blocked by any impediment to implementation, and
  - evidence that this justifies interfering with the human rights of those with an interest in the land.
- 1115. These, and other relevant considerations identified, are assessed in turn below as they relate to the Order and to outstanding matters raised by objectors, and by supporters. I then turn to whether the scheme should be modified and the Human Rights / Public Sector Equality Duty implications of the scheme.

## A compelling case for acquisition in the public interest

- 1116. Oxford sits at the confluence of seven rivers, draining a catchment area of approximately 3,000km<sup>2</sup>, with its source in the Cotswold Hills. Within this Oxford also has an extensive network of braided watercourses that leave and re-join the River Thames. [63, 69]
- 1117. The floodplain narrows significantly immediately downstream of Oxford to only 300 metres wide which constrains flow and effectively restricts water flow within Oxford during times of high flows. As I was informed at the Inquiry, the Thames is generally slow to respond and flood events are long in duration due to this large catchment area. The hydraulic gradient through the system is also shallow, which slows the passage of water as it drains to Sandford Lock.
- 1118. This flooding within Oxford has been exacerbated by historic development within the floodplain, which includes road and railway embankments that further restrict flow. All these constraints give rise to flood water flowing out of the river channels and causing damage to property, businesses and infrastructure during periods of high flow. [64]
- 1119. It is common ground that Oxford has experienced flooding a number of times in the last 20 years. Of these the events, those in 2000, 2003, 2007, 2009, 2011, 2012 and 2013/14 resulted in the internal flooding of a number of properties. [65]
- 1120. Evidence presented in the economic analysis of the whole life benefits of the CPO scheme shows that the CPO scheme will prevent just over £1,574 million of economic damages from flooding over the next 100 years. [108]
- 1121. The damaging flooding of 2007 throughout the UK, but particularly Oxford, led to the formation of the Oxford Area Flood Partnership, which was formed of the Agency, OxCoCo, OxCiCo, VoWHDC, Thames Water and Network Rail. The Partnership provided the beginning of a co-ordinated approach to flood risk management across Oxford. [116, 262]

- 1122. In September 2010 the Oxford Flood Risk Management Strategy ("OFRMS") was approved which reviewed a long list of over 100 options or combinations of options [80, 611, 682]. The OFRMS recommended a 3-phase approach to reducing flood risk in Oxford:
  - Phase one has already been completed which consisted of an investment of £2.5 million to increase the capacity of local river channels and structures which included the Willow Walk Culverts and Network Rail Culverts immediately upstream of Old Abingdon Road and to provide temporary defences at Osney Island, Lake Street and South Hinksey.
  - Phase two of the OFRMS involves increasing the capacity of the river and floodplain system in the wider western floodplain and forms the basis of the CPO submission.
  - Phase three of OFRMS is upstream flood storage, taking into account the need to improve further the effectiveness over time of the river channel improvements proposed as phase two of OFRMS and to address the predicted effects of climate change.
- 1123. As established at the Inquiry and with no evidence to the contrary, if nothing was done to manage flood risk in the city, approximately 2,000 medium risk properties those which have a 1% chance or greater of being flooded in any one year within Oxford would be at risk. As well as disruption to the road and rail network, utilities and the local economy. The key areas of the City of Oxford affected are New Botley, Osney, New Osney, Grandpont, North Hinksey and New Hinksey. There is also flood risk associated with outlying areas such as Wolvercote, South Hinksey and Kennington.
- 1124. Through the implementation of Phase one of the overall scheme, the Agency has been able to reduce this number, from 2,000 to around 1,600 properties that remain at medium risk along with infrastructure. Nevertheless, the predicted impacts of climate change would result in an even greater number of properties at risk (considered to be nearly 2,700 by the year 2080) and the associated reductions in economic growth.
- 1125. The overall aim of the CPO scheme is to reduce the flood risk to homes, businesses and infrastructure to the west and south of the city of Oxford, Oxfordshire. The objectives as set out in the Strategic Outline Case (CD2.1) are as follows [106, 107]:
  - Reduce flood damages to at least 1,000 homes and businesses currently at risk in Oxford;
  - Reduce flood risk to infrastructure and utilities in Oxford;
  - Safeguard Oxford's reputation as a thriving centre of commerce that is open for business; and
  - Create and maintain new recreational amenities, wildlife habitat and naturalised watercourses accessible from the centre of Oxford.
- 1126. The three-phase approach to managing flood risk is underpinned by a number of policy documents including the: Thames Catchment Flood Management Plan (TCFMP) published in 2009; The Oxford Flood Risk Management Strategy, published in 2010; The National Flood and Coastal Erosion Risk Management Strategy (FCERM) published in 2011; and the Oxfordshire Local Flood Risk Management Strategy.

1127. In terms of land use planning the Oxford Local Plan (2016-2023) specifically mentions the OFAS at paragraph 4.18 "*The Oxford Flood Alleviation Scheme, a partnership project, will help to convey water away from development infrastructure and will help greatly in reducing flooding in the most at risk areas. It will bring considerable benefits to the city in terms of reduced risk of flooding to homes, businesses, major roads and the railway.*" The Vale of White Horse Local Plan 2031 Part 1 and Part 2 do not specifically mention the OFAS.

## Optioneering

- 1128. A golden thread running through the decision-making process for the scheme is the HM Treasury's 'Green Book'. It was agreed at the Inquiry that this is the correct approach, given the requirement for public funding. This promotes a two-stage appraisal, the first stage of which is the consideration of a longlist of option choices and the selection of a rational and viable set of options for shortlist analysis. The shortlist analysis is completed using social cost benefit analysis (CBA) or social cost effectiveness analysis, which is then discounted in order for a Net Present Value (NPV) to be calculated. If the NPV of a project is positive, it means that the rate of return will be above the discount rate, and the project is worth undertaking. [75, 80]
- 1129. As set out above, proposals to alleviate flooding in Oxford have been considered for some time by the Agency. As I heard at the Inquiry, at strategy stage, a long list of over 100 options or combination of options were assessed. In summary these options were built around 4 main engineering interventions: increase flow capacity, defence, transfer, or storage. This work identified 'increasing flow capacity' as the best appropriate intervention due to its effectiveness in reducing flood risk and its compliance with all other criteria. The alternatives were dismissed because they: did not deliver the project objectives; were not suitable as an overall solution; problems were foreseen with planning approval; or they would cause flooding elsewhere in the catchment. [126]
- 1130. Standalone raised defences were discounted on technical grounds, particularly because some areas within Oxford were unable to physically install such defences or the defences would cause water to flood other parts of the city. Water transfer, such as a piped solution, was discounted due to the high cost and infrastructure required. Furthermore, this approach would be counter to the Agency's clear policy approach to passive solutions. Standalone upstream storage showed that the volume required to reduce flood risk in Oxford was substantial (estimated in the order of 50M/m<sup>3</sup>) and this would need to be stored in the existing floodplain. No locations close to the area north of Oxford were identified that could physically store this volume of water and it was concluded that upstream storage as a standalone option to specifically solve flooding in Oxford was also not technically feasible.
- 1131. At Strategic Outline Case (Short listing) 14 further options were further developed which focused on increasing flow capacity, and from those options a new flood channel (small, medium and large) and interim measures, alongside a 'do nothing' and 'do minimum', were taken forward for sensitivity testing. The Agency's consideration of a channel option was based on certainty, reliability, and further impediments, and that the channel would provide resilience against future changes and unforeseen events. The options were also compared using the CBA economic appraisal process. From the evidence presented I am satisfied that the cost benefit analysis comparing the options was rigorously undertaken.
- 1132. The large channel was discounted due to engineering constraints and cost. The smaller channel would not provide sufficient capacity. The medium channel was considered with a second section of conveyance, but this was considered unnecessary

if raised defences were also employed together with the medium channel. Therefore, Option 6b was the option taken forward. Option 6b (medium channel plus defences) also achieved the highest net present value ("NPV") of all 14 options.

- 1133. I note that the appraisal process required the assumed solution to be tested at each stage of its development to ensure that it remained the preferred solution. At each stage interim solutions were re-introduced as a sense check to ensure that the Agency did not jump to a major intervention if further measures, at minimal cost, could be implemented.
- 1134. A further technical assessment of the Oxford area was undertaken to inform the route and alignment of the proposed channel. This considered: topography, services locations, detailed fluvial modelling of watercourses and environmental constraints and opportunities. Following public consultation in June 2015 the broad route of the new channel was divided into areas, numbered 1 to 7, and alternatives were identified in each area. Following the design refinement process, this was reduced to four areas.
- 1135. After further appraisal and refinement following feedback from consultation, the Agency selected the most appropriate route to minimise environmental harm, which meets environmental objectives and reflects the views of the public and statutory consultees, where possible, while not being economically prohibitive.
- 1136. A number of criticisms have been made at the approach used by the Agency to identify the long and short lists. These include that the long list should be used to encourage broad thinking and develop ideas rather than the fixed protection for a 1 in 100-year event. Furthermore, when developing the short list reasons such as high cost, engineering challenges or general acceptance of a given measure may not be enough to reject an option at this stage. As such objectors point to an excessively restrictive view to compiling options. [439-446, 497-504]
- 1137. Turning first to the probability of flood events. A particularly vulnerable area, such as Oxford, with a high density of population and a high economic value at risk of flooding, means a high level of protection should be afforded, therefore I agree with the Agency that protection against the 1 in 100 year flood event is the most appropriate. [95]
- 1138. In response to the criticisms regarding optioneering, the Agency suggests that the 'Green Book' sets out that 'proportionately' should be considered to ensure that the appropriate level of resources is invested in gathering and analysing options. Moreover, that the analysis should be proportionate to the problem it is addressing. [81, 127]
- 1139. I agree that a proportionate approach is correct, particularly where there is a high public need for flood prevention and limited public resources available. I consider that the Agency appropriately considered matters such as changes to regulation, degrees of uncertainty, risk of not meeting policy objectives and assumptions made about future climate change when preparing its options to take forward.
- 1140. Objectors state that, in summary, the optioneering has taken an unduly restrictive approach because alternatives have been rejected without having full regard to the wider public interest and the economic dis-benefits of the selected option. [614-655]
- 1141. The Agency accepts that there are disbenefits resulting from the OFAS, but these have been considered as 'project risks'. These dis-benefits are mapped on the Benefit Dependency Map (Inquiry Document EA/3c.1) and appropriate mitigation measures would be put in place to manage these risks (Inquiry Document EA/3c.2 Appendix 2). Consideration of environmental disbenefits were considered using 'Multi criteria

Analysis' (CD3.33), which was a two-phase options appraisal process for determining an optimised preferred option for the Western Conveyance Channel.

- 1142. I accept that there would be an economic cost associated with traffic delays. However, these would solely arise from construction activities. To my mind similar costs would be involved in any significant flood alleviation scheme. Furthermore, the funding guidance sets out that economic benefits/disbenefits are based on UK plc and not local values. Overall, the formation of the scheme cost and the alternatives is in line with the requirement of the FCERM-AG methods and has been verified by an independent cost consultant.
- 1143. It is not the case that the Agency must consider every option available. It is reasonable that the option choices used for consideration are based on outcomes, deliverability, access to public funding and how these fit with other policies. Further discussion is set out below in terms of the consideration of alternatives suggested by objectors.
- 1144. Whilst I appreciate the frustrations expressed at this by some objectors, I find nothing in the evidence before me to suggest that the Agency's long and short list optioneering was not appropriately conducted and based on relevant Government and Agency policy. Additionally, given my findings below in relation to the veracity of the modelling on which the short list assessment was based, I have no reason to believe that the conclusions reached were based in error.

## Whether the impacts of the proposal have been assessed using adequate modelling

- 1145. Flood modelling is a powerful tool used to plan and prepare for various weatherrelated events. It allows users to predict and simulate where water might flow in a particular area. Flood modelling uses data such as predicted river flows, tidal shifts and rainfall, combined with topographic data like control points and elevation values, to generate flood risk information, such as depth, velocity and hazards. However, it was acknowledged at the Inquiry that flood models use simplifications and assumptions to represent complex natural systems, and this leads to inherent uncertainty, which must be acknowledged when making decisions based on model results.
- 1146. The flood modelling used for the development of the OFAS included both a fluvial model and a groundwater model. For the fluvial modelling 'Flood Modeller 1D' and 'TUFLOW (2D)' was utilised. The groundwater model was built using the United States Geological Survey open-source code MODFLOW. It is common ground that no objections were made to the type of models chosen or their suitability for optioneering, development and design of the scheme. [86]
- 1147. The fluvial model was used to simulate river flows and overland flood mechanisms and covered approximately 19km of the River Thames. Whereas the groundwater model was used to calculate the impacts of OFAS on the groundwater regime. The groundwater model covered a similar area to the fluvial model so that environmentally sensitive sites were within the model area. [87-88]
- 1148. The process of adjusting model parameters to make a model fit with measured conditions (e.g. measured flows) is calibration. This process should be followed by validation using a different set of data to that used in the calibration. A model is said to be validated if its accuracy and predictive capability in the validation period has been proven to be within acceptable limits or errors.
- 1149. The methodology used in the modelling has been calibrated using data from historic flood events and where necessary, the subsequent adjustment of model coefficients.

For the calibration of the model the July 2007 flood event was selected due to the extent of information available. The calibrated model was verified using the winter 2013/14 flood event and a further validation was undertaken using data from the 2003 flood event. The calibration was also reviewed by specialist experienced modellers at an independent consultancy company and the Agency's in-house modelling team. [91-92]

- 1150. The accuracy of the groundwater model was also calibrated to actual recorded groundwater levels observed at 20 locations during the July 2007 groundwater flooding event. Additional observed data from existing boreholes across the area was used to help improve the calibration of the model. [93]
- 1151. The modelling yields an estimated flood return period for each catchment, which respond at different rates to each other in a flood event. The variability of sub-catchment areas has been assessed and exposed to extensive sensitivity testing, which provides increased confidence in the flood frequency analysis.
- 1152. Nevertheless, many objectors considered that the baseline data used for the models was inadequate and the calibration was beset by problems. A wide range of data is used in flood models and the data requirements depend on the project objective including any requirements for quality, the level of detail and adopted modelling approach. Whilst I have some sympathy with the concerns raised about the use of a regional model when analysing the impact on small parcels of land like Hinksey Meadow, the models have been used to find where impacts would be likely, and the Agency have addressed these matters. A more discrete data set may provide greater detail but would not change the way in which the Agency are dealing with these concerns and the impact on sensitive habitats. Therefore, I accept the Agency's argument that a proportionate approach for the collection and use of data is required, which has been guided by the OFAS objectives, time and budget.
- 1153. In terms of calibration, the flood models covered a large study area which meant that an extensive dataset was available given the long history of monitoring flows and levels of the River Thames. To improve the confidence in the modelling output, sensitivity testing was conducted, and new data was collected where significant gaps were identified, such as creating new boreholes. Moreover, the Agency used real flood event data to provide a benchmark. [92-93]
- 1154. The Agency was able to adjust the model parameters until the resulting predictions gave the best possible fit to the 'benchmarks'. Whilst objectors commented that parameters such as surface roughness was not applied to similar habitats across the models, the calibration process has provided a demonstration of the quality of the models' predictions. The OFAS models provided strong confidence, with discrepancies of less than 0.1 metre recorded at the majority of locations across all calibration events. A number of peer reviews were undertaken of both the models which established that the models followed approved approaches and was of high quality.
- 1155. Criticisms were made that the interaction between both models is controlled by user input and does not represent the true inaction between groundwater and surface water. Furthermore, it was questioned as to why the models do not allow for a feedback loop.
- 1156. At the Inquiry the Agency explained that the relative changes in groundwater level, as shown by the modelling, support the findings made that OFAS would reduce groundwater flood risk, and that for this purpose the type of model used, and its calibration are acceptable.

- 1157. I also note that observations from flow gauges on the Thames, Evenlode, Cherwell and Ray of the Q95 flow, that is the flow rate that is exceeded 95% of the time, have been used and these were subsequently simulated using the hydraulic model to produce predicted water levels that have then been applied in the groundwater model as fixed river cells. These flows should be considered as conservative and therefore, I accept, would be a suitable datapoint for considering the impact of the scheme.
- 1158. The Agency have used current data to future proof OFAS against the predicted impacts of climate change and have used the 1% AEP (+11% climate change event) to ensure that more properties are protected in extreme weather events. This is a robust approach and in accordance with Government guidance.
- 1159. To conclude on this matter, I am not persuaded that the technical data put forward is sufficient to substantiate the view that the models used by the Agency are significantly flawed. From the evidence before me the models provide a thorough analysis of the effects of the scheme.

## Whether there are other means of achieving the purpose - Alternatives

- 1160. The Secretary of State must assess whether the CPO's purpose could be achieved by alternative means, including alternative development proposals made by affected persons. If alternatives have been advanced by the parties, then adequate consideration must be given to those alternatives before a CPO is confirmed. However, an alternative proposal does not of itself prevent there being a compelling case in the public interest. [122]
- 1161. OFAS reflects a long-standing commitment by the Agency and its funding partners to flood alleviation in Oxford and its environs. The Order Land has been subject to various other proposals and suggested developments, namely the ideas put forward in the representations. No previous comprehensive proposal has ever come to fruition and no other proposal was before the Inquiry ready for implementation. [116-117]
- 1162. Extensive dialogue has taken place between the Agency and the local community over many years and has received support from Oxford Flood Alliance and many others. At the Inquiry the Supporters stated that OFAS is the solution that will properly reduce the threat of flooding as well as easing the communities underlying anxiety every time there is heavy rain.
- 1163. Moreover, supporters alluded to climate change projections over the next 50 years and that more properties will suffer more frequent damages. Climate change has been taken into account by the Agency and is reflected in the modelling for the scheme. The Agency state that many of the alternatives fail to adequately address these changes.
- 1164. Nevertheless, the objectors have suggested a number of alternatives which are set out below. [432-438, 496, 699, 702]

## Dredging and Natural Flood Management (NFM)

- 1165. At the Inquiry a number of objectors made reference to the lack of dredging in the Oxford watercourses. It was stated that removing the accumulation of silt material and debris would increase capacity and reduce the extent of flooding. This would in turn negate the need for a 'channel' solution. Furthermore, NFM techniques could be used to help retain or slow it down.
- 1166. The Agency accepted that when used with other flood risk management measures as part of a catchment-based approach dredging and desilting can be effective and

justified. However, given the complex arrangement of the watercourses in Oxford, natural processes mean that silt will return and accumulate in the same places very quickly, sometimes only weeks after dredging and desilting is carried out, therefore any increase in river capacity would be short-lived.

- 1167. Moreover, given the built environment located close to the watercourses, accessibility would be difficult in some locations. I also acknowledge that this type of maintenance would have to be undertaken regularly, with its associated costs both economic and environmentally.
- 1168. Dredging can also increase the velocity and volume of water within a river system, which would allow flood water to move more quickly downstream causing flooding elsewhere in the system.
- 1169. NFM are measures that are used extensively across the UK, particularly in steep upland catchments. However, given the relatively flay nature of the Oxford floodplain water can stay within it for days or weeks. Accordingly, a standalone NFM would need to store an additional 50M/m<sup>3</sup> of water in the existing floodplain of the River Thames to bring the same benefits as the CPO Scheme. The Agency has undertaken extensive mapping exercises to ascertain whether such capacity exists and concluded that any such storage would be some distance from Oxford and as such would have limited benefits.
- 1170. As such dredging and NFM alone would fail to meet the OFAS' objectives of 'sustainable solutions to reduce flood risk to people and property' and 'improve the human and natural environment for the quality of life of people and benefit of wildlife'.

## <u>No Channel</u>

- 1171. The 'no channel' option was presented as an alternative primarily to avoid the construction of a channel through Hinksey Meadow [505-536]. It would involve removing the majority of the proposed western conveyance channel whilst retaining the other main elements of the design such as all the key structures and defences. The Agency had tested this alternative using the Flood Models, which included two options:
  - North Hinksey Meadow channel section removed: represents the detailed design option with only the removal of the proposed second stage channel between the National Grid Pylon 200m downstream of Botley Road and Willow Walk.
  - No Channel: represents removal of the proposed channel between Seacourt Stream to Old Abingdon Road. The proposed works on Seacourt Stream down to the National Grid Pylon 200m downstream of Botley Road and south of Old Abingdon Road are retained.
- 1172. The results from the flood modelling were set out in '*Appendix Q Western Conveyance Channel Review*' (CD3.29). In summary the two options would increase the predicted flood levels to a varying degree over that of the CPO scheme and would not be of the same or greater benefit in terms of protection to property or iBCR.
- 1173. The concerns relating to this alterative were set out by the Agency in their evidence, particularly that of Mr Harding at EA/1a section 15.4(c), summarised as: certainty of flow; reliability; liability; minimising land take; impact on planning application; impact on landscape, biodiversity and land management; timescales; and the best opportunity to reduce flood risk, alongside additional benefits. [139-148]

- 1174. Appendix Q was the subject of much debate during the Inquiry, with criticisms made of its approach to testing alternatives and the conclusions reached. These criticisms lead to a further alternative of 'no channel plus raised defences' which is set out below.
- 1175. Whilst I do not doubt the merits of trying to find an alternative solution that may avoid any works on Hinksey Meadow, the removal of the channel would reduce capacity and therefore the resilience of the OFAS going forward to deal effectively with the predicted climate change impacts. Moreover, I am concerned that the 'no channel' option would remove the certainty or predictability of where the flood water will flow. I was told at the Inquiry that, without increasing capacity of the western floodplain, the additional water (39m<sup>3</sup> /s at the 1% AEP enough to fill an Olympic sized swimming pool every minute) simply redistributes. This flood water could therefore cause problems elsewhere.
- 1176. OPT comment that the depth of the water across the floodplain would not cause significant risk, however, there is no comment on where this water is likely to flow given the complexity of the Oxford river network. Furthermore, without the channel the scheme would be unlikely to deliver the additional benefits of control over sewer flooding or provide public confidence that their homes would not be flooded.
- 1177. I accept that a no channel option may well reduce the need for the same degree of expropriation, nevertheless, there would be wider impacts on land management and biodiversity as the Agency sought to reduce any potential restrictions within the floodplain e.g., removal of hedges, trees and fencing as well as changes in agricultural practices.
- 1178. Overall, the no channel option would not be a suitable alternative (albeit partial alternative) to merit further investigation, given that it would not deliver the CPO objectives and would fail to integrate with the overall CPO scheme.

## No channel plus raised defences

- 1179. This alternative is similar to the above 'no channel' but includes potential modifications, including raised defences above the design level of the CPO scheme. OPT point out that there has been little consideration given to the potential modifications that could be made to the 'no channel' option to minimise the differences between the 'channel' and 'no channel' approach. They consider that if these are included, and modelled this would likely improve 'certainty' and reduce the Agency's concerns. Additionally, objectors' comment that this approach would cost less than the CPO scheme and would still have an iBCR value of greater than 1.0. Therefore, objectors state, that additional works should be included to prevent any additional inundation damages resulting from any increase to flood depths. [448-484, 621-635, 708]
- 1180. The Agency gave this alternative some consideration but discounted it due to its lack of resilience against climate change and that in a number of locations it would be difficult to raise the flood defence levels sufficiently. In the remaining locations proposed, raising the design defence height could be achieved but at the cost of reducing the freeboard height that can be provided, which in all locations is less than would ideally be afforded. I note that the freeboard is used to compensate for any uncertainties in estimating flood hazard. [149-163]
- 1181. I acknowledge the concerns raised by objectors in terms of testing 'like for like' scenarios and that the Agency used different extents of roughness when testing this alternative. Nonetheless, at the Inquiry the parties agreed that the difference this would make to the model results was stated to be minimal.

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- 1182. As I stated for the 'no channel' option, the raised defences plus 'no channel' may well reduce the need for the same degree of expropriation. However, I am concerned that this alternative will not provide the long-term flood protection that the CPO offers, deliver the same level of flood protection to properties, and would cause uncertainty to flood extents upstream and downstream of the scheme.
- 1183. For example, the reduction in freeboard from the implementation of this alternative would be compounded by the effect of climate change. Thus, as the climate changes and peak flood flows increase, as predicted, there will be a higher probability that the defences will be overtopped. Therefore, the overall benefit provided by the defences would be reduced and value of the scheme economically reduced. Moreover, any further increases in defence heights/widths/lengths may be unsuitable from a planning perspective due to impacts on living conditions or on the landscape and cause further delays to the scheme. Indeed, a closing comment by Mr John Young on page 15 of Appendix 1 to Mr Carpenter's Proof of Evidence (OX 027S 4C), where it is stated "from a hydraulic perspective the current OFAS scheme design option provides more 'flood betterment' than the other options explored".
- 1184. Moreover, the costs associated with raising the defences is likely to increase the iBCR related to this option, thus in turn making the CPO scheme more advantageous.
- 1185. Accordingly, this option would not be a suitable alternative (albeit partial alternative) to merit further investigation, given that it would not deliver the CPO objectives to a similar degree and would have significant level of uncertainty in delivery, and lack of adequate ability to deliver or integrate with the CPO scheme.

## <u>A3</u>

- 1186. Alternative A3 is a variation of the "no channel" model. It suggests a single culvert option to replace the new bridges at Old Abingdon Road and Kennington Road as a solution to prevent water backing up in a flood event at Old Abingdon Road. [712-716]
- 1187. However, as the Agency points out, and I agree, raising the bridge soffit higher would not increase the flow capacity, as flood levels are dictated by downstream conditions. I note that the Agency did consider the option of a single culvert at this location, but it was discounted because it would not comply with current highway standards, would make it difficult to deal with utilities located within the bridge structure and would not be able to maintain traffic flows to the satisfaction of National Highways.
- 1188. Consequently, I am not convinced that this alternative would be a workable or deliverable solution. It would delay the CPO scheme as a whole and would cause uncertainty to local residents and businesses.

## Twin Pipe Pumped Solution

- 1189. This alternative proposes installing two underground parallel pipes, which would run from a new pumping station north of Botley Road to a discharge point near the A423 Oxford Southern Bypass. Drawings supporting this alternative were presented in evidence by Messrs Madden and Larkin (Inquiry documents: OX 024N/1a; OX 024N/1b; and OX 024N/1c). [130-134, 723-728]
- 1190. The Agency accepts that this alternative might work hydrologically and that it should be capable of moving a sufficient flow of water from the Seacourt Stream. Nevertheless, the Agency's Operational Instruction OI 1418-12 sets out that "*Passive design is one of the principles underpinning the Asset Management Strategy. It is the principle of reducing flood risk by minimising the number of assets that need to be*

*actively operated.*" The pumped solution would require an 'active' approach to flood prevention such as operational staff available to 'start up' the system when floods are predicted, regular and ongoing maintenance of the mechanical and electronic systems, increased health and safety requirements to check the pipes for blockages and debris.

- 1191. Whilst being contrary to the Agency's policy, I have further concerns relating to the piped solution and whether it would meet the CPO objectives. There is a lack of information regarding the management of the flood water after it leaves the pipes. The velocity of flow could cause increased flood risk downstream and cause damage to riverbanks from scouring.
- 1192. The piped solution would also cause delays to the scheme from having to apply again for planning permission. There are also risks to whether planning permission would be forthcoming due to the need to have structures, like the pumping station building, in the Green Belt and whether this would be 'inappropriate development'.
- 1193. The objectors maintain that the cost of construction would be a lot less than the CPO scheme being some £23.26 million, although this is contested by the Agency who consider a figure of £86-106 million is more realistic. Both parties state that the costings have been provided using industry standards. To be certain of the costs more detail would need to be provided and given the uncertainties I have already set out this would not be proportionate.
- 1194. Finally, the objectors point out that the piped solution would avoid the need for much of the land to be compulsory purchased as the works would be underground and passive treatment systems may require much more space than active treatment systems to build. Nonetheless, as I heard at the Inquiry the excavation required to deliver the pumped solution would only be slightly narrower than that required for OFAS and the Agency would still need to acquire some rights to include on-going access to the land for maintenance.
- 1195. As a consequence, this alternative is not as attractive as the CPO scheme because of the uncertainty, risk and delay, it would fail to meet the Agency's operational instructions and would still require similar land expropriation.

#### Use of Railway Embankment

- 1196. This alternative provides for the construction of a new viaduct that would address head loss across the railway embankment between Redbridge and Mundays Bridge.
- 1197. There is relatively little detail on how the proposal would operate and given that the viaduct would be constructed over the railway infrastructure this would undoubtably cause technical delays to the scheme and to the railway system.
- 1198. As a result, this alternative is not as attractive as the CPO scheme because of the uncertainty, risk and delay involved and would still require similar expropriation.

## New Channel East of Hinksey Stream

- 1199. This alternative promotes a new alternative channel alignment could be built to the east side of Hinksey Stream. There is relatively little detail before me on how the channel would be constructed given its location below overhead cables and over buried electric cables.
- 1200. As a result, this alternative is not as attractive as the CPO scheme because of the uncertainty, risk and delay involved and would still require similar expropriation.

Raised Defences: Eastwyke Farm; New Barclay House; Boundary House; and Abingdon Road

- 1201. These alternatives either suggest that the defences are not required at certain locations or that the defences should be moved elsewhere. I do not have substantive evidence before me to reach any specific conclusions on these alternatives. Furthermore, I am concerned that removing and/or relocating the defences, that have been tested through the flood modelling process, would reduce the effectiveness of the overall CPO scheme.
- 1202. Moreover, the defences chosen for OFAS have been designed with landscape and amenity in mind and therefore, their acceptability in terms of planning policy. A material change to the planning application would likely require a revised planning application submission which would cause delays to the implementation of the scheme.
- 1203. As such, these alternatives are not preferable to the CPO scheme and would not reduce the impacts of land expropriation.

## Conclusions on Alternatives

1204. I am not convinced that the submissions on alternatives made by the objectors would be workable, practicable or deliverable in terms of the scheme objectives set out. For these reasons I conclude that the Alternatives do not provide the advantages that would merit their further investigation. The Alternatives do not detract from the strength of the public interest case for the OFAS.

## Evidence that the acquiring authority has a clear idea of how the land is to be used

1205. There are clear descriptions of why the Order lands are required and how they will be used. The Agency has shown to my satisfaction that the land which would be included in the Order and, following CPO modifications, would include all the land required for the purpose of implementing the scheme, and would not include any land which is not necessary. [245-251]

# *Evidence that the acquiring authority can show that all necessary resources to carry out its plans are likely to be available in a reasonable timescale*

- 1206. There are two different types of cost provided for OFAS. The first is the economic cost of the scheme, or "Present Value", and the second is the expected true "cash cost" of the scheme and is used to demonstrate affordability. The Present Value cost is £144.6 million and the 'cash cost' is £176.08 million, which includes £6.12 million as a commuted sum for maintenance of the scheme for the first ten years of operation. [229]
- 1207. As I was informed at the Inquiry the scheme is eligible for 82% partnership funding (£134.88 million), which is topped up by £41.2 million by way of third-party funding which has been secured from the Thames Regional Flood and Coastal Committee, OxCoCo, OxCiCo, VoWHDC, Thames Water, National Highways, Department for Education, University of Oxford and Denton Holdings. This money has either been received and is being held in a dedicated account or is contractually secured. [230]
- 1208. There was no substantive evidence before the Inquiry to suggest the CPO Scheme would not be financially viable, nor any doubt regarding the funding timescale. Whilst concern was raised that the scheme does not offer value for money or that alternatives would be less expensive on the public purse, the OFAS has been through the

Government Treasury process and external assurance. The BCR is robust and concludes that for every £1 spent over £10 of costs are later avoided. [617-620]

- 1209. The Agency suggest that subject to the relevant permissions being in place construction operations can commence in 2024 and will take approximately 5 years. Given that the funding is secured I do not consider that the scheme would be delayed due to a funding shortfall.
- 1210. Therefore, I am satisfied that the proposal is consistent with the expectations of the CPO Guidance regarding information relating to the sources and timing of funding. The evidence is that the Agency and its partners are committed to OFAS, which is of high priority.

## Whether there has been appropriate engagement with affected communities.

- 1211. The objectors stated that the consultation undertaken for the CPO process was inadequate. In particular, engagement with local community groups, advertisement of the Order and timescales for submission. [537-539]
- 1212. The Agency undertook the statutory consultation required by the relevant legislation. This was confirmed on the first day of the Inquiry (INQ/5). The Agency also undertook extensive consultation with landowners and with the public over many years, including public consultation events in 2015, 2016, 2017, which were both in person and virtual events. Further virtual events were held in 2021 when the COVID-19 restrictions were in place. The consultation provided the opportunity for engagement relating to the approach to flood alleviation, design of the scheme, preferred route and changes sought by landowners. [82-85]
- 1213. A number of local residents and community groups responded with representations to object to the scheme, which has been construed by some respondents as a misrepresentation of wider views in relation to the OFAS. Nevertheless, through the Inquiry procedure, I have been able to hear the views of both supporters and objectors to the scheme.
- 1214. I have no evidence that there were any failures by the Agency to provide full details of the CPO to affected parties. Indeed, the evidence presented by Michael Thorne sets out the extensive consultation undertaken, and the responses received (EA/2a EA/2e). Throughout the CPO process the Agency has demonstrated a willingness to listen and to be open to alternatives.

## The Impacts of the Scheme

1215. In addressing the impacts of the OFAS, it should be acknowledged that planning permission is not a pre-requisite for the determination of a CPO. The analysis of any impacts is therefore to determine whether there are any insurmountable problems that may, for example, lead to planning permission being refused.

#### **Biodiversity**

- 1216. The relevant Development Plan Policies are set out in paragraphs 38-45 above. These broadly follow the policies set out in the Framework. In summary, chapter 15 of the Framework sets out that planning policies and decisions should contribute to and enhance the natural and local environment. In particular it confirms the principle of the provision of net gains for biodiversity.
- 1217. Furthermore, the Framework states at paragraph 186 that "*When determining planning applications, local planning authorities should apply the following principles:*

- a. if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b. development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c. 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; and
- d. development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."
- 1218. The Agency freely states that the construction of the two-stage channel would necessitate unavoidable impacts on habitats which require full justification. Consultation with NE has ensured that the OFAS avoids any significant impact on nationally and internationally designated sites protected sites. Therefore, at the Inquiry the focus of the discussion in relation to biodiversity related primarily to the impact on Hinksey Meadow, a non-statutory designated Local Wildlife Site (LWS). Whilst comment was made that Hinksey Meadow had a similar habitat profile to nearby SSSI and should be designated as such, it is evident that it hasn't been designated despite NE *et al* being in receipt of survey information.
- 1219. Hinksey Meadow includes approximately 8.82ha of species-rich burnet floodplain meadow, classified as MG4a by the National Vegetation Classification ("NVC") system. The MG4a is the most species-rich of the four MG4 sub-communities and is generally found where the water table remains low throughout the growing season and flooding is rare. The Agency's ES identified Hinksey Meadow as having high (national) ecological value and is an irreplaceable habitat. Accordingly, to justify any such loss or damage, any proposals must demonstrate over-riding public interest, there should be no satisfactory alternative, and there should be full and proper mitigation/compensation. [175-185, 359-370]
- 1220. The Hinksey Meadow is a valued resource to the local community [540]. Many residents informed me of their continued voluntary work to protect the meadow and encourage the fauna and flora. Many residents undertook surveys of the flora, including seasonal counts of the 'Snakeshead Fritillary' and others had studied the butterfly populations [549]. Many reported also giving up their time for litter picking and maintaining paths and watercourses. In this context objectors raised concern that the Agency did not recognise the importance of Hinksey Meadow as a nationally important resource. I have no evidence to support this opinion. The ES sets out that Osney Mead (which includes Hinksey meadow) is of national value and is designated as a Local Wildlife Site.

- 1221. At the commencement of the Inquiry there was a clear difference between the parties on whether the botanical surveys completed for Hinksey Meadow were complete [691-694]. This issue being complicated by the fact that there was some uncertainty about the further survey work requested by OxCoCo to support the planning application. OxCoCo considered that the surveys were an underrepresentation of Hinksey Meadows biodiversity value. The Agency re-surveyed the relevant field parcels in 2022. Whilst objectors considered that other field parcels also needed re-surveying, this was not requested by either the planning authority or NE.
- 1222. The OPT were very concerned that the proposed translocation of the turf from Hinksey Meadow to a suitable receptor site would not succeed and would not be a suitable form of mitigation/compensation. Furthermore, they challenged the process that the Agency undertook to avoid harm to biodiversity, through the mitigation hierarchy, namely, avoidance, mitigation and as last resort compensation. [405-429]
- 1223. The Agency submitted an ES to support the planning application process (CD3.8). The ES included an Ecological Impact Assessment (EcIA) which establishes that after assessing the impacts of the proposal, all attempts should be made to avoid or mitigate ecological impacts. Only after these measures are applied would the Agency then consider compensatory measures.
- 1224. The ES also identifies specific mitigation measures, including those for Hinksey Meadow, namely:
  - Minimise the area of MG4 grassland to be impacted though scheme design. The channel would be constructed on areas of lower habitat value where possible (Avoidance).
  - Managing water levels in local streams to maintain appropriate ground water levels (Mitigation).
  - The 1.33ha of MG4a Hinksey Meadow turf would either be: translocated to become part of the MG4 meadow which is being created near North and South Hinksey if approved by the Hinksey Meadow landowners; used in the second stage channel at Hinksey Meadow; or used by the Hinksey Meadow landowners on another habitat creation scheme.
  - Approximately 17.8ha of MG4 meadow would be created at fields in North Hinksey and South Hinksey. (Compensation).
  - Monitoring programme and any implement any necessary remedial actions.
- 1225. Advice on these measures was provided by the Floodplain Meadows Partnership (FMP) at CD3.13. Importantly the FMP establish that habitat translocation is not an acceptable alternative to maintaining habitats *in situ* and that translocation should not therefore be seen as a mitigation for loss through development and may only be able to offer partial compensation.
- 1226. In this respect, the Agency were candid in their acknowledgement that translocation is not straightforward and there is limited chance of success. Accordingly, the translocation does not form part of the compensation measures for OFAS. However, I agree with the Agency's approach that trying to translocate the turf, which would need to be removed for OFAS, is better than destroying it. Moreover, this new translocated habitat could be managed specifically and in a dedicated way to ensure its optimum maintenance. OxCoCo would have involvement in approving both the translocation

methodology and the future maintenance of it through the granting of planning permission and associated conditions, thereby helping it's likely success.

- 1227. The MPG4 grassland at Hinksey Meadow is very sensitive to hydrological impacts. Therefore, it is important to ensure that the existing groundwater regime is not compromised by the proposed channel construction. The Agency has carried out borehole testing to gauge baseline conditions. Through the borehole results and the modelling work it is anticipated that OFAS would cause lowering of the groundwater during dry summers. To mitigate against this impact the water levels in local streams will be managed, and a series of riffles will be installed in the Bulstake Stream. Monitoring will be in place if the scheme is constructed so any mitigation can be improved where necessary. Whilst criticism has been made that the extent of borehole testing has been limited and that the flood modelling used is not sensitive enough, I have already concluded that the modelling used by the Agency provides a thorough analysis of the effects of the scheme. Furthermore, the approach used for the borehole testing is proportionate to form a judgement on the scheme.
- 1228. In terms of the wider biodiversity impacts of the OFAS, objectors stated that alternatives were available that would reduce the environmental harm to the area. Whilst that may be the case, I have already set out that the suggested alternatives do not provide the advantages that would merit their further investigation.
- 1229. The requirement for BNG is established through the Environment Act 2021 and this requirement is also reiterated in the Agency's own corporate objectives. The mandatory requirement for BNG for planning applications was not applicable when the scheme was submitted, however the Agency agreed with OxCoCo that OFAS would deliver a 10% BNG. The BNG calculation submitted with the planning application in 2022 showed the scheme was providing over 10% net gain for both terrestrial habitats and watercourses on site. But, due to the additional survey work required by OxCoCo the calculated on-site terrestrial habitat net gain changed from +15.8% to -1.04%, resulting in a small net loss in biodiversity units. As such the Agency has had to look for additional habitat creation and enhancement off-site, but within 15km of the scheme. I have had no substantive evidence before me which would suggest that such additional habitat cannot be found and therefore, whilst this may delay the grant of planning permission, it would not be an impediment to it. [192, 430-431, 689]
- 1230. The Agency has conducted detailed assessments for protected species, which included an assessment of any habitat that would be removed during construction operations such as trees and hedgerows. During the planning application consultation process both NE and OxCoCo's Biodiversity Officer set out that planning conditions could be used to ensure that further pre-construction surveys are undertaken, and that relevant species are suitably protected.
- 1231. The Agency were not asked to undertake specific wider surveys for invertebrates. However, the habitats that were not surveyed for invertebrates were not considered unique or unusual in the context of the Thames floodplain, and I agree with the Agency that it is unlikely that more detailed invertebrate surveys of the wider scheme would have influenced the mitigation and compensation requirements which are fully informed by those habitats being lost and therefore represent a worst-case scenario.
- 1232. Given the demonstrated need to create a flood channel a large number of trees and hedgerows will have to be removed. I accept that this would create a change to the local landscape and habitats available. Furthermore, I note the objections that such vegetation removal would impact on the ability of the area to act as a carbon sink.

- 1233. Nevertheless, the OFAS will be replacing these habitats and features with new habitats, including a greater area of woodland, more wetland habitats than currently exist, and floodplain grassland, all of which can make a significant contribution to local habitats and to carbon storage. Moreover, in this respect the Agency state that, using a Carbon Impact Tool, the expected carbon emitted from construction and operational activities is less than what would occur if the city continued to flood. [169]
- 1234. Maintenance and management of the OFAS will ensure that invasive species, such as Himalayan Balsam, do not get established. A programme of maintenance and management could be facilitated through a suitably worded planning condition.
- 1235. The fishery value of the wider Thames catchment will be improved by the removal of Towles Mill Weir so that fish passage is not obstructed. Water levels will be managed to ensure that fish can safely migrate, and a construction management plan would be imposed to ensure that construction operations did not affect spawning areas or migration. With these measures in place the fishery value of the area would be maintained.
- 1236. In summary, I consider that, in terms of biodiversity impact and mitigation, the OFAS is broadly in accordance with the relevant guidance and Development Plan policies, and I have found no insurmountable matters that would prejudice the grant of planning permission. Furthermore, given that NE considers that the proposed development will not have significant adverse impacts on designated sites or priority habitats/species, this adds weight to my findings.

## <u>Highways</u>

- 1237. The CPO is accompanied by a comprehensive Transport Assessment and further information was submitted during the Inquiry to address matters raised by the objectors. I note that both National Highways and OxCoCo as the Local Highway Authority, are satisfied that the proposed development can be accommodated in transport terms. [209-215]
- 1238. Nonetheless, understandable anxieties were expressed to the Inquiry by interested parties. Such concerns relate largely to the need to maintain public safety and reduce the potential for congestion and the knock-on effects on the local economy at the A34 South Hinksey slip road (north and south). [639-640]
- 1239. It is common ground that this slip road is below current standards in terms of that established by the Design Manual for Roads and Bridges. The Transport Assessment for the scheme states that an additional HGV would merge every 5 minutes from the South Hinksey junction onto the A34. When this is split across both north and south slip roads the northbound slip would see 9-10 outward HGV movements per hour (one HGV every 6-7 minutes) and the southbound slip 2-3 movements per hour (one HGV every 20-30 minutes). Given this low frequency of vehicle movements and the intended reduction in the speed limit on the A34, this is unlikely to have a material impact on the safe and efficient operation of the junction, increased journey times or give rise to increased driver stress.
- 1240. I have had regard to concerns raised by local people about previous accidents in the vicinity of the site. However, no detail has been provided to show that the accidents were as a result of usage of the slip road and there is no evidence before me to suggest any pattern or frequency of incidents that might be worsened by the construction operations.

- 1241. There is both formal and permissive public access throughout the OFAS area [541, 551]. Public rights of way are likely to be closed and/or diverted during periods of construction, leading to disruption. However, mitigation will include provision of diversion routes (with appropriate signage) and ensuring the duration of closures is kept to a minimum. [196-202]
- 1242. Whilst there may be temporary disruption during the construction works necessary to implement the scheme, there will be no lasting impact on public access and recreation.
- 1243. Subject to appropriate conditions and obligations, which can be imposed by the grant of planning permission, I do not find that the highway impacts of the scheme are insurmountable, and they are therefore broadly in accordance with the relevant Development Plan Policies.

## Railway Infrastructure and Safety

- 1244. There are statutory objections from landowners relating to the use of the land alongside the railway. Network Rail's objection is considered below at paragraph 1298. DB Cargo (OX 026S) is the registered leasehold owner of railway land known as Yard and Sidings Complex, Hinksey Depot. The Agency requires the land and rights over an access track off Old Abingdon Road. Whilst access would be prevented during construction, access rights would be granted to DB Cargo post completion of the scheme. However, this access is DB Cargo's only access to the railway land and will cause interference with DB Cargo's operations as a rail freight operator. [605-606]
- 1245. Following a number of meetings between the parties it was agreed that a temporary access route would be constructed to facilitate full access for both DB Cargo and Network Rail. At the Inquiry I was informed that a tripartite deed of undertaking was required to be agreed, then the objections could be withdrawn. Furthermore, a Schedule of Conditions is required to deal with lineside safety during construction operations. This Schedule of Conditions was agreed on day 11 of the Inquiry. It appears to me that substantial efforts have been made by all parties to resolve this issue and that this matter would not prevent the scheme progressing.

## <u>Heritage</u>

- 1246. The approach to the evaluation of heritage assets was agreed by OxCoCo, OxCiCo and Historic England. This evaluation was undertaken in the following stages; desk based assessment; geophysical survey and geoarchaeological survey; trial trenching and EIA. [203-206]
- 1247. At the Inquiry concerns were raised relating to the Old Abingdon Road and the associated Norman culverts. At this location a new channel feature and two bridges would be introduced and as a result of these works the ES identifies a magnitude of impact of minor and the significance of effect as moderate adverse.
- 1248. The Framework sets out at paragraph 205 that "When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance." Paragraph 206 continues "Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification."

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- 1249. The Framework at paragraph 207 states that "Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss."
- 1250. There is some disagreement on the level of harm caused. However, the design of the scheme has evolved to avoid the better-preserved sections of the culverts and to use the Old Abingdon Road, west of the Kennington Road, junction as the preferred place for the scheme channel to cut through. This approach was also agreed with Historic England and OxCoCo, because the evaluation has shown that the excavated sections have already suffered from truncation and collapse in subsequent centuries.
- 1251. Whilst the OPT considers that further investigation works should be conducted, the Agency has submitted proportionate evidence and further archaeological excavation would be conducted prior to construction works proceeding. This would be secured via a suitably worded planning condition.
- 1252. The Planning Authority will have to make a judgement as to whether substantial harm would be caused to the heritage assets and, if it is, whether it can be demonstrated that public benefits would outweigh such harm. Whilst I accept that it is a different legal test that I have to consider for the CPO, I have found that the scheme will achieve substantial public benefits, as set out below, to enable the compelling case for the CPO to be demonstrated.
- 1253. Given the evidence presented I do not find that the heritage impacts of the scheme are insurmountable or would cause an impediment to the OFAS progressing.

## Living Conditions

- 1254. Much of the concern relating to the impact of OFAS on living conditions relates to the proposed construction activities. The Agency intend to use an Environmental Management Plan (EMP) and Traffic Management Plan (TMP) to ensure that Best Practicable Means (BPM) are employed to reduce and control noise (including vibration), disturbance and air pollution.
- 1255. Construction compounds near homes will be screened by a raised bund which would reduce visual impact and noise. Local residents would also be kept informed of construction operations via a Customer Centre and Liaison Officer. Traffic movements would also be timetabled to avoid peak traffic to reduce any increase to current congestion levels. [216-220]
- 1256. The EMP and TMP are matters that could be secured through planning conditions. Such measures would avoid harm to the living conditions of surrounding residential occupiers.

## <u>Landscape</u>

- 1257. At the Inquiry Mrs Burt explained that the Agency has a statutory duty to protect or enhance the environment, as established by the Environment Act 1995. Accordingly, the scheme has incorporated mitigation relating to the landscape in the design since its conception and as established within the OFAS objectives. [166-173]
- 1258. In terms of the impact of the scheme on the landscape character during construction, given the nature and duration of the works, and the number of households and public rights of way with direct views of the proposals, the impacts associated with the scheme

are considered to be major/moderate adverse. Impacts will be mainly limited to the period of construction when plant and equipment is on site and vegetation has been cleared. However, as grass on the channels and embankments will be re-seeded and hedgerows/woodland will be replanted outside of the flood channel, any impacts will be temporary.

- 1259. Given the landscape mitigation measures proposed, the impact of the scheme on landscape character during operation are considered to be, in the main, minor beneficial. However Kendall Copse is considered to be moderate adverse given the greater degree of engineering at this location.
- 1260. As I heard at the Inquiry many objectors were concerned about the loss of trees, which are an important part of the landscape. Approximately 2,000 individual trees will need to be felled as a result of OFAS. As mitigation for this loss 3,632 trees will be planted within areas of proposed mixed, deciduous woodland, with a further 239 individual trees planted across the wider scheme area. Additionally, 15,000 smaller tree species (e.g. hawthorn, hazel and elder) would be planted within the proposed woodland areas and on the woodland edges, along with many more native shrubs. The aim of the landscape proposals is to reflect the surrounding flood meadow landscape in terms of species and character and increase the value of habitats for both landscape amenity and wildlife.
- 1261. I accept that, in terms of screening, the establishment of these trees would take approximately 15 years to mature to reach their potential heights to mitigate visual impacts. However, the wider environmental benefit of these species would be achieved much sooner and throughout the trees' lifetime.
- 1262. The comprehensive landscape mitigation measures proposed and the use of sensitively designed hard landscaping features, such as bridges and path surfacing, would result in a scheme that would in the long term enhance the floodplain landscape character, protect landscape settings and important views and increase green infrastructure. The scheme would broadly comply with the Development Plan and I have not been shown any insurmountable problems in terms of the various impacts which would of necessity shatter the possibility of granting planning permission.

## Loss of grazing land

- 1263. Objectors assert that the OFAS will restrict access to grazing land, either temporarily or permanently. The Agency has explained to landowners and tenants that only a small proportion of their land is required, and any works would be over a short timescale. The Agency has also confirmed that the rights will not be exercised to exclude the occupiers' access to the stables.
- 1264. The Agency has also sought to find alternative grazing land, including that at Willow Walk. Overall, the Agency has designed the OFAS to ensure that only the land needed for the scheme is included within the CPO. Access will be maintained, and alterative grazing options have been offered. Accordingly, these objections cannot be supported.

## <u>Green Belt</u>

1265. The Agency have adopted the precautionary approach that a proportion of the OFAS is situated within the Green Belt and certain elements of the scheme could be considered 'inappropriate development' [207-208]. As such 'very special circumstances' need to be demonstrated. The Framework states at paragraph 153 that "Very special circumstances' will not exist unless the potential harm to the Green Belt

by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations."

1266. The Planning Authority will have to make a judgement as to whether 'very special circumstances' exist that would outweigh the Green Belt harm. Whilst I accept that it is a different legal test than that I have to consider for the CPO, I have found that the scheme will achieve substantial public benefits, as set out below, to enable the compelling case for the CPO to be demonstrated. Moreover the purpose of the Green Belt will be protected, given that the use and openness of the area will be preserved for the floodplain.

#### Other matters

- 1267. A newspaper article was presented to the Inquiry (INQ/17) which reported on the National Audit Office's statement that 'the Agency has had to adjust the amount of properties it will protect over the next 5 years from 336,000 to 200,000'. The article also stated that the Agency was failing to meet its maintenance targets. [647]
- 1268. In response the Agency stated that there will be no impact for the funding for OFAS as set out in INQ/18. In terms of maintenance OFAS is funded for both construction and future maintenance for the first 10 years, which also includes the maintenance of the landscaping and habitat creation areas. Funding for maintenance post the 10 yr period are funded through a revenue maintenance programme. [232-236]
- 1269. Operational maintenance costs for the full 100-year scheme appraisal period have broken down into revenue activities. A Maintenance Plan (provided at CD2.10) has been produced by the Agency's Operations Management team. This shows an appropriate maintenance plan is considered as part of the scheme's costs.
- 1270. Given that Government policy requires the Agency to operate and maintain its assets and the priority to protect Oxford from flooding is high, I would not think that maintenance funding would be withheld.
- 1271. Concerns have been expressed that public utilities could be disrupted due to construction activities. Relevant utility companies have raised no objections, or their objections have now been withdrawn. The site is within a sub-urban area and satisfying utility requirements would be essential for the Agency to progress the scheme. This matter could therefore be addressed via a planning condition.
- 1272. Several Statutory Objectors have mentioned that the use of CPO powers is premature as the Agency has not fully tried to acquire the land by agreement. However, the Agency has been negotiating with the landowners over an extensive period of time and there is no reason why negotiations and the CPO process cannot run concurrently.
- 1273. I note the objections made as to whether sufficient information has been supplied to enable landowners to understand the impact of the CPO on their property. From the evidence before me there has been engagement and negotiations on at least eight occasions since 2017, most recently in 2023. All relevant planning application drawings, and Order Maps have also been provided. Accordingly, I consider that sufficient information and consultation has been made throughout the process and has been continuing during the Inquiry process.
- 1274. OX 007S Plots 01/040; 01/041; 01/042; 01/043; 01/044; 01/045; 01/046; 01/047; 01/049; 01/050; 01/051; 01/052; 01/053. The Agency and Sackville have completed on the agreement. Accordingly, their objection will be withdrawn. In any event, the submitted evidence and an inspection of the scheme plans show that the plot

in question can be seen to be essential to the implementation of the scheme. As such, these objections cannot be supported.

- 1275. OX 009S Plots 03/0725 and 03/073 would be required (as land) for exchange land. Given my conclusion in respect of the Section 19 application (Addendum A) and the submitted evidence and an inspection of the scheme plans show that the plot in question can be seen to be essential to the implementation of the scheme. As such, these objections cannot be supported.
- 1276. OX 011S Plots 03/004; 03/005; 03/006; 03/007; 03/008; 03/009; 03/010; 03/011; 03/012; 03/013; 03/014. The option agreement is currently awaiting execution, and exchange and completion are anticipated in order for the objection to be withdrawn. In any event, the submitted evidence and an inspection of the scheme plans show that the plot in question can be seen to be essential to the implementation of the scheme. As such, these objections cannot be supported.
- 1277. OX 015S Plots 03/025; 03/025x; 03/027; 03/031; 03/032; 03/033; 03/001; and 03/036 would be required (as rights) to temporarily locate a crane for the lifting of a replacement bridge together with other works. The Agency has investigated other locations, but due to site constraints the Buxton Court car park is the only site available. The Agency has agreed to provide off-site car parking for Buxton Court users and is in negotiations with neighbouring landowners, including the nearby Park and Ride site, for its provision.
- 1278. OX 018S Plots 09/013, 09/014, 09/016, 10/004, 10/005, 10/006, 10/007 and 10/008 would be required (as land and rights) for temporary working areas and the rights to pass and repass. The Objector comments that he has rights over a further plot of land, namely plot 06/011, on which he has not been consulted. The Agency have looked into this matter and are seeking advice from Corpus Christi College, who advised the Agency that they owned the land. The result of this discussion will be drawn to the attention of the Secretary of State in a CPO change log. In any event the Objector has not been prejudiced as he has still received notification of the CPO. [599-604]
- 1279. OX 023S Plot 07/001 would be required (as land) for environmental mitigation. The submitted evidence and an inspection of the scheme plans show that the plot in question can be seen to be essential to the implementation of the scheme. As such, these objections cannot be supported. [1039-1045]
- 1280. OX 024S Plots 10/028; 10/030; 10/032; 10/033; 10/034; 10/035; 10/036; 10/037; 10/038; 10/039; 10/040; 10/042; 10/043; and 10/044 would be required (as land) for the construction and maintenance of a flood wall. The Objector states that this would result in the loss of 50% of her garden which includes a parking space. I have sympathy for the Objector and the loss of the mature trees and a percentage of her garden which she has cultivated over many years. Nevertheless, the Agency has tried to adjust the design of the flood wall to ensure the minimum disruption and loss of plants and the submitted evidence and an inspection of the scheme plans show that the plot in question can be seen to be essential to the implementation of the scheme. As such, these objections cannot be supported. [565-573]
- 1281. Further concerns were raised regarding the ability of the Objector to exercise the 'break clause' in the lease agreement. The Agency has received legal advice on this issue and has communicated this to the Objector. Reasonable attempts have been made to reach agreement and I am confident that this could be achieved. The submitted evidence and an inspection of the scheme plans show that the plot in

question can be seen to be essential to the implementation of the scheme. As such, these objections cannot be supported. [590-598]

1282. OX 006S – Plots 01/005; 01/006; 01/007; 01/008; 01/009; 01/010; 01/011; and 01/012 would be required (both land and rights) for the construction of a new access track. Access provision for the Objector to reach their retained land would be safeguarded. The submitted evidence and an inspection of the scheme plans show that the plot in question can be seen to be essential to the implementation of the scheme. As such, these objections cannot be supported. Concerns relating to the exchange land certificate are addressed in the report at Addendum A. [574-589]

## **Benefits**

- 1283. Considerable support has been expressed for the scheme, particularly by the public authorities and their elected members. The principle of increasing the capacity of the floodplain through the OFAS is supported by OxCoCo, OxCiCo and VoWHDC, and a number of other parties such as the Oxfordshire Local Enterprise Partnership, Thames Water, the University of Oxford, the Oxford Flood Alliance, the Thames Regional Flood and Coastal Committee and National Highways. [262-280, 312, 338]
- 1284. Moreover paragraph 4.18 of the OxCiCo Local Plan states that "The Oxford Flood Alleviation Scheme, a partnership project, will help to convey water away from development infrastructure and will help greatly in reducing flooding in the most at risk areas. It will bring considerable benefits to the city in terms of reduced risk of flooding to homes, businesses, major roads and the railway."
- 1285. I note that support for the scheme does not in itself provide justification, nevertheless, as Ms Formoy mentioned at the Inquiry, the ability to attract funding from a variety of sources also demonstrates the importance of the project for the area.
- 1286. The implementation of OFAS would lead to the reduction of homes flooded in a 1% AEP from 1,603 to 518. Those at risk of economic damage would reduce from 2,839 to 1,002. These benefits are valued at £1,006.7 million, although this amount would be greater if the costs to the emergency services, car damage insurance claims and temporary accommodation costs were also included. Moreover, the personal costs to homeowners in terms of mental health i.e., depression, stress and anxiety and loss of earnings also need to be considered. [284-289, 317, 325, 349]
- 1287. Flooding also restricts peoples' opportunity to access businesses either for employment or to purchase items. Deliveries are also impacted causing a wider effect on the supply train. The economic impact of flooding on business is calculated to be approximately £154 million. OFAS will provide increased resilience to the city of Oxford given that it would be less prone to flooding events, which would in turn improve the City's reputation to all those who use it or wish to develop businesses there. [324]
- 1288. Critical infrastructure would be at less risk from flooding. Key highway routes and the railway line would be able to remain open for longer. In this respect, work undertaken by AECOM on behalf of Network Rail in 2016 suggests an average flood event in this location could cost £10-13 million. Electricity substations would be better protected as well as other utilities such as broadband networks. Schools and health centres would be at reduced risk of flooding and flood damage and access to these essential services would be maintained. Given that the Agency is working alongside Thames Water residents would also see a reduction in sewer flooding and disruption to water supply. [340, 344]

1289. I accept that the mitigation proposed is as a direct consequence of the construction operations, however the scheme will deliver BNG and habitat enhancement in the medium to long term. Furthermore, improvements will be made to footpaths which would provide greater accessibility and opportunities for walking all year round, as well as the construction of a new 2.25km cycling and walking route, which would utilise the proposed channel maintenance track. This would align with the Government's ambition to improve the environment. [221-226, 345]

## Summary of harms versus benefits

- 1290. The implementation of OFAS would lead to the reduction of homes flooded in a 1% AEP from 1,603 to 518. Those homes at risk of economic damage would reduce from 2,839 to 1,002. The risk of flooding to businesses would be reduced, and the resilience and reputation of the city would be improved in the long term. The scheme would also facilitate a biodiversity net gain, commensurate with the scale of the works to facilitate the project and would improve year round recreational opportunities.
- 1291. There will be significant harm caused to the MG4 grassland habitat and to designated heritage assets, as well as harm to the Green Belt, as set out above. A proportion of grazing land will be lost, as will access to other land held by landowners which would be acquired as part of the CPO.
- 1292. Given the mitigation proposed I consider that these harms are insufficient to suggest that the scheme is in itself unacceptable but are circumstances that can be addressed under the planning application or compensatory arrangements, where applicable. When considered in the round the public benefits of the OFAS would clearly outweigh the harm identified.

# Whether there are likely to be any impediment to the Agency implementing the proposal

- 1293. At the time the Inquiry closed the planning application for the OFAS was not yet determined. However, planning permission is not a pre-requisite for a CPO. Delays to the determination of the planning application have been due to requests by OxCoCo for further information, on which the Council carried out consultation during March 2023. The Agency stated during the Inquiry that the planning application would likely go to OxCoCo's Planning and Deregulation Committee in April 2024.
- 1294. There is ongoing national and local government policy support for the scheme. I have found that OFAS broadly complies with the development plan and therefore, regional policy drive and strong local policy that promoted the need for flood defences.
- 1295. In line with planning legislation, that the decision is in accordance with Section 38(6) of the Planning and Compulsory Purchase Act 2004 and section 70(2) of the Town and Country Planning Act 1990, there is no obvious reason why planning permission might be withheld.
- 1296. Under section 16 of the Acquisition of Land Act 1981, statutory undertakers who wish to object to the inclusion in a compulsory purchase order of land which they have acquired for the purposes of their undertaking, may make representations to 'the appropriate minister'. This is the minister operationally responsible for the undertaker, e.g. in the case of a gas transporter or electricity licence holder, the Secretary of State for Energy Security and Net Zero. Such representations must be made within the period stated in the public and personal notices as specified in the act.

- 1297. The objections raised by National Grid were withdrawn (INQ/31). No objections were received from other utility providers.
- 1298. Network Rail property is special category land for the purposes of the Order. Acquisition of its land is subject to Special Parliamentary Procedure if Network Rail objects to the Order and such objection(s) are not withdrawn. An objection has been received from Network Rail dated 24 March 2023. Network Rail's objection to the Order is on the grounds that operational railway land is adversely affected and that they need full control. [939-942]
- 1299. The OFAS does not directly interfere with the rail lines. However, sheet piling is required in proximity to the line, between the west side of the rail lines and Hinksey Ditch, north of Kennington village. Furthermore, it would be necessary to construct a weir structure to regulate water flows in a drain located in-between mainline tracks, north of Old Abingdon Road, which may require the temporary closure of a section of track or imposition of a speed restriction whilst the works are completed.
- 1300. The Agency has been involved in ongoing discussions with Network Rail since 2014. Both parties have received a draft agreement and schedule of conditions, which I understand will be signed imminently. As such, the property interests of Network Rail do not present an impediment to the Scheme and I am confident the agreements requested by Network Rail will be completed, giving rise to the removal of their objection.
- 1301. For the reasons set out in detail in my accompanying report relating to the section 19 application, I have concluded that OFAS would exceed the statutory threshold of being no less in area and equally advantageous to the relevant section 19 parties. Accordingly, a recommendation has been made that the Certificate be given. The Footpath extinguishment Orders have been confirmed and are attached to this Report at Addendum B.
- 1302. The Inquiry received no convincing evidence of any other impediments that would prevent or delay implementation of the Scheme as proposed.

## Whether the proposed Scheme should be modified

- 1303. A number of modifications are proposed to the Order by the AA. These arise both in response to objections, but also by way of factual updates. The Proposed Modifications are explained in the Agency's Inquiry Document INQ/6 (CPO Modifications Explanatory Note).
- 1304. The effect of the modifications would be to correct typographical and factual errors. None of the modifications involve the acquisition of any additional land such as to engage section 14 of the 1981 Act.
- 1305. The Proposed Modifications were made available to all interested parties. No responses were submitted or made verbally at the Inquiry.
- 1306. The Proposed Modifications all fall within scope of the Authority's discretion to modify and the relevant Plots are identified in INQ/6. No sound reason has been offered to challenge their merits and no party would be prejudiced by their acceptance. My overall conclusion in this regard is to accept the Proposed Modifications as submitted and set out at INQ/6.

#### Human Rights

- 1307. The Scheme would be implemented by a public body who must address the effects of the implementation of the OFAS against those rights established under the requirements of the European Convention on Human Rights, enshrined in law by the Human Rights Act (HRA) 1998. In this case, the Agency has provided a 'Human Rights Assessment' (CD2.16) which establishes the 'Human Rights considerations'. [259-260]
- 1308. Article 1 of the First Protocol (Article 1), as incorporated by the HRA, provides that every person is entitled to peaceful enjoyment of their possessions, including their property. Article 1 requires that no one shall be deprived of their possessions except in the public interest and subject to conditions provided by law. The CPO Guidance, 2019, indicates that an AA should be sure that the purposes for which it is making a CPO sufficiently justify interfering with the Human Rights of those with an interest in the land affected. The European Court of Human Rights has recognised, in this context, that regard must be had to the fair balance which has to be struck between the competing interests of the individual and the community as a whole.
- 1309. Article 8 of the HRA confers a right to respect for private and family life. It should be noted that these are qualified rights, whereby interference may be justified in the public interest, but the concept of proportionality is crucial.
- 1310. The Agency asserts that there could be an impact on Article 9 (Freedom of thought, conscience, and religion), due to the temporary elevated noise and dust disturbance during construction. It is possible this could impact on places of worship, especially at St Lawrence's Church in North Hinksey.
- 1311. I consider that Article 6 of the HRA is also engaged, which relates to the right to a fair trial. The CPO has correctly followed the required statutory procedures in terms of publicity and opportunities for interested parties to engage, and the Inquiry process has provided a fair and public hearing by an independent and impartial tribunal to consider these representations. The Public Inquiry sought to be as inclusive and accommodating as reasonably possible. The CPO was also accompanied by statutory opportunities for public engagement in connection with the Planning Application and other informal engagement undertaken by the Agency.
- 1312. To my mind, the construction phase of the Scheme would impact on Article 8 and 9, in particular, disruption caused by noise, dust and increased traffic on: home and family life, commercial use of land, transport, recreation and access, rough sleepers, and data protection. However, as I have already commented, the Agency intends to use 'best practice' and the use of planning conditions to secure this would reduce any disruption from construction operations to a minimum.
- 1313. In terms of Article 1, the CPO would cause interference through the acquiring of private land and rights either temporarily or in full. The Agency has sought to minimise such land and rights acquisition through the design of the scheme, efforts to acquire the Order Lands by agreement and that compensation would be available.
- 1314. The Agency has carefully considered the benefits that OFAS will create, in particular the reduction of flooding to homes, businesses and critical infrastructure. Whilst I have considered the alternatives put forward, I have found that these would not achieve the objectives or benefits that OFAS would offer. I am satisfied that any interference with their rights under the ECHR is in accordance with the law, pursuant to a legitimate aim, and proportionate given the scale of the public benefits to which the use of the Order Land would give rise.

- 1315. In terms of the Equality Act 2010 and the PSED, the Agency is required to comply with it and has undertaken an Equality Impact Assessment (CD2.9). In the promotion of the CPOs, the Agency has been mindful of the need to properly discharge its obligations under the provisions of this legislation paying careful attention to any impacts identified in the Assessment on protected characteristics. The Agency has continued to engage with affected parties and has put in place appropriate measures to ensure that no demographics are excluded. This is reflected in the Assessment being a live document. [254-258]
- 1316. Mr Wynne attended the Inquiry and set out his concerns relating to a Scout group that he leads 553-534]. The group had recently sought to acquire the freehold interest in CPO plot 06/018, to which Mr Wynne currently holds a license. This plot provides the Scout group with river frontage and use of the wider field. As I was told this Scout group are very active and often use the river for canoeing and pond dipping. Mr Wynne also told me that the Scouts have ambitious plans to build a new hut and equipment storage area at this location. The OFAS would compulsory purchase this plot of land along the river frontage for construction operations. However, the Scouts would still have access to 2.35 hectares of the field. Mr Wynne asserts that OFAS has had inadequate regard to the impacts it would have on young people in discharging the PSED.
- 1317. Age is a protected characteristic as established in the Equality Act 2010 and it refers to a person having a particular age or being within an age group. This includes all ages, including children and young people. The purpose of the PSED is to make sure that the Agency in carrying out public functions thinks about how it can improve society and promote equality in every aspect their day-to-day business.
- 1318. I have no difficultly in understanding Mr Wynne's concerns and I appreciate that the activities his Scout group provide are an important part of a child's physical and emotional development. I also acknowledge that if the group lost this 'base' it would struggle to find an alternative location as other local scout groups are full and the children could struggle to get transport to alternative locations.
- 1319. Nevertheless, I have no evidence that the Agency has treated the Scout Group any less favourably than they have treated any other landowner / land users because of age. The Agency have actively discussed a number of options open to the Scouts with Mr Wynne, including access to the riparian environment when the construction operations have finished and the use of other Agency facilities such as Kings Lock. Accordingly, the Agency has sought to reduce any disadvantages of OFAS to the Scouts, and as part of the objectives to the scheme the Agency is creating and maintaining new recreational amenities.
- 1320. Overall, a number of specific elements have been included in the design of the scheme to ensure the design caters for all potential users. These measures include: provision of walking and cycling infrastructure; improved links to the existing PRoW network; improved accessibility to recreation spaces; and provision of educational opportunities.
- 1321. I am satisfied that the legitimate aim of the protection of property and infrastructure from flooding cannot be achieved by any means which are less interfering with the rights of such affected parties. They are proportionate and necessary in the circumstances and would not result in a violation of their human rights.

#### RECOMMENDATION

- 1322. On the basis of the evidence put before me, I recommend that, in terms of the overall scheme, the public benefits would clearly outweigh the adverse impacts identified. I am also satisfied that the scheme could not be delivered by means other than the implementation of the OFAS.
- 1323. The identified interference with Human Rights arising from the Order is necessary and in accordance with the law. It cannot be achieved by means less imposing and does not constitute an excessive or disproportionate effect on the interests involved relative to the purposes of the Order and the scale of public interest to be served. Should the Order be confirmed, the law is also inclusive of an entitlement to compensation in respect of the necessary interference.
- 1324. Consequently, I recommend that the Oxford Flood Alleviation Scheme Compulsory Purchase Order 2023 be confirmed with the modifications set out in INQ/6, subject to the consent relating to the Section 19 application being granted and the withdrawal of Network Rail's objection.

J Burston

INSPECTOR

# APPENDIX 1

## APPEARANCES AT THE INQUIRY

## FOR THE ENVIRONMENT AGENCY

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Daisy Noble, Counsel

## They called:

Richard Harding BEng(Hons) MICE CEng	Project Executive, Environment Agency
Philip Raynor BSc(Hons) MSc MCIWEM C.WEM CEnv	Director, Water and Environment, Jacobs
Emma Formoy BSc(Hons)	Funding and Benefits Realisation, Environment Agency
Gareth Simpson BSc(Hons) MSc	Senior User, Oxford Flood Alleviation Scheme, Environment Agency
David Lear FIHE IENG	Associate Director, Jacobs Engineering UK
Windsor Young Eng MICE	Contracts Manager, VolkerStevin Infrastructure Ltd.
Penny Burt BSc(Hons) CMLI	Principal Environmental Project Manager, Environment Agency
Graham Scholey MBE BA(Hons) CIEEM	Biodiversity Technical Specialist, Thames Area Environment Agency
Catherine Charman BA(Hons) MSc MCIfA	Senior Archaeologist, Environment Agency
Veronica James MRTPI	Planning Manager, Major Projects Hub Thames Area Environment Agency
Michael Thorne RICS FAAV	Associate Director, Dalcour Maclaren
Jonathan Smith RICS FAAV	Director, Dalcour Maclaren

#### **SUPPORTERS**

## FOR THE VALE OF WHITE HORSE DISTRICT COUNCIL

Councillor Bethia Thomas	Leader of Vale of White Horse District Council
Andrew Down	Deputy Chief Executive, Partnerships

## FOR OXFORD FLOOD ALLIANCE STEERING GROUP

Adrian Porter	Local resident
John Mastroddi	Local resident
Simon Collings	Local resident
Nick Hills	Local resident

## FOR OXFORD CITY COUNCIL

Councillor Nigel Chapman

## INDIVIDUAL SUPPORTER

Robert Price Local resident

## STATUTORY OBJECTORS

## FOR OXFORD PRESERVATION TRUST

	Scott Lyness KC	Instructed by Mills & Reeve LLP	
He called:			
	Hannah Fraser BA(Hons) (Cantab) MSc FGS cGeol	Director and owner, H Fraser Consulting	
	Rhys Coombs MECEE CEng MIET	Director and cofounder, CC Hydrodynamics Ltd.	
	Dominic Woodfield CEcol CEnv MCIEEM	Managing Director, Bioscan (UK) Limited	
#### FOR FERRY HINKSEY TRUST/ OXFORD FLOOD AND ENVIRONMENT GROUP

Mr Andrew Byass, Counsel Instructed by Richard Buxton Solicitors

He called:

Clive Carpenter BSc MSc CGeol EurGeol FGSMCIWEM	Partner GWP Consultants, Head of Water Resources and Chief Hydrogeologist
Patricia Murphy	Resident of Osney Island
Brian Durham FSA MCIfA MSc CertEIA	Resident of New Hinksey

#### FOR CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD

lan Miles	Technical Director, Ardent
RICS	

#### FOR DB CARGO LTD

Ms Sarah Fitzpatrick, Counsel

She called:

Mr Simon Lock DB Cargo Ltd

#### INDIVIDUAL STATUTORY OBJECTORS

James Wynne

**Elizabeth Dukes** 

Mr Beesley

#### **NON-STATUTORY OBJECTORS**

- Dr Riki Therivel Local residents
- Tim O'Hara Local residents

Local resident Dr Timothy King

Brian Durham FSA MCIfA MSc CertEIA

**Dr Sally Prime** 

Cllr Martin Dowie

Local resident

Local resident

Botley and North Hinksey Parish Council

# FOR HINKSEY AND OSNEY ENVIRONMENT GROUP

Jonathan Madden MA MSc

Kevin Larkin

# **APPENDIX 2 – CORE DOCUMENTS**

1. Order Doc	uments	
<u>CD1.1</u>	The Environment Agency (Oxford Flood Alleviation Scheme)	
CD1 2	Order Mans accompanying The Environment Agency (Oxford Flood	
001.2	Alleviation Scheme) Compulsory Purchase Order 2023	
<u>CD1.3</u>	Statement of Case	
<u>CD1.4</u>	Statement of Reasons	
2. Suppleme	2. Supplementary Scheme Documents	
<u>CD2.1</u>	Strategic Outline Case and Appendices dated June 2015	
CD2.2	Outline Business Case and Appendices dated June 2017	
<u>CD2.2a1</u>	Carbon Calculator Bridge	
<u>CD2.2a2</u>	Carbon Calculator Channel	
<u>CD2.2a3</u>	Oxford FAS Area 1 Carbon Modelling Tool	
<u>CD2.2a4</u>	Oxford FAS Area 2 Carbon Modelling Tool	
<u>CD2.2a5</u>	Oxford FAS Area 3 Carbon Modelling Tool	
<u>CD2.2a6</u>	Oxford FAS Area 4 Carbon Modelling Tool	
<u>CD2.2a7</u>	Oxford FAS Area 5 and 6 Carbon Modelling Tool	
CD2.2a8	Oxford FAS Area 7 Carbon Modelling Tool	
<u>CD2.2a9</u>	Preferred Option Carbon Calculator	
<u>CD2.2b</u>	Risk Register	
<u>CD2.2c</u>	Optimism Bias	
<u>CD2.2d</u>	Efficiency Register	
<u>CD2.2e</u>	Funding Evidence Table	
<u>CD2.f1</u>	Materials Management Plan	
<u>CD2.f2</u>	Appendix A to Materials Management Plan	
<u>CD2.f3</u>	Appendix B1 to Materials Management Plan	
<u>CD2.f4</u>	Appendix B2 to Materials Management Plan	
<u>CD2.2g</u>	Maintenance Model	
<u>CD2.3</u>	Economic Assessment Report, August 2022	
<u>CD2.4</u>	Economic Review of Osney Mead Defences dated June 2017	
<u>CD2.5</u>	Oxford Flood Risk Management Strategic Appraisal Report dated 2010	
<u>CD2.6</u>	Thames Catchment Flood Management Plan dated 1 December 2009	
<u>CD2.7</u>	Oxford Initial Assessment: Economic Appraisal Report dated October 2014	
CD2.8	Oxfordshire County Local Flood Risk Management Strategy 2016	
CD2.9	Equality Impact Assessment dated March 2023	
CD2.10	Maintenance Plan (updated)	
CD2.10a	Excel version of the Maintenance Plan	
CD2.11	Open Space and Exchange Land Report	
CD2.12	VBA review of HOEG twin pipe scheme option June 2023	
<u>CD2.13</u>	Oxford Area map: stream names	

<u>CD2.14</u>	Managing financial pressure on Marginal schemes: Guidance note on
	the effect of increasing inflation and financial pressures on scheme
CD2 15	Viability, May 2022
CD2.15 CD2.16	General Scheme Overview Drawings
<u>CD2.10</u>	Environment Agency's Human Rights Impact Assessment
3. Planning A	Application Documents
CD3.1	Request for Scoping Opinion submitted to Oxfordshire County Council
	in September 2016
CD3.2	Scoping opinion from Oxfordshire County Council to Environment
	Agency (8 December 2016)
<u>CD3.3</u>	Planning application forms
<u>CD3.4</u>	Planning application Location Plan (red line boundary)
<u>CD3.5</u>	Planning Statement dated February 2022
<u>CD3.6</u>	Planning Statement Addendum dated February 2023
<u>CD3.7</u>	General Scheme Overview
<u>CD3.8</u>	The Environmental Statement dated February 2022
CD3.8a	Appendix A: Engineering Design Drawings
<u>CD3.8a1</u>	Overview Plans
<u>CD3.8a1a</u>	Overview Plan with Key Structures Labelled
<u>CD3.8a2</u>	Temporary Working Area Drawings
<u>CD3.8a3</u>	Area 4 Raised Defence (floodwalls and embankments)
CD3.8a4	Not Used [previously Area 4 Planting Plans – moved to CD3.8i1]
CD3.8a5	Not Used [previously Area 4 Landscape and Habitat Management]
	Plans – moved to CD3.8/2]
<u>CD3.8C</u>	Appendix C: Ecological Appraisal and Survey
<u>CD3.81</u>	Appendix F: Arboncultural Assessment, Tree Survey and Vegetation
CD3.8g	Appendix G: Environmental Action Plan
CD3.8h	Appendix H: Air Quality
CD3 8i	Appendix I: Landscape
CD3 8i1	Planting Plans
CD3.8i2	Landscape and Habitat Creation: Delivery and Management Plan
CD3.8g	Appendix Q: Modelling Review of Removing Channel
CD3.8s	Appendix S: Biodiversity Net Gain Calculator
CD3.8s1	Biodiversity Metric 3.0, February 2022
CD3.9	Environmental Statement Addendum, February 2023
CD3.10	Appendix A: Engineering Drawings
CD3.10a1	Overview Plans
<u>CD3.10a2</u>	Typical Details Drawings
<u>CD3.10a3</u>	Gauging Stations
<u>CD3.10a4</u>	Temporary Working Area Drawings
<u>CD3.10a5</u>	Area 1 Channel Works
<u>CD3.10a6</u>	Area 1 Bridges and Culverts
<u>CD3.10a7</u>	Area 1 Raised Flood Defences
<u>CD3.10a8</u>	Area 2 Channel Works
<u>CD3.10a9</u>	Area 2 Bridges and Culverts
<u>CD3.10a10</u>	Area 3 Channel Works
<u>CD3.10a11</u>	Area 3 Eastwyke Ditch Flow Control Structure

CD3 10-12	Area 3 Bridges and Culverts
CD3 10a12	Area 3 Raised Defences
CD3 10a14	Area / Channel Works
CD3 10a15	Area 4 Bridges and Culverts
CD3 10a16	Area 4 Baised Defences (floodwalls and Embankments)
CD3 10a17	Not Used [previously Area 4 Planting Plans – moved to CD3 21a]
CD3 10a18	Not Used [previously Area 4 Landscape and Habitat Management
000.10010	Plans – moved to CD3.35]
<u>CD3.11</u>	Appendix B: Scoping Opinion, Pre-Planning Application advice and Environmental Update Note
<u>CD3.12</u>	Appendix C: Ecological Appraisal and Survey
<u>CD3.13</u>	Assessment of Impacts on Species Rich Floodplain Meadow Habitat,
	Floodplain Meadows Partnership (March 2018)
<u>CD3.14</u>	Alaska MG4 Grassland Translocation Outline Methodology
<u>CD3.15</u>	Appendix D: Protected Species Reports
<u>CD3.16</u>	Jacobs MG4 Grassland Mitigation Strategy dated 24 January 2022
<u>CD3.17</u>	Appendix E: Invasive Species Reports
<u>CD3.18</u>	Appendix F: Arboricultural Assessment, Tree Survey and Vegetation Management
<u>CD3.19</u>	Appendix G: Environmental Action Plan
CD3.20	Appendix H: Air Quality
CD3.21	Appendix I: Landscape
CD3.21a	Planting Plans
CD3.22	Appendix J: Archaeological and Heritage information
<u>CD3.23</u>	Appendix K: Habitat Regulations Assessment (HRA) Screening Report
CD3.24	Appendix L: Water Environment Regulations (WER) Compliance
	Assessment
<u>CD3.25</u>	Appendix M: Transport Assessment
<u>CD3.26</u>	Appendix N: Planning Policy Statement
CD3.27	Appendix O: Materials Management Plan
CD3.28	Appendix P: Soil Resource Survey Report
CD3.29	Appendix Q: Modelling Review of Removing Channel
<u>CD3.30</u>	Appendix R: Flora and Fauna Legal Compliance
<u>CD3.31</u>	Appendix S: Biodiversity Net Gain Calculator
<u>CD3.31a</u>	Biodiversity Metric 3.0, February 2023
<u>CD3.32</u>	Appendix T: Carbon Calculator Calculations
<u>CD3.33</u>	Appendix U: Multi Criteria Analysis (MCA) Report 2017
<u>CD3.34</u>	Alternatives Options Note dated 10 February 2023
<u>CD3.35</u>	Appendix V: Landscape and Habitat Creation: Delivery and
	Management Plan, February 2023
<u>CD3.36</u>	Environmental Statement Figures
<u>CD3.37</u>	Statement of Community Involvement dated December 2021
<u>CD3.37a</u>	Appendices A-D to the Statement of Community Involvement
<u>CD3.38</u>	Flood Risk Assessment, January 2022
<u>CD3.38a</u>	Flood Risk Assessment Appendices
<u>CD3.39</u>	Contamination Report, May 2018
<u>CD3.40</u>	Technical Note in response to Regulation 25 request, February 2023
<u>CD3.41</u>	Environmental Statement: Non-Technical Summary

4. Planning Policy and Guidance	
CD4.1	National Planning Policy Framework
CD4.2	Minerals and Waste Core Strategy, September 2017, Oxfordshire
	County Council
<u>CD4.3a</u>	Vale of White Horse Local Plan 2031 Part 1 (2016)
<u>CD4.3b</u>	Vale of White Horse Local Plan 2031 Part 2 (2019)
<u>CD4.4</u>	Oxford Local Plan 2016-2036, 2020
CD4.5	Not used
<u>CD4.6</u>	Oxfordshire Local Transport and Connectivity Plan 2022 – 2050
<u>CD4.7</u>	Oxfordshire County Council, Statement of Community Involvement, May 2020
<u>CD4.8</u>	Oxford City Council, Statement of Community Involvement June 2021
<u>CD4.9</u>	Vale of White Horse District Council and South Oxfordshire District Council, Statement of Community Involvement December 2022
<u>CD4.10</u>	Guidance on Compulsory purchase process and The Crichel Down Rules dated July 2019
<u>CD4.11</u>	Oxfordshire County Council Minerals and Waste Level 1 Strategic Flood Risk Assessment, 2015
CD4.12	Oxford City Council Strategic Flood Risk Assessment Level 1, 2017
CD4.13	VoWH SFRA Level 1 update February 2018
5. Technical	Guidance
<u>CD5.1</u>	Accounting for residual uncertainty: updating the freeboard guide. Report - SC120014 published in February 2017
<u>CD5.2</u>	Fluvial Freeboard Guidance Note R&D Technical Report W187 published by the Environment Agency in 2000.
<u>CD5.3</u>	Environment Agency – Flood and coastal risk projects, schemes and strategies: climate change allowances published in July 2020 (updated May 2022)
<u>CD5.4</u>	Environment Agency – Thames River Basin District Flood Risk Management Plan 2021 to 2027 published in December 2022
<u>CD5.5</u>	Environment Agency – National Flood and Coastal Erosion Risk Management Strategy for England published in July 2020
<u>CD5.6</u>	Environment Agency - Flood and Coastal Erosion Risk Management Appraisal dated March 2022
<u>CD5.7</u>	Environment Agency – 'The Flood and Coastal Risk Erosion Management Appraisal Guidance' dated March 2010
<u>CD5.8</u>	Defra – 'A Green Future: Our 25 Year Plan to Improve the Environment' dated January 2018
<u>CD5.9</u>	Defra – 'Flood and Coastal Erosion Risk Management: Policy Statement' dated July 2020
<u>CD5.10</u>	Defra - UK Climate Change Projections – November 2018 (Headline Findings – August 2022)
CD5.11	CIWEM – 'Floods and Dredging – a reality check Feb 2014'
CD5.12	SEPA - Floods, Dredging and River Changes
<u>CD5.13</u>	Flood and Coastal Risk Management (Cover page only - referred to in EA/3a)

6. Legal Doc	6. Legal Documents	
<u>CD6.1</u>	Water Resources Act 1991	
<u>CD6.2</u>	Hedgerows Regulations 1997	
<u>CD6.3</u>	Water Framework Directive 2000	
<u>CD6.4</u>	Water Resources Act 1991 (section 154)	
<u>CD6.5</u>	Environment Act 1995	
<u>CD6.6</u>	Environment Act 2021	
<u>CD6.7</u>	Acquisition of Land Act 1981	
<u>CD6.8</u>	Compulsory Purchase (Inquiries Procedure) Rules 2007	
<u>CD6.9</u>	Highways Act 1980	
<u>CD6.10</u>	Flood and Water Management Act 2010	
CD6.11	Not used	
CD6.12	Town and Country Planning Act 1990	
<u>CD6.13</u>	Town and Country Planning (General Permitted Development)	
	(England) Order 2015	
<u>CD6.14</u>	Town and Country Planning (Environmental Impact Assessment)	
	Regulations 2017	
<u>CD6.15</u>	Water Environment (Water Framework Directive) (England and	
	Wales) Regulations 2017	
<u>CD6.16</u>	Human Rights Act 1998	
<u>CD6.17</u>	Equality Act 2010	
7. Other Doc	uments	
<u>CD7.1</u>	Inspector's decision in London Borough of Barking and Dagenham	
	Council (Vicarage Field and surrounding land) Compulsory Purchase	
	Order 2021	
	(ref: APP/PCU/CPOP/Z5060/3278231)	

# **APPENDIX 3**

## INQUIRY DOCUMENTS LIST

Documents Submitted During the Inquiry		
<u>INQ/1</u>	Opening statement on behalf of the Environment Agency	
<u>INQ/2</u>	Opening statement on behalf of Oxford Preservation Trust	
<u>INQ/3</u>	Opening statement on behalf of Ferry Hinksey Trust and Oxford Flood and Environment Group	
INQ/4	Position statement on behalf of Sackville UK Property Select III Nominee (3) Limited and Sackville UK Property Select III Nominee (4) Limited	
<u>INQ/5</u>	Procedural Requirements Summary Statement	
<u>INQ/5.1</u>	Appendix 1 - Press Notices (Making)	
<u>INQ/5.2a</u>	Appendix 2 – Site Notice (Making)	
<u>INQ/5.2b</u>	Appendix 2 - Site Notice (Making) – Monitoring Data	
<u>INQ/5.3</u>	Appendix 3 – Qualifying Persons Notice	
<u>INQ/5.4</u>	Appendix 4 – Protected Assets Certificate	
<u>INQ/5.5</u>	Appendix 5 – General Certificate	
<u>INQ/5.6</u>	Appendix 6 – Statement of Case	
<u>INQ/5.7a</u>	Appendix 7 – Public Inquiry Notices – Site Notice	
<u>INQ/5.7b</u>	Appendix 7 – Public Inquiry Notices	
<u>INQ/6</u>	CPO Modifications Explanatory Note	
INQ/7a	Errata document in relation to the evidence of David Lear (Highways and Traffic) (EA/7a)	
<u>INQ/7b1</u>	Updated plan to Appendix C including minor clarifications – Figure 6 2a (EA/7c)	
<u>INQ/7b2</u>	Updated plan to Appendix C including minor clarifications – Figure 6 2b (EA/7c)	
INQ/8a	Oxford Floods 2003 – Aerial photograph	
INQ/8b	Oxford Floods – Aerial photograph	
<u>INQ/9</u>	Benefits Dependency Map	
<u>INQ/10</u>	Oxford Flood Alleviation Scheme Public Inquiry – Status of Statutory and Non-Statutory Objections v1 – 14 November 2023	
<u>INQ/10a</u>	Oxford Flood Alleviation Scheme Public Inquiry – Status of Statutory and Non-Statutory Objections v2 – 21 November 2023 update	
<u>INQ/10b</u>	Oxford Flood Alleviation Scheme Public Inquiry – Status of Statutory and Non-Statutory Objections v3 – 28 November 2023 update	
<u>INQ/10c</u>	Oxford Flood Alleviation Scheme Public Inquiry – Status of Statutory and Non-Statutory Objections v4 – 5 December 2023 update	
<u>INQ/10d</u>	Oxford Flood Alleviation Scheme Public Inquiry – Status of Statutory and Non-Statutory Objections v5 – 12 December 2023 update	
<u>INQ/10e</u>	Oxford Flood Alleviation Scheme Public Inquiry – Status of Statutory and Non-Statutory Objections v6 – 26 January 2024 update	

<u>INQ/11</u>	Errata to the evidence of Emma Formoy (Funding and Benefits Realisation) (EA/3a)
<u>INQ/12</u>	Annotated version of CD2.15 - General Scheme Overview Drawings
<u>INQ/13</u>	Note by the EA on Alternatives, 15 November 2023
<u>INQ/13a</u>	Updated Note by the EA on Alternatives, 13 December 2023
<u>INQ/13b</u>	Further Updated Note by the EA on Alternatives, 18 January 2024
<u>INQ/14</u>	Figures provided in Evidence in Chief by Phil Raynor
<u>INQ/15a</u>	Video of flooding – Botley Road and Earl Street – Nick Hills
<u>INQ/15b</u>	Photographs of flooding at Earl Street – Nick Hills
<u>INQ/15c</u>	Local Flood Protection – Nick Hills
<u>INQ/16</u>	Photographs of flooding – Simon Collings
<u>INQ/17</u>	Article from The Times, 15 November 2023
<u>INQ/18</u>	Email regarding the National Audit Report, 16 November 2023
<u>INQ/19</u>	Evidence Errata Summary Statement, Environment Agency
<u>INQ/20</u>	Figures to evidence of Hannah Fraser on behalf of Oxford Preservation Trust
<u>INQ/21</u>	Powerpoint presentation, Rhys Coombs on behalf of Oxford Preservation Trust
<u>INQ/22</u>	Evidence in Chief EA witness document reference
<u>INQ/23</u>	Statement of Common Ground on Ecology between the Environment Agency and Oxford Preservation Trust
<u>INQ/24</u>	Withdrawal of the objection by Oxfordshire County Council as Highway Authority, 22 November 2023
<u>INQ/25</u>	Email from Natural England to Oxfordshire County Council, regarding the planning application 19 April 2023
<u>INQ/26</u>	Section 19 Application, Notice of Intention, published 21 November 2023
<u>INQ/27</u>	Statement of Common Ground – Planning, between The Environment Agency and Oxford Preservation Trust, 23 November 2023
<u>INQ/28</u>	Slides for the appearance by Dr King
<u>INQ/29</u>	Note to the Inspector by The Environment Agency on the Evidence of Rhys Coombs, 24 November 2023
<u>INQ/29a</u>	Further Note to the Inspector by The Environment Agency on the Evidence of Rhys Coombs, 18 January 2024
<u>INQ/30a</u>	Site visit itinerary, 1 December 2023
INQ/30b	Site visit itinerary, 4 December 2023
<u>INQ/31</u>	Withdrawal of the objection of National Grid Electricity Transmission plc, 22 November 2023
<u>INQ/32</u>	Flood map reduction and increases, submitted on behalf of Ferry Hinksey Trust/ Oxford Flood and Environment Group
<u>INQ/33</u>	Extinguishment Orders - Notice of Order, 26 October 2023 (higher resolution versions of the plans are available <u>here</u> )
<u>INQ34a</u>	Updated version of the CPO (Clean) (See INQ/6)
INQ34b	Updated version of the CPO (Track) (See INQ/6)

<u>INQ/35</u>	Withdrawal of the objection by Ayse Ergeneli, 11 December 2023
<u>INQ/36</u>	Statement of Common Ground between: The Environment Agency (1) The Chancellors, Masters, and Scholars of the University of Oxford (2) and
	Oxford University Innovation Limited (3), 12 December 2023
<u>INQ/37</u>	Withdrawal of the objection by Oxfordshire County Council, as Landowners, 12 December 2023
<u>INQ/38</u>	Position Statement of the Environment Agency in relation to: DB Cargo (UK) Limited (1) and Network Rail Infrastructure Limited (2)
<u>INQ/39</u>	Withdrawal of the objection by Terry's Stone Cottage Limited, 20 December 2023
<u>INQ/40</u>	Response on Note to Inspector on Evidence of Rhys Coombs - Rhys Coombs for and on behalf of the Oxford Preservation Trust, 20 December 2023
<u>INQ/41</u>	Letter to the Inspector dated 22 December 2023 on behalf of DB Cargo
<u>INQ/42</u>	Details relating to the Accommodation Bridge at Willow Walk
<u>INQ/43a</u>	Updated version of the CPO (Clean) (See INQ/6 and INQ34a)
<u>INQ/43b</u>	Updated version of the CPO (Track) (See INQ/6 and INQ34b)
<u>INQ/43</u>	Closing Submissions by Hinksey and Osney Environment Group
<u>INQ/44</u>	Closing Submissions by Tim O'Hara
<u>INQ/45</u>	Closing Submissions by Brian Durham
<u>INQ/46</u>	Closing Submissions on behalf of Ferry Hinksey Trust and Oxford Flood and Environment Group
<u>INQ/47</u>	Closing Submissions on behalf of Oxford Preservation Trust
<u>INQ/48</u>	Closing Submissions on behalf of the Environment Agency
<u>INQ/48a</u>	Closing Submissions on behalf of the Environment Agency (as read out)

Procedu	Procedural and General Documents		
<u>PG1</u>	Pre-Inquiry Meeting Agenda		
<u>PG2</u>	Notes of the Pre-Inquiry Meeting		
PG3	Withdrawal of objection by Southern Gas, 8 June 2023		
<u>PG4</u>	Conditional Withdrawal of objection by Pembroke College, 24 October 2023		
<u>PG5</u>	Statement of agreement and matters to be discussed, submitted by the Environment Agency, 31 October 2023		
<u>PG6</u>	Withdrawal of objection by Oxford Camping and Caravan Club, 9 November 2023		

Proofs of Evidence – Environment Agency		
Scheme, Policy, Design & Need - Richard Harding		
<u>EA/1a</u>	Proof of Evidence	
<u>EA/1b</u>	Summary Proof of Evidence	

<u>EA/1c.1</u>	Appendices to Proof of Evidence – Part 1
EA/1c.2	Appendices to Proof of Evidence – Part 2
EA/1c.3	Appendices to Proof of Evidence – Part 3
<u>EA/1d</u>	Rebuttal Proof of Evidence
<u>EA/1e</u>	Appendices to Rebuttal Proof of Evidence
Land Ace	quisition & Agricultural Matters – Michael Thorne
<u>EA/2a</u>	Revised Proof of Evidence
<u>EA/2b</u>	Summary Proof of Evidence
<u>EA/2c.1</u>	Revised Appendices to Proof of Evidence – Part 1 MT1-MT15
<u>EA/2c.2</u>	Revised Appendices to Proof of Evidence – Part 2 MT16-MT30
<u>EA/2c.3</u>	Revised Appendices to Proof of Evidence – Part 3 MT31 1-242
<u>EA/2c.4</u>	Revised Appendices to Proof of Evidence – Part 4 MT31 242-492
<u>EA/2c.5</u>	Revised Appendices to Proof of Evidence – Part 5 MT32a-MT33a
<u>EA/2c.6</u>	Revised Appendices to Proof of Evidence – Part 6 MT33b
<u>EA/2c.7</u>	Revised Appendices to Proof of Evidence – Part 7 MT33c 1-191
<u>EA/2c.8</u>	Revised Appendices to Proof of Evidence – Part 8 MT33c 192-434
<u>EA/2c.9</u>	Revised Appendices to Proof of Evidence – Part 9 MT34a-MT64
<u>EA/2d</u>	Rebuttal Proof of Evidence
<u>EA/2e</u>	Appendices to Rebuttal Proof of Evidence
Funding	and Benefits Realisation - Emma Formoy
<u>EA/3a</u>	Proof of Evidence
EA/3b	Summary Proof of Evidence
<u>EA/3c.1</u>	Revised Appendices to Proof of Evidence – Part 1
<u>EA/3c.2</u>	Revised Appendices to Proof of Evidence – Part 2
Operatio	n & Maintenance - Gareth Simpson
<u>EA/4a</u>	Proof of Evidence
<u>EA/4b</u>	Summary Proof of Evidence
<u>EA/4c</u>	Appendices to Proof of Evidence
Flood Mo	odelling & Flood Risk Assessment - Phil Raynor
<u>EA/5a</u>	Proof of Evidence
<u>EA/5b</u>	Summary Proof of Evidence
<u>EA/5c</u>	Appendices to Proof of Evidence
<u>EA/5d</u>	Rebuttal Proof of Evidence
<u>EA/5e</u>	Rebuttal Proof of Evidence to Ferry Hinksey Trust/ Oxford Flood and Environment Group
Construction - Windsor Young	
EA/6a	Proof of Evidence
EA/6b	Summary Proof of Evidence
<u>EA/6c</u>	Appendices to Proof of Evidence
Highway	s & Traffic - David Lear

<u>EA/7a</u>	Proof of Evidence
<u>EA/7b</u>	Summary Proof of Evidence
<u>EA/7c</u>	Appendices to Proof of Evidence
<u>EA/7d</u>	Rebuttal Proof of Evidence
Landsca	pe, Recreation and Public Access - Penny Burt
<u>EA/8a</u>	Proof of Evidence
EA/8b	Summary Proof of Evidence
<u>EA/8c</u>	Appendices to Proof of Evidence
EA/8d	Rebuttal Proof of Evidence
EA/8e	Appendix to Rebuttal Proof of Evidence
Habitats & Ecology - Graham Scholey	
<u>EA/9a</u>	Proof of Evidence
EA/9b	Summary Proof of Evidence
EA/9c	Appendices to Proof of Evidence
EA/9d	Rebuttal Proof of Evidence
Cultural	Heritage - Catherine Charman
<u>EA10a</u>	Proof of Evidence
<u>EA/10b</u>	Summary Proof of Evidence
<u>EA/10c</u>	Appendices to Proof of Evidence
Planning	- Veronica James
<u>EA/11a</u>	Proof of Evidence
<u>EA/11b</u>	Summary Proof of Evidence
<u>EA/11c</u>	Appendices to Proof of Evidence
<u>EA/11d</u>	Rebuttal Proof of Evidence
Justification - Jonathan Smith	
<u>EA/12a</u>	Proof of Evidence
<u>EA/12b</u>	Summary Proof of Evidence

## Proofs of Evidence – Support

Vale of White Horse District Council	
<u>Sup01/1</u>	Proof of Evidence of Councillor Bethia Thomas
<u>Sup01/2</u>	Proof of Evidence of Andrew Down

Oxford Flood Alliance Steering Group	
<u>Sup02/1</u>	Proof of Evidence of Adrian Porter
Sup02/2	Proof of Evidence of John Mastroddi
<u>Sup02/3</u>	Proof of Evidence of Simon Collings
<u>Sup02/4</u>	Proof of Evidence of Nick Hills

Oxford City Council		
<u>Sup03/1</u>	Sup03/1 Proof of Evidence of Councillor Nigel Chapman	
Robert Price		
<u>Sup04</u>	Proof of Evidence of Bob Price	

# Written Representations - Support

<u>WRS/01</u>	Richard and Vicki Thurston
<u>WRS/02</u>	Victoria Johansen
<u>WRS/03</u>	Hugh Airedale
<u>WRS/04</u>	Dr James Pritchard
<u>WRS/05</u>	Matt Dyson
<u>WRS/06</u>	John Magrath
<u>WRS/07</u>	Tomas Imre
<u>WRS/08</u>	Gerry Kendall
<u>WRS/09</u>	Robert Lawrence
<u>WRS/10</u>	Julia and Peter Marsh
<u>WRS/11</u>	Sebastiaan van Schaik
<u>WRS/12</u>	Athene Reiss
<u>WRS/13</u>	Valerie Thomas
<u>WRS/14</u>	Marion Hanbury Brown
<u>WRS/15</u>	Jane Woodcock
<u>WRS/16</u>	Colin Cook
<u>WRS/17</u>	Adrian James
<u>WRS/18</u>	Keith Hutchence
<u>WRS/19</u>	Archibald W Hendry
<u>WRS/20</u>	Margaret Stopard
<u>WRS/21</u>	David Rawcliffe
<u>WRS/22</u>	Brian Spencer
<u>WRS/23</u>	Anne Thell
<u>WRS/24</u>	Dr Maria Unkovskaya-Harley
<u>WRS/25</u>	Andrew Boag
<u>WRS/26</u>	Kevin Busby
<u>WRS/27</u>	Polly Rawcliffe
<u>WRS/28</u>	Dr Barbara Hammond MBE
<u>WRS/29</u>	Ian and Claire Williams
<u>WRS/30</u>	Stephen Lynam and Fiona McFarlane
<u>WRS/31</u>	Leanne McCreadie
<u>WRS/32</u>	Andrew and Caroline Webber
<u>WRS/33</u>	Alistair Lloyd

<u>WRS/34</u>	Dr Anna Pendry
<u>WRS/35</u>	Martin and Georgina Kerr
<u>WRS/36</u>	Claire and David Wilson
<u>WRS/37</u>	Sohani Hayhurst
<u>WRS/38</u>	Ben Sawyer
<u>WRS/39</u>	Maria Radford
<u>WRS/40</u>	Rosemarie Perry
<u>WRS/41</u>	Oxfordshire Local Enterprise Partnership
<u>WRS/42</u>	Carolyn Porter
<u>WRS/43</u>	Elizabeth Ball
<u>WRS/44</u>	Gordon Mitchell
<u>WRS/45</u>	John Cotton
<u>WRS/46</u>	Alan Goodwin
<u>WRS/47</u>	Emmeline Bryant
<u>WRS/48</u>	James Miller
<u>WRS/49</u>	Paul Kirkley
<u>WRS/50</u>	Diane Chambers
<u>WRS/51</u>	S Voysey

# **Statutory Objectors**

Sackville UK Property Select III Nominee (3) Limited and Sackville UK Property Select III Nominee (4) Limited		
<u>OX 007S/1a</u>	Proof of Evidence of Howard Redhouse	
<u>OX 007S/1c</u>	Appendices to Proof of Evidence of Howard Redhouse	
Oxford Prese	ervation Trust	
Ecology & Nature Conservation – Dominic Woodfield		
<u>OX 009S/1a</u>	Proof of Evidence	
OX 009S/1b	Summary Proof of Evidence	
<u>OX 009S/1c</u>	Appendices to Proof of Evidence	
Hydrogeology – Hannah Fraser		
<u>OX 009S/2a</u>	Proof of Evidence	
OX 009S/2b	Summary Proof of Evidence	
OX 009S/2c	Appendices to Proof of Evidence	
Fluvial Hydro	ology – Rhys Coombs	
<u>OX 009S/3a</u>	Proof of Evidence	
OX 009S/3b	Summary Proof of Evidence	
Planning – Peter Canavan		
<u>OX 009S/4a</u>	Proof of Evidence	
OX 009S/4b	Summary Proof of Evidence	

<u>OX 009s/4c</u>	Appendices to Proof of Evidence
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James Wynne	
<u>OX 010S/1</u>	Proof of Evidence

Julian Richer and Richer Sounds	
<u>OX 011S/1</u>	Proof of Evidence

Ayse Ergeneli	
<u>OX17S/1</u>	Proof of Evidence (Objection withdrawn)

## Elizabeth Jukes

OX 024S/1 Proof of Evidence

# DB Cargo

<u>OX 026S/1</u>	Proof of Evidence
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Oxford Flood & Environment Group & Ferry Hinksey Trust	
Recreational Loss and Ecology – Patricia Murphy	
<u>OX 027S/1a</u>	Proof of Evidence (including summary and appendices)
OX 027S/2	NOT USED
Engagement and Alternatives – Brian Durham	
<u>OX 027S/3a</u>	Proof of Evidence
Hydrology – Clive Carpenter	
<u>OX 027S 4a</u>	Proof of Evidence (Amended)
<u>OX 027S 4b</u>	Summary Proof of Evidence (Amended)
<u>OX 027S 4c</u>	Appendix to Proof of Evidence (Amended)
<u>OX 027S 4d</u>	List of changes to Proof of Evidence (Amended)

# Non-Statutory Objectors

Riki Therivel and Tim O'Hara	
<u>OX 002N/1a</u>	Proof of Evidence
<u>OX 002N/1b</u>	Summary Proof of Evidence
<u>OX 002N/1c</u>	Appendices to Proof of Evidence

Councillor Martin Dowie	
<u>OX 011N/1a</u>	Proof of Evidence
<u>OX 011N/1b</u>	Summary Proof of Evidence

OX 011N/1c Appendix to Proof of Evidence

Dr Timothy King	
<u>OX 023N/1a</u>	Proof of Evidence
<u>OX 023N/1b</u>	Summary Proof of Evidence
<u>OX 023N/1c</u>	Appendices to Proof of Evidence

Hinksey and Osney Environment Group	
<u>OX 024N/1a</u>	Proof of Evidence of Jonathan Madden
<u>OX 024N/1b</u>	Appendices to Proof of Evidence of Jonathan Madden
<u>OX 024N/1c</u>	PowerPoint

### Written Objections

OX 025N Mrs Jean Dighton

## Written Representation

Rep/01 St Ebbe's New Development Residents' Association