

Regulation 25 Response

Didcot HIF 1
Appendix K Climate Change Position Statement

Oxfordshire County Council

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Quality information

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1. Introduction

- 1.1 This report has been produced in response to a request to provide a Climate Change Position Statement by the Local Planning Authority (LPA) , as set out in the Regulation 25 Request relating to the Didcot Housing Infrastructure Fund (HIF1) planning application (application ref: R3.0138/21). The Regulation 25 Request states:

“Please provide a Climate Change Position Statement which provides a summary of the measures embedded within the scheme to reduce climate effects as far as practicable along with details of additional measures that are proposed to be secured through condition if planning permission is granted in the interests of sustainable development. Reference should be made to the combined effects of travel behaviour, measures to reduce embodied carbon emissions and greenhouse gas emissions during the construction and operational phases, biodiversity enhancements and net gain, landscaping proposals, drainage and any other matters that affect the impact of the scheme on climate. The statement should also include the following:

- *Further information setting out how the development seeks to minimise the climate impacts of the development as far as is practicable.*
- *Further information setting out how the development would contribute to the aims and objectives of the draft Oxfordshire Local Transport and Connectivity Plan, which is a material planning consideration, including the overarching vision to deliver a zero-carbon transport network by 2040.*
- *Whilst it is welcomed that the proposal includes a segregated footway and cycleway along its length, it also increases capacity for private vehicles. Further information is therefore required to set out the measures the applicant intends to take and/or relies upon to encourage a modal shift from car travel to active and sustainable modes, and how these measures could be secured or relied upon as part of the planning application.*
- *Further information to demonstrate how active and sustainable travel modes (including bus) are prioritised over the use of the private vehicle, particularly given the absence of dedicated bus lanes or other bus priority measures.*
- *Further information about how the climate effects of the development would be monitored in the long term, and the measures that would be available to be taken by the applicant should the climate effects need managing/reducing in future. This could include physical alterations to the scheme and/or details of other powers available to the applicant (e.g., to restrict the use of the road to specific users or specific times etc).”*

- 1.2 This report seeks to address each line of the above request.

- 1.3 Reference to other documents submitted as part of the Didcot HIF 1 planning application should be made when reading this report, namely:

- Environmental Statement Volume I: Chapter 3 Assessment of Alternatives;
- Environmental Statement Volume I: Chapter 8 Landscape and Visual Impact;
- Environmental Statement Volume I: Chapter 9 Biodiversity;
- Environmental Statement Volume I: Chapter 14 Road Drainage and Water Environment;
- Environmental Statement Volume I: Chapter 15 Climate;
- Environmental Statement Volume II: Preliminary Landscape Masterplan, Sheets 1 to 19;
- Environmental Statement Volume III: Appendix 4.1 Outline Environmental Management Plan;
- Environmental Statement Volume III: Appendix 12.1 Outline Site Waste Management Plan;
- Environmental Statement Volume III: Appendix 14.1 Flood Risk Assessment;
- Biodiversity Net Gain Assessment (revised);
- Outline Landscape and Biodiversity Management Plan;

- The Transport Assessment; and
- General Arrangement Plans, Sheets 1 to 19.

2. Minimising climate impacts

Construction (embedded carbon)

- 2.1 For clarity, embedded carbon is considered to be 'indirect Greenhouse Gas (GHG) emissions embedded within construction materials, arising from energy used for their production as well as emissions arising from the transportation of materials and waste to and from the Site'. Section 15.9 Design, mitigation and enhancement measures, within Chapter 15 Climate of the Environmental Statement (ES), sets out the mitigation measures included to address embedded carbon emissions. These have been translated into Environmental Statement Volume III: Appendix 4.1 Outline Environmental Management Plan (OEMP) and the Environmental Statement Volume III: Appendix 12.1 Outline Site Waste Management Plan (OSWMP). The OEMP is, in effect, a draft Construction Environmental Management Plan (CEMP) and should be used as a basis to create a CEMP prior to construction of the Scheme. Similarly, the OSWMP should be used as a basis to create a Site Waste Management Plan prior to construction and would typically form part of the CEMP.
- 2.2 Mitigation measures embedded into the Scheme are listed below (see *green italic text*), along with additional clarification that was not previously included within the ES. It should be noted that currently, and at the point of submitting the ES, a Principal Contractor (PC) has not been appointed and it has not been confirmed if these measures are deliverable. However, these measures were suggested based on the professional experience of competent experts in the climate change field, whom also have experience of highways development and therefore, it was considered very likely that these measures could be delivered. Measures include:

- *The Principal Contractor (PC) will develop and implement a plan to reduce energy consumption and associated carbon emissions. This could include the consideration of renewable and/ or low or zero carbon energy sources and record percentage of savings implemented. Energy consumption and materials use will be recorded and reported on an ongoing basis during the construction phase.*

This could include a direct link to the national grid at site compounds, rather than the use of large diesel generators. The connection to the national grid could utilise a green energy tariff. Electric vehicles could be utilised on site, where the technology is available, for example electric vans, which could be charged at site compounds via a direct connection to site compounds. Battery powered generators could be used where more mobile sources of power are needed away from compounds, with these being charged at compounds. Additionally, a focus on reducing energy use could be adopted, for example reduced lighting in darker hours to safety critical areas of site compounds only. Motion activated lighting could be included in site offices, to reduce energy used to light empty rooms.

The requirement for the PC to implement measures to reduce emissions during the construction of the Scheme is set out in Table 3.3: Construction REAC table, of the OEMP (see requirement reference C-C1). If the Didcot HIF 1 planning application was granted permission by the LPA, a planning condition could be included as part of that permission that requires the REAC tables within the OEMP to be translated into a CEMP, which should then be submitted to OCC as the relevant authority prior to construction of the Scheme.

- *Where practicable, measures will be implemented to manage material resource use during construction including:*
 - *using materials with lower embodied GHG emissions and water consumption;*
 - *using sustainably sourced materials; and*
 - *using recycled or secondary materials.*

The PC should investigate using materials that are known to have lower embodied carbon emissions, for example lower carbon concrete which, depending on the supplier, includes recycled materials or is offset using an accredited carbon offsetting programme. OCC as applicant could request that a lower carbon concrete is used for all or part of the Scheme. It should be noted that there may be situations that require the use of other concretes, that are not a lower carbon alternative, where specific structural strength is required.

Additionally, where wood is going to be utilised, this could either be reclaimed wood where the end use allows (for example, recycled wood may not be appropriate for acoustic barriers, as these structures need to provide specific noise attenuation to allow them to function as intended), or a verified sustainable supplier could be used.

Chapter 15 Climate, Table 15.16 identifies that 83% of construction emissions are as a result of embodied carbon emissions from raw material use. Construction materials therefore represents the greatest opportunity to reduce overall carbon emissions of the construction phase.

- *Where possible, the use of local construction staff to minimize commuting distances.*

This would minimise GHG emitted during commuting. However, this requires a readily available supply of people with correct skills within the local area.

- *Use of well-maintained plant, and no idling of plant or vehicles when stationary.*
- *Use contractors/ suppliers with low emission fleet vehicles.*

A no idling policy could be implemented across the construction site by the PC. In addition, the PC could implement a policy to use plant machinery with the latest engine technologies only and could keep/ request records of plant service histories.

- *Waste management measures to reduce wastes could include:*
 - *Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;*
 - *Implementation of a 'just-in-time' material delivery system to avoid materials being stockpiled, which increases their risk of damage and disposal as waste;*
 - *Attention to material quantity requirements to avoid over-ordering and generation of waste materials;*
 - *Re-use of materials wherever feasible e.g. re-use of excavated soil for landscaping. Concrete will be taken off-site for crushing and re-use;*
 - *Segregation of waste at source where practical; and*
 - *Re-use and recycling of materials off-site where re-use on-site is not practical (e.g. through use of an off-site waste segregation facility and re-sale for direct re-use or re-processing).*

These waste measures could be implemented by the PC to reduce the amount of waste that is sent to landfill and increase the proportion of waste that is recycled.

- *During the design phase, opportunities to reduce waste include:*
 - *waste arisings will be prevented and designed out where possible;*
 - *opportunities to re-use material resources will be sought where practicable, such as the re-use of existing on-site lighting if in adequate condition; and*
 - *where re-use and prevention are not possible, waste arisings will be managed in line with the waste hierarchy.*

These measures could be taken in account when the construction phase is designed and planned.

- 2.3 The combination of these measures would likely reduce overall GHG emissions during the construction phase.

Operation

- 2.4 Mitigation measures embedded into the Scheme are listed below, during operation, along with additional clarification that was not previously included within the Environmental Statement (ES) (Section 15.9 Design, mitigation and enhancement measures, of Chapter 15 Climate) is provided below:

- *Lighting of new and improved sections of road within the Scheme will be along the footway/ cycleway facilities, crossings (parallel and toucan), roundabout junctions and their immediate approaches.*

Lighting has been limited to safety critical sections of the Scheme. The River Thames crossing and the Science bridge will not be lit. This decision was taken to reduce visual impacts at night on

surrounding receptors. This will also help reduce the overall operational energy requirement, compared to a fully lit scheme. Furthermore, this reduces the need for raw materials such as steel and copper wire compared to a fully lit scheme.

Where existing lighting is to be utilised, for example on the A4130, these units will be converted to use LED lighting thereby reducing the energy requirements of these existing lighting columns.

All lighting will be dimmed during dark, later hours to reduce the energy demand of the Scheme.

- *Energy efficient road lighting and technology will be implemented to minimise operational energy consumption.*

LED lighting technology will be installed in all new lighting columns. This will likely reduce operational energy requirements compared to older non-LED lighting stock.

- *Encouragement of low or carbon neutral forms of transport through the construction of additional segregated and shared cycle/ footway.*

The scheme includes high quality segregated and shared cycleway/ footway along the entire length of the scheme designed to the standards and guidance set out in Local Transport Note (LTN 1/20). , These facilities will encourage walking and cycling across the area and will encourage less confident cyclists to make more journeys by bicycle. Additionally, the Scheme will link to existing Public Rights of Way, such as the Thames Path and National Cycle Network (NCN), and will provide additional modal options for non-motorised users.

The Scheme will deliver 18 new bus stops which will allow for new routes to be proposed once the housing and employment sites come forward. The Scheme also removes traffic off existing bus routes which will improve public transport journey time reliability within the surrounding villages. This may also lead to an increase in frequency of the existing routes. More reliable and frequent bus services would make travel by bus more attractive.

Landscape and ecology mitigation, and carbon

- 2.5 Chapter 15, Table 15.16 identifies that land clearance (i.e., loss of a carbon sink) equates to approximately 3% of total construction carbon emissions. Vegetation clearance is unavoidable with any large development. Through design development the Scheme's design has sought to reduce vegetation clearance. Chapter 3 Assessment of Alternatives, paragraph 3.4.1 outlines that the design of the A1430 was amended to reduce impacts on the existing vegetation located adjacent to the westbound carriageway.

"During the initial design stages of the Scheme design development, it was proposed to remove and level the existing ditch (currently located south of the A4130) containing hedgerows and trees and provide replacement hedgerows and trees along the southern boundary of the Scheme. However, in later design iterations it was decided that the existing ditch will be retained and enhanced, consequently, reducing the Scheme's impact on biodiversity loss while contributing to biodiversity net gain."

- 2.6 Although not explicitly stated, this amendment to the Scheme design would have also marginally reduced the impact of the Scheme on existing carbon sinks by retaining this existing belt of hedgerow and trees.
- 2.7 The Scheme has also been designed to avoid notable trees. For example, Chapter 3 Assessment of Alternatives, paragraph 3.7.4 describes how the Scheme was amended to avoid a category A Oak tree. Whilst this was primarily done to protect the biodiversity value of this tree, this will also ensure that this tree remains as a valuable carbon sink.

Biodiversity Net Gain

- 2.8 The Biodiversity Net Gain report submitted with the planning application set out that the Scheme would achieve plus 10% net gain in relation to hedgerows and habitats but does not achieve 10% net gain in relation to river (riparian) units, although a net loss is not predicted. The report states *"Based on the current proposals and outlined assumptions, the Scheme is predicted to result in an overall net gain of approximately 11.11% of habitat units, 13.37% of hedgerow habitats and 1.26% linear (river) habitat units"*.
- 2.9 Following amendments to proposed landscape and ecology planting, the Scheme is anticipated to result in an overall on-site net gain 20.00% of habitat units, 40.90% hedgerow units and 1.26% of river units, once habitats have matured. These predicted net gains in hedgerows and habitat units which will provide

flora that in the long-term will sequester carbon, although it is recognised that these habitats would need time to mature before substantial sequestration will take place.

Flood risk

- 2.10 A Flood Risk Assessment (FRA) was produced and included as Appendix 14.1 of the Environmental Statement. This principally assessed the impact of the Scheme on the Moor Ditch, the River Thames and two unnamed tributaries of the River Thames. The FRA presents the results of computer modelling, which predicts how the Scheme, taking account of its design including drainage ditches and ponds, will interact with watercourses and their floodplains with climate change taken into account. Substantial consultation was undertaken with the Environment Agency, commencing late 2019, to agree the parameters of the flood model. The Environment Agency agreed the parameters of the flood model prior to the submission of the planning application.
- 2.11 The Environment Agency requested that a climate change allowance of 35% should be added to a 1% Annual Exceedance Probability (AEP) storm used to assess fluvial flood risk and design appropriate mitigation for the Scheme. This is the “Upper End” allowance for the Thames River Basin District anticipated for 2040 to 2069. The 35% climate change allowance is the “Higher Central” value for the 2080s epoch, meaning there is 70% chance that the increase in flows from climate change would be less than 35% in this region.
- 2.12 The 70% climate change allowance is the “Upper End” value anticipated for the 2080s epoch and means that there is a 90% chance that the increase in flows from climate change would be less than 70% in this region. The upper end allowance of +70% has been used to test the sensitivity of the Scheme design to a severe climate change scenario. The 2080’s epoch reflects the potential life span of the Scheme.
- 2.13 It should be noted that during the course of preparing the planning application, the Environment Agency revised their climate change allowances. These revised climate change allowances are lower than the old allowances used within the FRA, at 26% and 41%. However, due to time constraints it was decided that the old 35% and 70% allowances would still be used. These allowances are more pessimistic than the revised allowances and impose stricter parameters on the Scheme, as a consequence the Scheme has more flood attenuation capacity in-built than is necessary under the current allowances.
- 2.14 A FRA technical note has been produced following an Environment Agency objection as part of the Regulation 25 Request. The Regulation 25 Response document sets out how these points have been addressed and the FRA technical note is provided within the ES addendum.
- 2.15 The FRA technical note states that on further examination of the model results and the design for mitigation the conclusions are:
- Based on a detailed analysis of time series data model results, mass balance and calibration and sensitivity tests from original model, it is recommended that water level differences are outside ‘model tolerance’ when greater than +/-20mm;
 - On this basis, there is one area where increases in modelled flood level are predicted to be greater than 20mm, immediately adjacent to the proposed Sutton Courtenay Roundabout;
 - This impacted parcel of land is to be subject to a compulsory purchase order to enable management of the residual increase in flood levels, ensuring no impacts to third parties or users of the road; and
 - Level for Level storage compensation design creates a net gain in flood plain storage at each plane height (mAOD) and is designed for the 1% AEP plus 35% climate change event therefore providing storage over and above the minimum requirements.

Vulnerability to climate change

- 2.16 Chapter 15 of the ES outlined how the Scheme has been designed to take account of the Scheme’s vulnerability to changing climate patterns. Vulnerability to climate change was defined as *“the resilience of the Scheme to climate change, including how the Scheme design has been adapted to take account for the projected impacts of climate change”*.
- 2.17 The assessment looked at three factors of a changing climate, extreme weather events (which also includes fog/lightning and cold temperature/ice), temperature and precipitation. The assessment scoped

out sea level rise as the Scheme is not located near to the coastline and wind as the impacts of wind in the surrounding environment are likely to be no worse relative to the existing conditions.

2.18 Chapter 15 identified the climate baseline for the Site through reviewing climatic data from 1970 to current day where available. Overall, this identified that the Site would see increasing summer and winter temperatures, decreasing summer rainfall and increasing winter rainfall.

2.19 Mitigation measures in relation to climate change vulnerability have been embedded into the Scheme. During construction, the PC will develop and implement a plan to prevent or reduce the likelihood of climatic hazards affecting construction staff and assets. This would include:

- The PC shall improve the resilience of the Scheme to climate change through a range of design and material specification measures including where practicable: the procurement and use of construction materials with superior properties (such as increased tolerance to fluctuating temperatures), and incorporation of current road design standards and future climate change allowances. Due consideration will be given to assessments such as the FRA.

2.20 During operation, mitigation measures include:

- Climate change allowance of 35% has been added to the 1% annual exceedance probability (AEP) storm used to assess fluvial flood risks and the design of the Scheme drainage systems.
- With reference to fog/lightning and cold temperature hazards Early Contractor Involvement confirmed, "All materials used will be Highway Authorities Product Approval Scheme (HAPAS) approved so those things are taken into account through certification". The HAPAS Certification Scheme was set up for any manufacturers and installers of products for use in Highways and related areas. HAPAS Certification schemes cover product sectors that include, but not limited to, high friction surfacing systems, thin surfacing, crack and patch repair systems, and manhole reinstatement systems.
- The structures, including the Didcot Science Bridge, the Appleford Sidings Bridge and the River Thames Crossing, will be designed for the effects of wind loading and thermal movement in accordance with relevant Eurocodes.
- Suitable earthing and bonding design (mitigation against lightning) will also need to be carried out at detailed design.

3. Oxfordshire Local Transport and Connectivity Plan

Introduction

- 3.1 The Oxfordshire Local Transport and Connectivity Plan (LTCP) was adopted by OCC in July 2022. The Plan's title has been extended to include connectivity to better reflect OCC's strategy for digital infrastructure and for connecting the whole county. The LTCP covers the time period to 2050. The LTCP is OCC fifth local transport plan and replaces the previous Local Transport Plan (LTP4) which was adopted in September 2015.
- 3.2 The LTCP sets out OCC's long term vision for transport in the county and the policies required to deliver this. It will help shape OCC's decisions on how to manage transport and the types of schemes that will be implemented to achieve the Plan's objectives.

Zero-Carbon Transport Network and Key Policies

- 3.3 The LTCP aims to deliver a zero-carbon Oxfordshire transport system by 2040. OCC's approach to decarbonisation is by primarily seeking to reduce unnecessary private vehicle use and increasing the proportion of trips made by walking, cycling, public and shared transport.
- 3.4 The policies set out in the LTCP outline the approach to achieving this.
- 3.5 Key policies relevant to the Proposed Development are:
- **Policy 1** – OCC will develop, assess and prioritise transport schemes and policies according to the following transport user hierarchy:
 - Walking (including running and mobility aids)
 - Cycling and riding (bicycles, non-standard cycles, e-bikes, cargo bikes, e-scooters and horse riding)
 - Public transport (bus, scheduled coach and rail)
 - Shared vehicles (taxis, car clubs and carpooling)
 - Motorcycles
 - Other motorised modes
 - **Policy 2** – OCC will develop comprehensive walking and cycling networks that are attractive to the preferences and abilities of all residents in all towns. All new walking and cycling schemes will be designed according to the updated Oxfordshire Cycle Design Standards.
 - **Policy 7** – OCC will ensure that improvements to cycling and walking networks and access to green infrastructure are supported by community activation measures that enable the whole community and particularly those with greatest need to benefit from these improvements and to become more active and for healthy day-to-day behaviours to become the norm.
 - **Policy 9** – OCC will require transport plans and infrastructure schemes to deliver health benefits and to mitigate any negative impacts by:
 - a. Requiring all major schemes or plans where potential health issues are likely to arise, to screen for possible health and wellbeing impacts.
 - b. Requiring a Rapid or Full HIA to be submitted for larger-scale infrastructure proposals.
 - **Policy 15** – OCC will adopt the vision zero approach, which seeks to eliminate all fatalities and severe injuries on Oxfordshire's roads and streets, to have safer, healthier, and more equitable mobility for all..

- **Policy 17** – OCC will consider the needs of equestrian users in roads and highways strategies and planning as well as operations. Oxfordshire County Council will continue to embed Aim 5 of the Strategy for the Horse Industry in England and Wales into relevant guidance and decision-making processes in order to improve safety, network connectivity and network quality for equestrians.
- **Policy 18** – OCC will:
 - Work in partnership with bus operators, District and City councils to maintain a commercially sustainable and comprehensive network of services which is accessible to as many residents as possible.
 - Explore opportunities to accelerate the transition to a zero-emission bus fleet, building on work completed for the Zero Emission Bus Regional Areas (ZEBRA) scheme.
 - Seek to make the bus a natural first choice through development of infrastructure and network management measures which give priority over the private car and improve journey speeds.
 - Set challenging targets for improving bus use, customer satisfaction and bus journey times and review them regularly.
 - Ensure that all new strategic development is designed for bus access and provides suitable funding for high quality services and infrastructure.
 - Work with operators to improve the provision of bus information and multioperator ticket schemes.
 - Work with operators to explore measures to improve affordability.
 - Ensure bus services are accessible and support community transport to address unmet local transport needs (further information in community transport policy).
 - Work to improve personal security on public transport including taking account of recommendations from the Transport Champions for Tackling Violence Against Women and Girls.
- Work to improve bus services in rural areas including consideration of flexible services where relevant. **Policy 27** – OCC will:
 - Follow the embodied carbon reduction hierarchy in our decisions about transport infrastructure.
 - Take into account embodied, operational and user emissions when assessing a potential infrastructure project and its contribution to Oxfordshire's carbon budget and to a net-zero transport network by 2040.
 - Require a science-based percentage of embodied carbon reduction from baseline in infrastructure projects.
 - Use PAS 2080 to assess, manage and minimise carbon emissions in transport infrastructure projects throughout the project lifecycle, including maintenance.
 - Any offsets needed to achieve net-zero must be certified, additional and deliver local benefits.
 - Work with contractors to reduce materials, source local and recycled materials, use less carbon-intensive transport options and building methods, and generate less waste.
- **Policy 30** – OCC will embed the protection, maintenance and enhancement of Green Infrastructure (GI) into relevant guidance and decision-making processes in order to improve connectivity of the GI network, its environmental and community value.
- **Policy 31** – OCC will manage the network through an integrated approach, utilising emerging technologies to maximise its ability to tackle congestion issues in the county.
- **Policy 32** – OCC will manage, maintain, and operate the network to the advantage of the Council's Corporate Priorities. OCC will also manage and maintain the highway network fairly and equitably without the undue preclusion or disadvantage of any individuals or groups.

- **Policy 35** – OCC will investigate demand management measures, where appropriate, in order to discourage private vehicle use, engaging with key stakeholders during the development of any schemes.
- **Policy 36** – OCC will:
 - Only consider road capacity schemes after all other options have been explored.
 - Where appropriate, adopt a decide and provide approach to manage and develop the county's road network.
 - Assess opportunities for traffic reduction as part of any junction or road route improvement schemes.
 - Require transport assessments accompanying planning applications for new development to follow the County Council's 'Implementing 'Decide & Provide': Requirements for Transport Assessments' document.
 - Promote the use of the 'decide and provide' approach in planning policy development to support site assessment

Policy Assessment

3.6 The following section sets out an assessment of the Proposed Development against the above policies.

Walking and Cycling

3.7 The following policies are considered relevant to the consideration of walking and cycling:

- Policy 1
- Policy 2
- Policy 7

3.8 The Proposed Development is a strategic highway network development which has been identified in the South Oxfordshire District Council (SODC) Local Plan and Vale of White Horse District Council (VoWHDC) adopted Local Plans. As such, one of the main objectives of the Proposed Development is to provide additional highway capacity to unlock the development identified within the aforementioned Local Plans (see Planning Statement for further details).

3.9 Accompanying the highway element of the Proposed Development is a comprehensive suite of interventions which will have a positive impact on non-motorised user travel. This includes providing additional and improved crossing points for all non-motorised users modes which will help to reduced severance caused by the Proposed Development. The Proposed Development has been designed in line with LTN 1/20 Guidance, ensuring that priority is given to pedestrians and cyclists over side roads which connect to the main network. Further detail on the non-motorised user provision within the Proposed Development can be found within the Design and Access Statement.

Healthy Place Shaping

3.10 The following policies are considered relevant to the consideration of healthy place shaping:

- Policy 9

3.11 The planning application is supported by an Environment Statement and Chapter 13 considers Population and Health, specifically, the impact the Proposed Development could have on noise and air quality, access to community land and assets and access to walking, cycling and horse-riding infrastructure. During operation, the Proposed Development is expected to result in the following significant residual effects:

- North-West of Valley Park and Valley Park Strategic Housing Sites and the former Didcot A Power Station : moderate beneficial effect as a result of improved access and connectivity to surrounding area.
- Community facilities across the study area: moderate beneficial effects as a result of improved connectivity through reduced local traffic flows.

- Route between the Valley Park development site and Southmead Industrial Estate: moderate beneficial effect as a result of new walking, cycling and horse-riding infrastructure which will reduce the length of journey by approximately 900m.
 - Route between Culham Station and Culham Science Centre: moderate beneficial effect as result of new walking, cycling and horse-riding infrastructure which will reduce the length of journey by approximately 200m.
- 3.12 A rapid Health Impact Assessment, or Health Impact Assessment has not been submitted with the planning application as it wasn't a requirement pre-submission. It is considered that the health assessment included within the Environmental Statement is sufficient given its scope was agreed with the LPA as part of the EIA Scoping process.

Road Safety

- 3.13 The following policies are considered relevant to the consideration of road safety:
- Policy 15
 - Policy 17
- 3.14 Stage 1 Road Safety Audits of the Proposed Development were carried out and submitted as Appendix D of the Transport Assessment. The audits have not raised any specific issues relating to road safety.
- 3.15 With regard to equestrians, Walking, Cycling and Horse-Riding Assessments (WCHAR) were submitted as Appendix A of the Transport Assessment. OCC's Public Rights of Way Officer has reviewed the assessments and no specific comments have been raised in relation to the assessments.

Public Transport

- 3.16 The following policies are considered relevant to the consideration of public transport strategy:
- Policy 18
- 3.17 The Proposed Development has been designed to accommodate the local bus fleet and therefore enable bus operators to provide a more reliable service via a more free-flowing transport network. Through providing a more reliable bus service this will give residents the opportunity to make bus travel the natural first choice (see also Section 4).

Environment and Carbon

- 3.18 The following policies are considered relevant to the consideration of environment and carbon:
- Policy 27
 - Policy 30
- 3.19 The planning application is supported by an Environment Statement and Chapter 15 considers the Proposed Development's impact on climate. The assessment considers the greenhouse gas emissions from the Proposed Development against the relevant carbon budgets which is standard practice. The Proposed Development's net emissions of the UK's Domestic Transport Budget Allocation are:
- 4th Carbon Budget (2023-2027): 0.03804%
 - 5th Carbon Budget (2028-2032): -0.00177%
 - 6th Carbon Budget (2033-2037): -0.00324%
- 3.20 The above demonstrates that during the 4th Carbon Budget, when the Proposed Development will be constructed the Development will contribute 0.03804% to the carbon budget. Once operational, the Proposed Development will remove carbon emissions from the 5th and 6th carbon budgets.
- 3.21 With regard to GI, landscaping has been embedded into the design of each part of the Proposed Development. Key design mitigation includes:
- A4130 Widening;

- A fair section of the existing ditch and hedgerow on the south side of the A4130 to the west of Didcot has been retained within the proposed central reservation, with the westbound carriageway constructed off-line to the south to maintain landscape structure, integrate the road, and provide screening of eastbound traffic. For pedestrians and cyclists this also provides separation between the live carriageways;
- The proposed landscape planting seeks to integrate the A4130 Widening by re-planting trees and shrubs alongside the south side of the new westbound carriageway. This will delineate segregation between NMUs and vehicles, restore vegetation patterns and strengthen the landscape structure where practicable; and
- There are strategic linear planting blocks of trees and shrubs within the landscape design, which once established will help screen both infrastructure and traffic, particularly around the junctions.
- Didcot Science Bridge;
 - The southern embankment of the Didcot Science Bridge has been designed to allow for new grassland and tree planting at the base of the embankment, that once established will reduce the perceived form of the earthworks and structure in views from Great Western Park to the south, and aid in its integration with the existing landscape features on the south side of the A4130;
 - To the south of the Great Western Railway Mainline, vegetation alongside Meadow Brook will be retained as far as practicable, with proposed enhancements to the watercourse; and
 - The existing hedgerow on the north side of the A4130 Northern Perimeter Road as it passes Southmead Industrial Estate will be largely retained to maintain landscape structure and provide screening of traffic.
- Didcot to Culham River Crossing
 - The landscape design seeks to integrate the Scheme by planting trees, shrubs, and hedgerows alongside the road including enhancing woodland blocks to restore vegetation patterns and strengthen the landscape structure where practicable;
 - Substantial areas of proposed planting are proposed, both on the River Thames bridge in the form of a sedum blanket as well as the approaches to the Appleford Railway Sidings crossing for the purposes of landscape integration and to soften the aesthetics of these structures;
 - The noise barrier located on the Appleford Railway Sidings crossing will include climbing vegetation, this will help to screen this element and assimilate it into the landscape;
 - Small-scale deciduous woodland blocks using locally characteristic species are proposed around the Sutton Courtenay Roundabout to integrate the new infrastructure;
 - There is a proposed link between the Scheme cycleway/footway and the Thames Path National Trail, enhancing landscape accessibility and recreation opportunities;
 - Small-scale deciduous woodland blocks using locally characteristic species are proposed to the north bank of the River Thames to reduce the perceived scale of the embankment approach to the viaduct from the A415;
 - There is small-scale arable reversion to grassland proposed alongside the River Thames and at the flood compensation areas, along with riparian planting to the banks of the River Thames to enhance biodiversity; and
 - Hedges, species rich grassland and grass interplanted with bulbs alongside strategic tree planting using locally characteristic species are proposed around the Abingdon Roundabout to integrate the new infrastructure.
- Clifton Hampden Bypass
 - The Scheme at the Culham Science Park roundabout creates a landscape gateway feature which gradually blends into a landscaping strategy which seeks to integrate the Scheme into the wider landscape. Re-planting trees and hedgerows alongside the road to restore vegetation patterns and strengthen the landscape structure where possible, particularly to the north of Clifton Hampden where extensive planting is proposed to reduce a perception of fragmentation of the vegetation patterns;

- The potential visual intrusion of the Scheme will be reduced through the landscape design, with substantial planting of woodland edge scrub and low level planting at the Culham Science Park roundabout and gradually becoming more heavily wooded to the east as trees and shrubs are used to screen both infrastructure and traffic, particularly around junctions ;
- Noise barriers along this part of the Scheme will include climbing vegetation on the façade that faces road users, this will help to screen these elements and assimilate them into the landscape;
- The landscape design includes improvements to grassland adjacent to ditches and field margins in the landscape north of Clifton Hampden for biodiversity and landscape integration benefits;
- The drainage system utilises green infrastructure in the form of swales and retention basins to convey and store water, which have secondary benefits for nature and biodiversity;
- The landscape design to north of Clifton Hampden includes new recreation routes alongside retaining existing public rights of way, to enhance accessibility and recreation;
- A wide tree belt is proposed on the north side of the Clifton Hampden Bypass, north of Clifton Hampden to visually screen traffic from the PRow between the Clifton Hampden Bypass and Nuneham Courtenay to the north; and
- The B4015 connection into the north of Clifton Hampden has been moved west to retain a distinctive mature oak tree in the verge of the existing B4015. For details of tree protection and removal refer to the Arboricultural Impact Assessment (Ref 8.1) included with this ES.

3.22 In terms of biodiversity net gain, the Scheme is anticipated to result in an overall on-site net gain 20.00% of habitat units, 40.90% hedgerow units and 1.26% of river units, once habitats have matured. The following landscape and biodiversity elements are proposed to achieve the biodiversity net gain:

- Grassland with bulbs;
- Low growing species-rich grassland;
- Native broad-leaved woodland;
- Native woodland edge;
- Native shrubs;
- Native hedgerows;
- Hawthorn planting;
- Species rich grassland with intermittent trees;
- Individual trees;
- Riparian planting, including along the River Thames;
- Marsh and wet grassland, including within the Hanson Restoration area; and
- Sedum blankets on the River Crossing and Abingdon Sidings Bridge.

Network, Parking and Congestion Management

3.23 The following policies are considered relevant to the consideration of network, parking and congestion management:

- Policy 35.
- Policy 36.

3.24 The Proposed Development has been through a robust and iterative option and design process, which can be found in the Options Appraisal Report (OAR) part 1 and 2 (Appendix A of the Design and Access Statement). As part of the appraisal, the options' impacts on travel times, delays and cost of travel were assessed, as well as the impact on the day to day variability in journey times.

3.25 Through providing a more reliable road network, public transport reliability will improve which will in turn provide the local community with a genuine alternative to the private vehicle use.

- 3.26 Further details regarding the Scheme's impacts on the local highway network can be found in the Transport Assessment.

4. Modal shift and active/ sustainable travel modes

Summary

- 4.1 The Scheme both directly delivers and indirectly enables a significant number of new and/or improved walking and cycling routes in the area. The provision of additional and improved NMU routes and crossing points will help to reduce the existing severance caused by the Great Western Mainline and River Thames. Connections to public rights of way will be provided, as well as safe access to and from new bus stops. This will help to stimulate modal shift away from the private motor car, particularly for commuting purposes for employment and education, but also for important access to amenities such as retail and healthcare, and for leisure trips. The potential future NMU schemes that could link to the Scheme may be delivered by OCC, housing or employment developers, or other bodies. There may be other schemes identified through the planning application processes for other developments, or through the Didcot Local Cycling and Walking Infrastructure Plan (LCWIP) which has yet to be undertaken.
- 4.2 There are currently poor opportunities for bus routes/services to offer good journey time reliability north / south in this area due to the severance created by the River Thames and the historic road network. Journey time data, provided in the Transport Assessment for the Scheme, sets out that the Scheme will significantly improve journey times over the existing river crossings at Culham Cut / Sutton Bridge and Clifton Hampden Bridge. Bus routes that use these bridges in the future, currently the 95 and 33 services, would benefit from the improved journey times and reliability.
- 4.3 The South Oxfordshire Infrastructure Delivery Plan (IDP) includes requirements for several new bus routes to support planned growth. It is the intention for two of these routes to use the new Didcot to Culham River Crossing, and as such the future bus network has been planned assuming the new road is in place. Without the new road it is unlikely the new bus routes could be delivered; these routes would take longer and be less reliable, increasing operating costs, while at the same time being less attractive to use, suppressing revenue. It is unlikely the proposed new routes would be viable without the new road, which would cause several strategic new developments to be more car dependent and less acceptable in planning terms.
- 4.4 The traffic modelling (see the Transport Assessment) indicates that without the Scheme in place the traffic associated with the Local Plan housing and employment growth would result in congestion throughout the network in and around Didcot by 2034. The Scheme improves overall conditions for existing users of the transport network and helps to accommodate committed local plan growth in a sustainable way as part of an overall balanced transport strategy.
- 4.5 The Scheme will significantly improve the accessibility to the walking, cycling and the bus network, as well improve the journey quality, times and reliability for these users within the Scheme extents. Analysis undertaken as part of this Transport Assessment does not indicate any significant adverse effects on the highway, walking, cycling, horse-riding or public transport networks as a result of the Scheme.
- 4.6 The Scheme is part of balanced transport strategy, reducing congestion in some areas, providing high quality walking and cycling routes to engender modal shift away from the private motor car, and enables new routes and improved journey times for buses.

Pedestrian and cycle routes delivered and enabled by the Scheme

- 4.7 As mentioned above, the Scheme both directly delivers and indirectly enables a significant number of new and/or improved walking and cycling routes in the area. This will help to stimulate modal shift away from the private motor car, particularly for commuting purposes for employment and education, but also for

important access to amenities such as retail and healthcare, and for leisure trips. The journey to work mode share for bicycles in Didcot is only 4.7%. The following section of this report aims to highlight some of the significantly improved routes the Scheme delivers / facilitates but does not provide an exhaustive list.

Origin: Great Western Park / Valley Park / North West Valley Park / Existing Didcot

Destination: Milton Park (Enterprise Zone)

- 4.8 The existing NMU route is on the narrow, shared use facility on the southern side of the A4130, with no significant buffer from the carriageway. This is not an attractive route, due to the narrow width and wind buffeting experienced by passing vehicles, particularly HGVs. Surveys presented in the WCHAR illustrate this, with a low number of just over 600 cyclists (two-way) counted over a 7-day period at the A4130 near Cow Lane. The scheme directly delivers a significantly improved route along the southern side of the A4130, addressing the above issues, providing separation from the carriageway with separate pedestrian and cycle facilities. This route is also likely to be used by residents from central / southern Didcot, especially when the Valley Park site is constructed which includes NMU infrastructure on the north-south spine road. Additionally, this is likely to be used by residents from Harwell Village, who would access it from Valley Park either from Didcot Road and along the spine road, or along Cow Lane and then up the spine road.

Destination: Culham Science Centre

- 4.9 The existing NMU route is neither convenient nor direct, and for large sections has no NMU facilities which requires NMUs to use the carriageway. For many people this is not attractive, as shown by the low census mode share percentage. The route would include the A415, which the WCHAR surveys show a low number of cyclists, just over 800 (two-way), counted over a 7-day period. The Scheme delivers a convenient, high quality NMU route along the A4130, over the Great Western Main Line railway, north over the River Thames, and directly to Culham Science Centre (CSC). For comparison purposes, approximate routes for cycling to CSC from the junction of Cow Lane/A4130 in the centre of the Valley Park site were measured, using existing facilities. These ranged from 8.97 km to 10.29 km without the Scheme and required the use of carriageway in some sections, and narrow shared-use facilities. With the Scheme, the equivalent route is approximately 7.54 km, with high-quality off-carriageway facility facilities for the full length.
- 4.10 The same improved route to CSC is accessible to residents of existing Didcot from Collett Roundabout, for example by using the NCN5 from Station Road to access Southmead Industrial Estate.

Origin: Land adjacent to Culham Science Centre (residential)

Destination: Milton Park Enterprise Zone

- 4.11 The future housing site allocation in the adopted South Oxfordshire District Council (SODC) Local Plan 2035 would be provided with high quality and direct NMU routes to a significant number of destinations. Without the Scheme, the existing routes are not conducive to promoting modal shift as they require a large portion of on-carriageway on narrow and congested roads.
- 4.12 The Scheme provides a route to Milton Park that is approximately 1 km longer than the existing route through Sutton Courtenay, but is off-carriageway for the full length as opposed to the existing route which is predominantly on carriageway. Additionally, the traffic reductions the scheme enables through Sutton Courtenay would make the existing on-carriageway route more pleasant for cyclists who wish to use it.

Destination: Didcot Centre / Didcot Railway Station

- 4.13 The Scheme ties in with Collett Roundabout on the A4130 Northern Perimeter Road, which is a short distance from NCN5 inside Southmead Industrial Estate. For comparison purposes, approximate routes for cycling from the proposed housing site to the NCN5 route inside Southmead Industrial Estate (for onwards existing connections to Didcot, Railway Station, etc.) were measured using existing facilities. Without the Scheme, the likely route is approximately 7.44 km long, with a large proportion of on-carriageway cycling. With the scheme, this is reduced to approximately 3.97 km, all off-carriageway except a small section inside Southmead Industrial Estate.

Origin: Appleford

Destination: Culham Science Centre

- 4.14 The existing routes via Clifton Hampden or Culham are neither convenient nor direct (approx. 5.68 km and 5.62 km respectively), and require on-carriageway cycling, using narrow shared-use facilities, some use of bridleway (to Long Wittenham). With the Scheme, the route is approximately 3.67 km, formed of high-quality off-carriageway provision (on-carriageway from the western built-up edge of Appleford into the village).

Destination: Milton Park Enterprise Zone

- 4.15 As above for Land adjacent to Culham Science Centre, Appleford also benefits from significantly improved NMU routes to Milton Park.

Destination: Didcot Centre / Didcot Railway Station

- 4.16 As above for Land adjacent to Culham Science Centre, Appleford also benefits from significantly improved NMU routes to Didcot Centre / Railway Station (Appleford has a railway station, however not all trains stop there).

Origin: Berinsfield, Burcot, Clifton Hampden

Destination: Various – Didcot, Milton Park etc

- 4.17 The significant reduction in traffic flow along the A415 through Burcot as a result of the Scheme creates improved conditions for future NMU schemes to be implemented from Berinsfield towards Abingdon/Didcot etc.
- 4.18 The existing shared-use facility will join the Scheme near Culham Science Centre, which then enables village residents to access the Scheme NMU facilities for onwards journeys to Didcot and Milton Park etc, as described in the above sections. With other potential future schemes as described below, this also includes onwards connections to Abingdon and Oxford.

Origin: Various – Didcot, Valley Park, Appleford, Berinsfield, etc.

Destination: Abingdon, Oxford

- 4.19 The scheme NMU facilities are designed to tie into the future housing proposal at land adjacent to Culham Science Centre.
- 4.20 With a new future NMU bridge over the River Thames into southeast Abingdon provided by that site, and other NMU schemes currently being worked on between Abingdon and Oxford via Radley and Kennington, the Scheme NMU facilities will form the missing link between a predominantly off carriageway cycle route from Oxford City Centre to Didcot. Using sections of NCN5 and 544 in Didcot, this then extends the route from Oxford to Harwell Campus and beyond.

Origin: Milton Heights (residential)

Destination: Various - Milton Park Enterprise Zone (employment) / Didcot Centre / Didcot Railway Station / Culham Science Centre

- 4.21 Another scheme is being progressed by OCC to deliver an NMU bridge over the A34, south of Milton Interchange. This would connect with the Scheme at the new Backhill Roundabout on A4130, enabling onwards journeys.

Active travel priority measures

- 4.22 There are a number of pedestrian/ bicycle crossings located along the length of the Scheme. To cross the mainline of the Scheme or another major road junction, generally a controlled crossing is required. These can be formal signalised crossing that give priority to non-motorised users when requested through the use of roadside controls. Alternatively, and where appropriate (generally dictated by predicted traffic speeds and volumes), parallel crossings which give immediate priority to non-motorised users, have been included to ensure ease of crossing and to allow non-motorised journeys to continue unhindered.

- 4.23 Describing the priority crossing facilities from west to east, a non-motorised user using the shared facilities to cross the proposed Backhill roundabout (south of the roundabout), would have access to two raised parallel crossings, meaning their crossing would be unhindered by traffic. A similar facility would be provided at the Science Bridge roundabout. Two-stage signal crossings are provided across the dual carriageway sections of the route, these two-stages are in-line to make them more attractive to NMUs.
- 4.24 Moving north-east, after crossing the Science Bridge the shared non-motorised facilities shift from south of the road to north of the road, via parallel crossings at multiple locations over the mainline to improve convenience to NMUs. Continuous segregated pedestrian and cycle facilities are proposed over the accesses along the Science Bridge Link Road, giving priority to non-motorised users over those using these access roads. Further east, a raised parallel crossing is proposed to enable a crossing of the Collett roundabout southern arm. A toucan crossing is proposed to the eastern arm.
- 4.25 Moving north from the Collett roundabout, two parallel crossings in close proximity will give non-motorised users unhindered access across the Scheme mainline. Further north, a toucan crossing is provided to allow non-motorised users to cross the mainline and allow a journey along Portway Road.
- 4.26 Further north, the shared pedestrian/ bicycle facilities meet with the B4016, here a raised parallel crossing is proposed which will give priority to non-motorised users.
- 4.27 At the Sutton Courtenay roundabout, the northern arm of the roundabout (i.e., before entering the river crossing viaduct) would be crossed via a toucan crossing. Users of the shared facilities on the eastern side of the road, will not have to cross the Scheme mainline and would continue unhindered across the river.
- 4.28 At the Abingdon roundabout, users of the shared facilities would be able to continue east, towards Clifton Hampden via the shared facilities and will not have to cross the Scheme mainline. A toucan crossing is provided to allow a crossing of the Scheme mainline. At the northern arm of the roundabout, a raised parallel crossing is provided to allow unhindered access across the roundabout to the north.
- 4.29 At the Culham Science Centre (CSC) roundabout, there are a number of shared use footways and segregated footway/ cycleways. At every road entrance into the CSC, a raised parallel crossing is proposed, allowing unhindered access across these roads for non-motorised users. Users of the shared facilities on the southern side of the A415 travelling towards Clifton Hampden would not need to cross the Scheme mainline, they would continue down the current alignment of the A415, which would be closed to through traffic and continue to Clifton Hampden. A traffic-free link north to the bypass alignment would allow non-motorised users to cross the mainline of the Scheme via a toucan crossing. This would give access to the shared facilities that extend further east.
- 4.30 Further east, at the secondary access point for the CSC a raised parallel crossing would be provided allowing non-motorised users to cross this road unhindered. The proposed shared facilities would end at the Scheme's eastern extent.
- 4.31 A non-motorised user travelling from the Scheme's furthest south-western extent, near Milton Gate Junction, to its furthest north-eastern extent (north of Clifton Hampden) would only be required to use two toucan crossings; once at the access point to the Valley Park development and once east of the CSC roundabout. There are a number of smaller roads that adjoin the Scheme and form T-Junctions with it. However, given the recent changes to the Highway Code, which gives pedestrians and cyclists travelling ahead, the right of way over turning vehicles at junctions, non-motorised users should be able to cross these junctions unhindered.

Public Transport Impact

- 4.32 As part of the Scheme, the following new, fully accessible bus stops are proposed
- Four bus stops (two eastbound and two westbound) along the A4130, east of Milton Gate junction;
 - Four bus stops (two eastbound and two westbound) as part of the Didcot Science Bridge section;
 - Six bus stops (a pair on the A4130 to the east of Collett Roundabout, a pair at the southern end inside the future employment site, and a pair near Appleford) as part of the River Crossing section; and

- Four bus stops (a pair at Culham Science Centre and a pair north of Clifton Hampden Village) as part of the Clifton Hampden Bypass Scheme.
- 4.33 These additional bus stops will increase the accessibility and catchment of existing bus services in this area, whilst also helping to cater for new or improved services in the future. The locations have been determined in liaison with the bus operators serving this area, changes to existing services and new future services will be determined by bus operators.
- 4.34 The stops are proposed to include shelters and bicycle parking as appropriate.
- 4.35 Journey time data presented in the Transport Assessment demonstrates that the Scheme will significantly improve journey times over the existing river crossings at Culham Cut / Sutton Bridge and Clifton Hampden Bridge. Any routes that use these bridges in the future, currently the 95 and 33 services, would benefit from the improved journey times and reliability.
- 4.36 There are currently poor opportunities for bus routes to offer good journey time reliability north / south in this area due to the severance created by the River Thames and the historic road network. The South Oxfordshire IDP includes requirements for several new bus routes to support planned growth. It is the intention for two of these routes to use the new Didcot to Culham River Crossing road, and as such the future bus network has been planned assuming the new road is in place. Without the new road it is unlikely the new bus routes could be delivered; the routes would take longer and be less reliable, increasing operating costs, while at the same time being less attractive to use, suppressing revenue. It is unlikely the proposed new routes would be viable without the new road, which would cause several strategic new developments to be more car dependent and less acceptable in planning terms.
- 4.37 The exact routes of the new services are not yet finalised; however the intention is for them to provide links from the development areas at Chalgrove to Culham Science Centre then via the new Didcot to Culham River Crossing road towards Didcot, and from Oxford's Eastern Arc, covering the Bayswater Brook, Northfield and Grenoble Road development sites, again to Culham Science Centre and onwards towards Didcot via the new road. These services will also serve the proposed strategic housing development at Culham. It is intended that both routes will eventually operate half-hourly, combining to provide four buses per hour along the new road in each direction.
- 4.38 The new services will be initially funded through S106 contributions from the development sites that they will serve. This will cover the start-up period where passenger use is built-up over time and as development build-out progresses. The requirement for subsidy will decline over this time as passenger numbers and associated revenue increases, with the routes eventually becoming self-funding through passenger revenue alone.
- 4.39 Currently, there are no explicit bus priority measures provided along the length of the scheme, although in the future, priority at traffic signals could be implemented and bus lanes marked where road space allows, such as on the dual-sections of the roads.

5. Long-term monitoring

- 5.1 Parts of the Scheme will be monitored, for example the landscaping and biodiversity mitigation will be monitored for the first five years following the opening of the Scheme. This monitoring is detailed within the Outline Landscape and Biodiversity Management Plan (OLBMP). This document would be adopted and added to by the Principal Contractor to ensure that the proposed landscape and biodiversity mitigation establishes successfully. It is not proposed to monitor the effectiveness of flood mitigation, as this is not generally required.
- 5.2 As the Lead Local Flood Authority, OCC are responsible for coordinating the management of flood risk from surface water, groundwater and ordinary watercourses. Typically, OCC will investigate flooding issues to find out who the Riparian owner is and therefore who is responsible; and advise on potential solutions. The cost of any works to fix any flooding issues will be charged to the responsible person or organisation.
- 5.3 As the highways authority, OCC are responsible for the provision and maintenance of drainage assets on the road network. The Highways Act 1980 empowers highway authorities to construct and maintain drainage systems to remove surface water from the highway. The Scheme will ultimately belong to OCC as the relevant highways authority, and if parts of the Scheme require amending in the future, OCC (depending on the amendment required) would have the ability under their permitted development rights, or by way of a planning application and permission, to implement changes to the Scheme as required.
- 5.4 Moreover, as highways authority, OCC can pilot or introduce different operational measures for the road as is required.
- 5.5 No specific climate change monitoring programme is considered necessary as the Scheme has been designed to current standards, such as Environment Agency Flood Risk Climate Change allowances which have been developed and endorsed by an agency of the UK Government. In addition, the Design Manual for Roads and Bridges has heavily influenced the design and environmental assessment of the Scheme and is the gold standard for road design in the England.

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