



Begbroke Innovation District

Supplementary Transport Information

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1 INTRODUCTION

1.1 Background

- 1.1.1 KMC Transport Planning Ltd (KMC) has been appointed by Oxford Development Limited (ODL), a joint venture between the University of Oxford (OU) and Legal and General, to provide transport advice and prepare supporting technical documentation to accompany the outline planning application relating to the proposed development of Begbroke Innovation District (the Site). The Site forms part of the land that was allocated as part of the Cherwell Local Plan (Part 1) 2011-2031 Partial Review (referred to as the Partial Review Local Plan) under Policy PR8 in order to meet Oxford's unmet housing needs.
- 1.1.2 An outline planning application for the development of the Begbroke Innovation District was submitted to Cherwell District Council in July 2023 (LPA Ref: 23/02098/OUT) for a residential-led mixed used development, which will include up to 215,000 sqm of residential floorspace (or circa 1,800 homes which depending on the housing mix could result in a higher or lower number of housing units), up to 155,000 sqm of flexible employment uses and supporting social, retail, leisure and community uses, including two primary schools, a secondary school and local centre.
- 1.1.3 The outline planning application establishes a framework within which future 'Neighbourhood Guide' (or similarly named set of plans and documents) and Reserved Matters Applications would be prepared. The outline planning application represents the first of three 'tiers' of planning control (i.e. Tier 1). Tier 2 will comprise Neighbourhood Guides that will be submitted to Cherwell District Council following outline consent to help inform and define the Reserved Matters Applications (Tier 3), which would be developed and submitted for individual parcels of land.
- 1.1.4 The outline planning application was supported by the following transport related documents:
- Transport Assessment;
 - ES Transport Chapter;
 - Framework Site Wide Travel Plan;
 - Framework Construction Traffic Management Plan; and
 - Framework Delivery and Servicing Management Plan.

1.2 Scope of Report

- 1.2.1 Consultation responses with respect to transport have been received from Oxfordshire County Council (OCC), as local highway authority, National Highways (NH), as strategic highway authority, Active Travel England (ATE) and Network Rail (NR). This Supplementary Transport Information provides further information in response to the transport related consultation responses received for the outline planning application.
- 1.2.2 It is important to note that the consultation responses seek further clarification, information and detail to be provided. Further information has been provided within this report where it is appropriate for this stage in the planning process (i.e. outline planning application). Some of the

information and detail requested in the consultation responses will form part of Tier 2 or 3 applications and this has been noted in this report where this is the case.

1.2.3 The remainder of this report is structured as follows:

- Section 2: Response to OCC Consultation Response;
- Section 3: Response to National Highways Consultation Response;
- Section 4: Response to Active Travel England Consultation Response; and
- Section 5: Response to Network Rail Consultation Response.

2 RESPONSE TO OXFORDSHIRE COUNTY COUNCIL

2.1 Introduction

2.1.1 This section provides a response to the Oxfordshire County Council (OCC) consultation response to the outline planning application. It follows the same format as the OCC consultation response.

2.2 Transport Strategy

2.2.1 The consultation response from OCC notes that the PR8 Development Brief is yet to be adopted and that the outline application is for the OUD element of the PR8 allocation and does not include the entire PR8 allocation.¹ OCC therefore requires the OUD, Hallam Land and Newcore elements of the PR8 allocation to be fully integrated.

2.2.2 OUD has engaged with Hallam Land and Newcore to ensure that the masterplan for the OUD element of the PR8 allocation is fully integrated with the Hallam Land and Newcore elements of the allocation. Even though the PR8 allocation is being brought forward as three individual applications by the respective land owners, the engagement undertaken between each party ensures that it will read as a single and comprehensive masterplan for the PR8 allocation.

2.2.3 OCC also notes support for the 'car is a guest' principle adopted by the OUD outline application and that the County is supportive of the Transport Strategy set out in the Transport Assessment and Framework Site Wide Travel Plan, which aligns with OCC's Local Transport Connectivity Plan (LTCP) policies.

2.3 Vehicle Access

2.3.1 The outline planning application for the PR9 allocated site includes proposals to upgrade the A44/Begbroke Hill junction to provide a fourth arm to the junction for PR9 access as well as improvements to pedestrian and cycle crossings and bus stop improvements.² OCC note that the junction modelling submitted with the TA for the A44/Begbroke Hill junction demonstrates that the junction is expected to operate within its theoretical capacity and raises no objections to the vehicle access strategy.

2.3.2 It is accepted that should the PR8 development be brought forward ahead of the PR9 development that improved pedestrian and cycle crossings across the A44 and bus stop improvements would need to be delivered jointly by the PR8 allocation (i.e. OUD, Hallam Land and Newcore) to provide improved connectivity to the bus stops and active travel infrastructure on the western side of the A44.

¹ A draft version of the PR8 Development Brief has been issued for public consultation, closing on 20th December 2023. It therefore remains unadopted at the time of writing.

² The PR9 application was submitted under reference 21/03522/OUT. The PR9 applicant has since submitted an appeal against non-determination of the application, LPA reference: 23/00102/REF; PINS reference: APP/C3105/W/23/3329587. A decision on that appeal is expected in early April 2024.

- 2.3.3 OCC require a phasing and access strategy to be provided to demonstrate the proposed phasing of access to meet the requirements set out in the Oxfordshire Street Design Guide. This would form part of the Tier 2 submissions, which will include access details to support the phased delivery of the site.

2.4 Site Layout and Pedestrians and Cycle Routes

- 2.4.1 It is welcomed that OCC supports the 'people first' approach to the development and that this aligns with the OCC transport user hierarchy established in the Local Transport Connectivity Plan (LTCP).
- 2.4.2 The OCC confirms that it is keen to encourage innovative concepts such as the proposed 'living streets', which promote active travel and healthy lifestyles. OUD will engage with OCC as part of the Tier 2 and 3 submissions to ensure that the living streets are designed so that they could be adopted by the local highway authority.
- 2.4.3 OCC is supportive of the design principles and proposals set out in the Design and Access Statement (DAS) and Transport Assessment but is keen to ensure these principles are secured at the outline stage. It can be confirmed that the detail requested by OCC in terms of design codes will be provided as part of the Tier 2 submission and will include detail on such aspects as street typologies, street hierarchy, parking etc.

2.5 Sandy Lane

- 2.5.1 Policy PR8 within the Partial Review Local Plan expects the Development Brief to include a scheme for the closure/unadoption of Sandy Lane and the level crossing to vehicular traffic (other than direct access to properties on Sandy Lane) and through connectivity on Sandy Lane to become for pedestrians, cycling and wheelchair users only.
- 2.5.2 As part of Oxford Phase 2, Network Rail is progressing a Transport and Works Act Order (TWAO) to close the Tackley, Sandy Lane and Yarnton Lane level crossings. With regards to the Sandy Lane level crossing, Network Rail is currently proposing to replace the level crossing with a ramped cycling and pedestrian bridge over the railway. An access only vehicle link road, with new access onto the A44 and improvements to Green Lane, is proposed to maintain access for residents and landowners to the east of the level crossings. We understand that Network Rail are planning to submit the TWAO application in Spring 2024.
- 2.5.3 Oxford University and OUD have been engaging with Network Rail for some time for Network Rail to bring forward a higher specification bridge at Sandy Lane to the solution being put forward by Network Rail, which would cater for active travel desire lines as well as accommodate public transport and vehicular access to the east of the railway for maintenance purposes ('the Sandy Lane bridge'). OUD would provide funding towards the Sandy Lane bridge and it could be delivered wholly in land owned by Oxford University. Should the Sandy Lane bridge come forward, it would be subject to a separate application by Network Rail as the bridge does not form part of the outline application for Begbroke Innovation District.

- 2.5.4 Discussions are ongoing with Network Rail and the local authorities but OUD welcomes OCC's support of the Sandy Lane bridge as set out in their consultation response.
- 2.5.5 Whilst supportive of the Sandy Lane bridge being promoted by OUD, OCC is concerned that planning consent has not been granted for the closure of Sandy Lane and therefore a fallback position is required to mitigate the impacts of the proposed Begbroke Innovation District, in the event that the Network Rail proposals do not come forward. OUD has commissioned further work on the fallback position and will submit this technical work as soon as it is complete.

2.6 Canal Bridge

- 2.6.1 Policies PR8 and PR7b within the Partial Review Local Plan require these two allocated sites to provide for a walk/cycle bridge over the Oxford canal and to provide a walk/cycle route from PR8, through PR7b to provide a connection to Kidlington and Oxford Parkway.
- 2.6.2 Given the 3T weight limit of the existing listed canal bridge at Sandy Lane, consideration has also been given to the new canal bridge being capable for walk, cycle and public transport use. Concept designs for a walk, cycle and wheelchair bridge as well as a walk, cycle, wheelchair and public transport bridge have been developed by OUD based on the Canal and River Trust requirements. The concept designs are included as **Appendix A** of this submission as OCC raised concerns that they were not available on the Cherwell District planning portal.
- 2.6.3 The concept bridge designs do not form part of the outline application but have been prepared to inform the S106 contributions and planning conditions for the two allocated sites.
- 2.6.4 OUD welcomes OCC's support in principle for planning obligations to be included in the S106 Agreements for both PR7b and PR8 to safeguard the walk, cycle and public transport bridge solution and for a feasibility study to be jointly undertaken by PR7b and PR8, in consultation with CDC, OCC and the Canal and River Trust, ahead of any reserved matters applications being submitted for either site.

2.7 Canal Route

- 2.7.1 OCC and the Canal and River Trust have upgraded the canal towpath in recent years between Oxford and the southern boundary of the PR8 site. OCC and the Canal and River Trust plan to extend these improvements northwards along the PR8 boundary to Langford Lane. A S106 contribution is sought from OUD towards the canal towpath improvements. OUD will engage with OCC with regards to the S106 obligations and contributions.

2.8 Roundham Lock

- 2.8.1 OCC notes the objection raised by Network Rail with regards to the impact of the proposed development on the Roundham Lock level crossing as a result of the increase in pedestrians and cycle trips. OUD has commissioned further work to respond to Network Rail's objection and will submit this technical work as soon as it is complete.

2.9 A44 Corridor

- 2.9.1 OUD will work with OCC to develop and agree the proposed improvements to sustainable travel to be delivered on the A44 corridor as described in OCC's consultation response. This is proposed to be a reserved matter and OCC state that they would require the improvements to be delivered prior to occupation of the development.

2.10 Access Strategy

- 2.10.1 As set out earlier, a phasing and access strategy will be provided as part of the Tier 2 submission, which will include Development Area Briefs and phasing of accessing and infrastructure, including active travel routes.

2.11 Public Transport

Bus Service Contributions

- 2.11.1 As set out in the TA, OCC's bus strategy for the PR sites is to increase the frequency of bus route S3 to four buses per hour and provide a new bus route operating up to 2 buses per hour between PR8, Yarnton, Oxford Parkway and Oxford. OCC has calculated to S106 contribution for the proposed development for the bus service improvements, which will be discussed with the local authorities as part of the S106 contributions for the scheme.
- 2.11.2 OUD will liaise with OCC and local community transport providers when implementing the proposed community bus.
- 2.11.3 The TA set out the benefits of safeguarding land for a walk, cycle and public transport bridge over the canal connecting PR8 to Oxford Park and the city centre via a route through PR7b and PR8 and PR7b jointly funding a feasibility study to consider the feasibility of a multi-modal bridge for walk, cycle and public transport. OCC is not opposed in principle to this approach. It should be recognised that OCC is seeking to deliver ambitious mode shift away from the private car as part of their Local Transport and Connectivity Plan (LTCP) and the targets for mode shift go beyond the timescale of the PR sites and to 2050. Therefore, all opportunities for sustainable travel should be safeguarded to maximise the ability for OCC to deliver their targets beyond the Partial Review Local Plan period (2031). Should a railway station come forward at Begbroke in the future for example, it would need to be connected by active travel and public transport – bridges over the railway line and canal that can accommodate public transport would provide sustainable access to a Begbroke railway station in the future.

Bus Infrastructure

- 2.11.4 The phasing of bus infrastructure within the site will be included in the Tier 2 submissions and the detailed design of bus infrastructure and walking routes to the bus stops will be included in Tier 3 reserved matters applications.

On-site Mobility Hub

- 2.11.5 It is accepted that minimum requirements for the proposed mobility hub within the development should be included in any legal agreements / planning conditions to ensure the delivery of the facilities. The detailed design of the proposed mobility hub within the development will be agreed with OCC as part of Tier 3 reserved matters applications.
- 2.11.6 OCC also requires the provision for a smaller mobility hub to be safeguarded for at the land reserved for the potential railway station, which is accepted by OUD.

Potential Railway Station

- 2.11.7 Policy PR8 of the Partial Review Local Plan requires the reservation of 0.5ha for a potential railway station within the PR8 site. The outline planning application complies with this through the provision made in the Development Specification (DP4.7) which requires that 0.5ha of land will be safeguarded through the section 106 agreement adjacent to the railway line north of Sandy Lane to allow for the future provision of a rail halt.
- 2.11.8 Land north of the Sandy Lane level crossing was considered suitable because it would be closer to the local centre and employment area, and would be more deliverable as Oxford University and Network Rail own land on both sides of the railway there. At this stage, however, there are too many unknowns for the exact reserved land to be fixed but an appropriate s106 obligation would be a suitable mechanism at this stage to secure the land reservation, whilst providing some helpful flexibility.
- 2.11.9 SLC Rail were appointed by OUD to undertake initial feasibility work for a potential railway station and to ascertain whether a rail halt/station on land north of Sandy Lane could work in principle. Consideration was given to the two potential station types: i.e. a terminus station solution on a sidings adjacent to the existing railway line (which would only require one platform for terminating services); and an 'on line' station solution, which would require two platforms either side of the existing railway line and a bridge connecting the platforms. The SLC Rail concept plans for the two potential railway station options are included as **Appendix B** of this submission and demonstrate that it would be feasible to provide a railway station north of Sandy Lane within 0.5ha of land.

2.12 Cycle Parking

- 2.12.1 OCC accepts the proposed approach to the delivery of cycle parking as part of the proposed development in line with standards at the time of delivery and for the utilisation of parking and need for additional cycle parking and associated facilities to be monitored through the Travel Plans.

2.13 Car Parking

- 2.13.1 OCC welcomes the approach to car parking set out in the TA, which includes parking below the maximum parking standard as a result of the mix of uses, electric vehicle charging infrastructure

in accordance with standards, a mixture of on-plot and off-plot parking, a controlled parking zone and car club spaces.

- 2.13.2 OCC note that the TA does not make mention of any areas of the development being 'car-free' in accordance with paragraph 6.2 of OCC's 'Parking Standards for New Developments'. This notes that a car-free approach is required for areas of a development '*within 400m of frequent (15 to 30 minute) public transport services with direct pedestrian and cycle connections, and within 800m walking distance to a range of local amenities and services (i.e. those set out in paragraph 3.2.3 of OCC's Implementing 'Decide & Provide': Requirements for Transport Assessments document)*'.
- 2.13.3 The parking strategy will be detailed further as part of the Tier 2 submissions, which will be prepared in accordance with OCC's parking standards by including areas of car-free development. The detailed design of the car parking will be agreed as part of the Tier 3 reserved matters applications for each area of the development as it is brought forward.

2.14 Highway Safety

- 2.14.1 It is noted that OCC raise no highway safety concerns with the proposed development.

2.15 Modelling Results and Traffic Impact

- 2.15.1 OCC note in their consultation response that the modelling assessment presented in the TA for both the stand-alone development of the Begbroke Innovation District and the cumulative effects of PR sites demonstrates that, with the proposed package of transport infrastructure improvements to induce a mode shift away from the car, the overall impact across much of the network can be appropriately mitigated.
- 2.15.2 Following the submission of the planning application, OCC raised concerns with the cumulative impact of the PR sites on bus journey times on the A44 and requested two sensitivity tests were undertaken using the VISSIM model. This was undertaken and submitted to OCC. A technical note summarising this sensitivity test is included as **Appendix C** of this submission. OCC's consultation response stated that the bus lane sensitivity test demonstrates the effectiveness of the bus lanes in mitigating the impact on bus journey times. No further modelling has been requested by OCC and it is considered that the assessment of the effects of the proposed development and cumulative effects of the PR sites is now accepted by OCC.
- 2.15.3 It is noted that OCC will require a Monitoring and Evaluation plan to be submitted and agreed between OUD and OCC, the requirements of which are set out in the County Council's Decide and Provide paper. It is proposed that this would be provided as part of the Tier 2 submissions and could form an appropriate planning condition to an outline planning consent.

2.16 Travel Plans

- 2.16.1 A Framework Site Wide Travel Plan (FTP) was submitted with the outline application and OCC's Travel Plan team have provided some comments on the FTP, which are helpful and accepted by

OULD. It is proposed to submit an updated and final FTP as part of the Tier 2 submission, which will respond not only to the OCC comments but also align with the further details provided on the development at Tier 2. The submission of a final FTP could form a planning condition to an outline planning consent. In advance of that, a response is provided to each of the OCC comments below.

Table 2.1 – Response to Framework Site-Wide Travel Plan Comments

OCC Comment	Response
Site plans and a location plan should be included in the FTP	As it is an outline planning application it was not considered appropriate to include the illustrative masterplan within the FTP. As part of the Tier 2 submission, plans will be included.
The FTP should provide the estimated date of occupation and build out schedule	This is not known at this stage and therefore will form part of the Tier 2 final FTP.
Details of the closest existing transport infrastructure should be included. For example, where is the closest non-development-based bus stop? What facilities are available and what services serve this stop? Depending on the build out rate and phasing, some residents or employees may be dependent on these services in the absence of planned site-specific services	This will be provided as part of the Tier 2 final FTP as information will then be known on phasing of the development and associated infrastructure.
The document refers to the ‘Transport Hierarchy’. ‘Reducing the need to travel’ is top of this hierarchy but has not really been discussed within the document. How will the development seek to reduce unnecessary journeys? For example, broadband provision within residential dwellings and workspaces to enable working from home and virtual meetings, promotion of home deliveries and home shopping (possible links for discounts between the local community and development-based retail on deliveries) or visiting catering or maintenance services for the workplace – reducing the need to travel during the day.	The primary way of reducing trips is through the proposed mix of uses, which is stated at paragraph 3.1.4 of the FTP submitted with the outline planning application. Further measures to reduce the need to travel will be explored as part of the Tier 2 final FTP and subsequently the Tier 3 reserved matters submission through the individual Travel Plans by land use.
Cycle maintenance stations should be considered for all sites where cycle parking is provided (with the exception of residential boundaries) to enable basic on-site repairs to be undertaken	Cycle maintenance facilities will be provided for within the development to enable basic on-site repairs to be undertaken. This will be included in the Tier 2 final FTP submission.
Paragraph 3.3.12 – Are the trip levels identified within Table 3.1 to be the maximum level of development-based vehicle trips per day and on which targets will be based?	They are not a cap but OUD has committed to monitor all movements, including vehicle movements, using Vivacity or similar technology.
Paragraph 5.3 – School Travel Plans should be produced using the Modeshift STARS system Education - Modeshift STARS . For further	Paragraph 5.3.4 states that ‘The Travel Plan will utilise the Modeshift STARS Travel Plan toolkit’ and therefore no update is considered necessary as part of the Tier 2 final FTP submission.

information please contact the Travel Plans Team TravelPlan@oxfordshire.gov.uk	
Paragraph 6.5.3 – Is it envisaged that this role will be full or part time? What budget (indicative at this stage) will be allocated to enable the TPC to pursue the travel plan measures identified in Table 4.2?	It is considered that the role would be part-time but the time required by the TPC would vary throughout the year and as the development is built out.
Who will be the interim TPC until the TPC role is filled? This is useful information for the Travel Plans Team in order that a travel plan monitoring related dialogue can be started as soon as possible.	The interim TPC contact details will be provided to OCC prior to the TPC role being filled.
A commitment is required that contact details for the Site TPC will be forwarded to the Travel Plans Team upon appointment	The Tier 2 final FTP will include a commitment for OUD to provide the contact details of the TPC upon appointment.
Paragraph 7.3 – Monitoring should take place at baseline (3 months post occupation) and then in years 1, 3 and 5. If targets are not met at year 5, monitoring should continue in years 7 and 9.	The Tier 2 final FTP will include the duration of the monitoring in line with OCC's requirements.
Figure 3.2 - Please could targets be split into individual mode-based targets. Although it is recognised that they will be indicative at this stage it will be helpful for those producing subsidiary travel plans.	The FTP included in the outline planning application provided targets for active travel, public transport, car driver and car passenger based on the trip generation assessment in the Transport Assessment. The main mode of travel of walk and cycling was grouped together as 'active travel' and the main mode of travel of bus and rail was grouped together as 'public transport'. Whilst the mode share will be monitored and reported for all individual modes of travel (e.g. walk, cycle, bus, rail etc), it is considered that the targets should be grouped as they are in the FTP.
Paragraph 7.15 – Monitoring should commence 3 months post occupation of the site as required in paragraph A.58 of the OCC guidance document.	The Tier 2 final FTP will include the monitoring commencement, in line with OCC's guidance.
Are there any identified barriers to the promotion of sustainable, active travel in this location?	Improvements to active travel infrastructure is proposed to be funded jointly by the PR sites and the proposed development will include a permeable and high quality network of active travel routes. A package of measures will also be implemented to promote active travel as set out in the FTP. Given this, there are not considered to be any significant barriers to the promotion of sustainable, active travel in this location.
Modal split data for the area is required as per paragraph A.77 of the OCC guidance document.	The Tier 2 final FTP will include the Census mode share data for the local area, in line with OCC's guidance.
Survey results should be forwarded to the Travel Plans Team at OCC within one month of survey completion as specified within paragraph A.66 of OCC guidance.	The Tier 2 final FTP will confirm that survey results will be sent to OCC within one month of survey completion.

2.17 Construction Traffic Management Plan

2.17.1 OCC note that planning consent is not being sought for the proposed temporary secondary construction access on A44 to the south of the A44/Sandy Lane junction. OCC does not raise any in principle objections to the provision of a temporary construction access off of the A44 but note that it would need to be subject to a separate agreement made pursuant to s106 obligations and/or a S278 agreement.

2.18 Public Rights of Way

2.18.1 As part of the Tier 2 submission a Public Right of Way (PRoW) strategy would be submitted, which will set out the approach to PRoW in terms of any upgrades, diversions and temporary closures as part of the development of the Begbroke Innovation District.

2.19 Innovation

2.19.1 OCC require an Innovation Plan to be prepared for the Begbroke Innovation District in accordance with Oxfordshire Innovation Framework for Planning Development.

2.19.2 Given the outline nature of the planning application, a Framework Innovation Plan has been prepared at this stage that signposts to where innovation has been considered within the outline planning application.

2.19.3 The proposed development seeks to embrace innovation and will actively engage with OCC and their Innovation Hub (iHUB) to progress an Innovation Plan for the proposed development, which will become more detailed in nature as the proposals progress through the tiered approach to the planning application process and during the implementation and monitoring of the development.

2.20 S106 obligations

2.20.1 Within the OCC consultation response, the County has set out it's position on S106 transport contributions for the proposed development. OUD will engage with OCC to discuss and agree appropriate S106 transport contributions.

3 RESPONSE TO NATIONAL HIGHWAYS

- 3.1.1 National Highways has reviewed the outline planning application and National Highways have raised a holding objection to the local planning authority, subject to receiving further information.
- 3.1.2 A meeting was held with National Highways on 17 October 2023 and it was agreed to provide National Highways with the VISSIM modelling as well as the trip generation spreadsheet model, which have been provided. In addition, National Highways requested clarification on a number of aspects of the Transport Assessment and some further information with regards to development trips forecast to use the Strategic Road Network (SRN).
- 3.1.3 KMC will continue to engage with National Highways on transport matters.

4 RESPONSE TO ACTIVE TRAVEL ENGLAND

4.1 Introduction

4.1.1 The consultation response from Active Travel England (ATE) to Cherwell District Council, dated 5 September 2023, recommended the deferral of the application where further information has been requested.

4.1.2 A meeting between KMC and ATE was held on 12 September 2023 to discuss the ATE consultation response, to outline the proposed approach that has been developed over a significant period as part of the Local Plan process and pre-application consultation and determine the nature of additional information that is required.

4.1.3 Comments made by ATE in the consultation response that require further information or clarification are individually set out and responses provided. These matters are summarised or quoted individually in italics, and a response provided. The response avoids repetition of details already outlined in application documents but provides reference to them.

4.1.4 In reviewing the consultation response and discussing with ATE, the comments are grouped into the following main themes:

- Overview of the tiered approach to the planning application process;
- The design requirements of the masterplan;
- Access points to Begbroke Innovation District;
- Wider links to destinations away from Begbroke Innovation District; and
- The Travel Plan for Begbroke Innovation District.

4.2 Tiered approach to the planning application process

4.2.1 In the consultation response, ATE acknowledges that the planning application is currently at outline stage and as such, a lot of the design detail is not provided at this stage and will come forward at later stages of planning (i.e. reserved matters). ATE states that whilst details are yet to be agreed, it is important to establish the principles by which further detailed or reserved matters submissions should be based. This is to ensure opportunities to maximise connectivity and active travel are embedded.

4.2.2 The outline planning application incorporates 'Control Documents' that would be secured by condition, should outline planning permission be granted. Control Documents relevant to ATE include the Parameter Plans, the Strategic Design Guide and Framework Site Wide Travel Plan.

4.2.3 The outline planning application for Begbroke Innovation District advocates a three-tiered approach. The outline planning permission would constitute the first 'tier' of planning consent. Whereas outline planning permissions are usually followed directly by reserved matters applications, for the Begbroke Innovation District, there would be an intermediary step, i.e., Tier 2. Tier 2 submissions will establish area-specific masterplans that are in accordance with the site-wide parameters and controls established through the outline planning permission at Tier 1.

- 4.2.4 The area specific masterplans at Tier 2 will include design aspects such as internal road and path layouts, and street design and how public transport and active travel infrastructure will be incorporated into the phase or area. It is anticipated that at the Tier 2 stage much of the detail currently sought by ATE will be provided. ATE will be a consultee for Tier 2 submissions and subject to ATE agreement, will be invited to participate in the pre-application process / design stage.
- 4.2.5 'Tier 3' of the planning application process for Begbroke Innovation District will be reserved matters applications, which will provide specific detail on layouts and design associated with individual plots across the application site and will comply with the controls and parameters established by Tier 1 and Tier 2. Once again, it is anticipated that ATE will be consulted on Tier 3 (i.e., reserved matters) applications, so further engagement will be possible.
- 4.2.6 Given the above, it is fully expected that ATE will be engaged in the subsequent and more detailed stages of the planning application process for Begbroke Innovation District and will help direct the design of the development and ensure opportunities to maximise connectivity and active travel are embedded.

4.3 The design requirements of the Masterplan

'Steps should therefore be taken to secure key services and walking and cycling routes/linkages within appropriate timescales and further clarity is needed as to how these will be delivered and in what form'.

- 4.3.1 The phasing and location of key facilities and the associated walking and cycling linkages will be detailed through the Tier 2 submissions. The submissions will outline area-specific masterplans which will include development schedules, the locations of key routes and the form of such routes with specific design details.
- 4.3.2 Later, Tier 3 reserved matters submissions, which will accord with the Tier 2 submissions, will set out the details of aspects such as route design and active travel infrastructure design for individual plots.

'It is however unclear why the 'Vehicular network should permeate through all areas of the site...' (3.8.2 Strategic Design Guide), as there is benefit in creating vehicle free environments, particularly in commercial and educational parts of the site'.

- 4.3.3 This statement simply acknowledges that direct vehicular access to locations will be needed for specific reasons such as servicing. It does not consider that vehicular access should be the primary form of travel, but vehicular access will be needed.
- 4.3.4 The Strategic Design Guide, Design and Access Statement and Transport Assessment set out the approach to active travel and vehicular access. Active travel modes are to be prioritised above all other modes. They will be afforded with a permeable, high quality and fine grain network of walk and cycle routes. It will be easier to walk or cycle through the Site than by any other mode

of transport. Within the site, there will be dedicated active travel links and public realm from where vehicles are positively excluded from day-to-day use.

'.....it is important to understand street hierarchies at the earliest opportunity with strong design codes being an important tool in interpreting street layout in accordance with NPPF Paragraph 129. It has not been possible to locate any indicative street hierarchy plans and therefore properly integrate the internal network, however the principles are generally welcomed'.

- 4.3.5 The Strategic Design Guide (which is a Control Document) sets strategic guidelines that are applicable to the development and the outline planning application. The details set out in the Strategic Design Guide will inform future area-specific masterplans that will be submitted as part of the Tier 2 submissions.
- 4.3.6 Design principles associated with movements are set out in 3.8 of the Strategic Design Guide. The first principle identifies that pedestrians and cyclists should be considered first. The principles outline a range of matters relating to active travel and identify the key movement arteries through the site, connecting with access points.
- 4.3.7 Street hierarchies will form part of the Tier 2 submissions, and we will consult with ATE on those when they come forward.

4.4 Access points to Begbroke Innovation District

'Any illustrative linkages into and out of the site, including bridges, should be secured by strong and robust planning conditions / obligations. These should be applied to any future consent, ensuring the requirement for pedestrian and cycle routes to existing and future infrastructure be adopted by the highway authority up to the red line boundary'.

- 4.4.1 Parameter Plan 4 on Access and Movement sets out the access and movement parameters for the proposed development. It is a Control Document, and compliance with it will be a condition of any outline planning permission. The requirement to secure the links to and from the site via appropriate obligations or conditions is agreed. The adoption of highways and active travel infrastructure within the site to connect to the external active travel network will form part of Tier 3 reserved matters applications for individual parcels of land.

'Given access is reserved matter, it has not been possible to assess how these accesses will connect into the existing active travel network, however it will be important to ensure that they support active modes to guarantee transport choice'.

- 4.4.2 The proposed points of access are detailed in Parameter Plan 4 Access and Movement Plan. This is presented in **Figure 4.1**.

Figure 4.1: Parameter Plan 4 Access and Movements Plan



4.4.3 The points of access are identified to connect with existing routes, many of which will be improved through developer S106 contributions, which will include contributions from OUD for the Begbroke Innovation District. Active Travel links will be incorporated to each. The detail of these connection points will be determined through the area-specific masterplans and the detail that will come forward through the detailed design of wider Local Plan-led linkages.

4.5 Wider links to destinations away from Begbroke Innovation District

'Clearly the surrounding network requires improvement, and it will be important for the applicant to work with the local authority to ensure this route is upgraded in full and in compliance with LTN1/20 and Inclusive Mobility guidance. This is of particular importance in relation to surfacing, side roads and junction treatments, ensuring routes align with 4.2 Core design principles of LTN 1/20 and do not over rely on shared use pavements which do not encourage the coherent and convenient movement of cyclists.'

'ATE would also encourage the applicant to utilise The Level of Service Tool and Junction Assessment Tool in LTN 1/20, and a Walking Route Assessment Tool, to assess key routes and develop appropriate schemes compliant with current standards.'

4.5.1 The off-site routes connecting to the Begbroke Innovation District are proposed to be upgraded by Oxfordshire County Council (OCC), which would be funded through developer financial contributions, which would include S106 contributions associated with the proposed development. OCC has set out such in their consultation response. The delivery of these schemes does not fall directly to this planning application, rather it is part of a plan-led process

to ensure infrastructure is provided that caters for all of the allocated sites in the vicinity of the site rather than any single site.

- 4.5.2 It is expected that in the development of these schemes, OCC will use the appropriate assessment tools and develop the schemes in line with current standards, including LTN1/20. It is also expected that the County would utilise the Level of Service Tool and Junction Assessment Tool in LTN 1/20, and the Walking Route Assessment Tool to feed into the design process of the off-site active travel infrastructure. Given the importance of active travel to the success of sustainable development, OUD and their consultant team will engage with OCC to discuss and feed into the design of off-site infrastructure to ensure that it complies with the latest standards and active travel design principles as set out in LTN1/20.

'Table 4.1: Transport Strategy Measures and Initiatives of the Travel Plan expects 'Financial contribution towards pedestrian, wheeling and cycling crossing facilities across the A44 at key desire lines as well as active travel routes along the A44 corridor.' Whilst this is welcome, it will be important to secure these improvements early and ATE would welcome further detail on how these are expected to come forward in accordance with the above guidance'.

- 4.5.3 As is set out above, delivery of the off-site infrastructure identified in the Cherwell Local Plan (Part 1) 2011-2031 Partial Review that is necessary to allow the proposed development and wider site allocations to come forward will be led by OCC.
- 4.5.4 Financial contributions towards these schemes will be made by the applicant (and other allocated sites). These will be designed and implemented by OCC as part of the appropriate plan-led approach to this development.

'ATE would however encourage the applicant to continue dialogue with The Canal and River Trust and the local authority to discuss what measures can be implemented to ensure the development can contribute towards ongoing upgrades and improvements along the Oxford canal'.

- 4.5.5 The consultation response from OCC requires a financial contribution towards the upgrade of the canal towpath along the site boundary to tie into the recently upgraded tow path to the south of the site (north of the A44) and north to the Langford Lane employment area.
- 4.5.6 In addition to tow path improvements, it is proposed to provide active travel routes within the site boundary that would enable pedestrians and cyclists to route the eastern part of the proposed site in the vicinity of the canal as shown on Parameter Plan 4 Access and Movement Plan.

4.6 Travel Plan for Begbroke Innovation District

'Agreed travel plan measures should be secured either by way of planning obligations or conditions'.

- 4.6.1 It is expected that the Framework Site-Wide Travel Plan will be secured by way of a suitable planning obligation or condition.
- 4.6.2 The Framework Site-Wide Travel Plan identifies the need for land use specific Travel Plans as development comes forward. These would be secured as part of the Tier 2 and 3 submissions.

'The modal share targets within the Travel Plan will need to be closely monitored and reviewed and the developer will need to assess whether these are achieved along with implementing measures to address failures'.

- 4.6.3 The Framework Site-Wide Travel Plan sets out a clear commitment towards on-going monitoring. This includes a range of survey types and annual monitoring. Further, movements on key links and all access points to the site will be continuously monitored using permanent recording devices. This level of monitoring shows a clear commitment to the process and a level of innovation not usually found within developments.
- 4.6.4 The review mechanism is set out with a key component being the Transport Review Group which will ensure the input of a range of stakeholders. There is opportunity for ATE to form part of this group.
- 4.6.5 The Framework Site-Wide Travel Plan also sets out the commitment to a Sustainable Transport and Innovation Fund. The approach and fund will allow the TRG to determine through the monitoring and review process whether mode share targets are being met, or on track to be met, and whether remedial measures should be considered and implemented.

'It would also be helpful to separate 'active travel' trips to understand which relate to walking and cycling journeys respectively'.

'Alongside this, separated targets for residential, educational and commercial uses would be helpful in understanding the overall impact of the development'.

- 4.6.6 This is agreed. As part of the Tier 2 submission, an updated Framework Site-Wide Travel Plan will be submitted. This will reflect any changes resulting from any outline consent, changes to policy or site-specific information that can be confirmed at the time of the Tier 2 submission.
- 4.6.7 The updated Framework Site-Wide Travel Plan will provide greater detail on the development proposed across specific areas and will provide more information in respect of forecast / targeted travel patterns which will include details for walking and cycling. However, it should be noted that the important objective is to promote walking and cycling wherever possible. It should not be considered a failure if overall objectives for active travel are met where a specific target to either walking or cycling has not been achieved due to a stronger preference for the alternative mode.

4.7 Summary

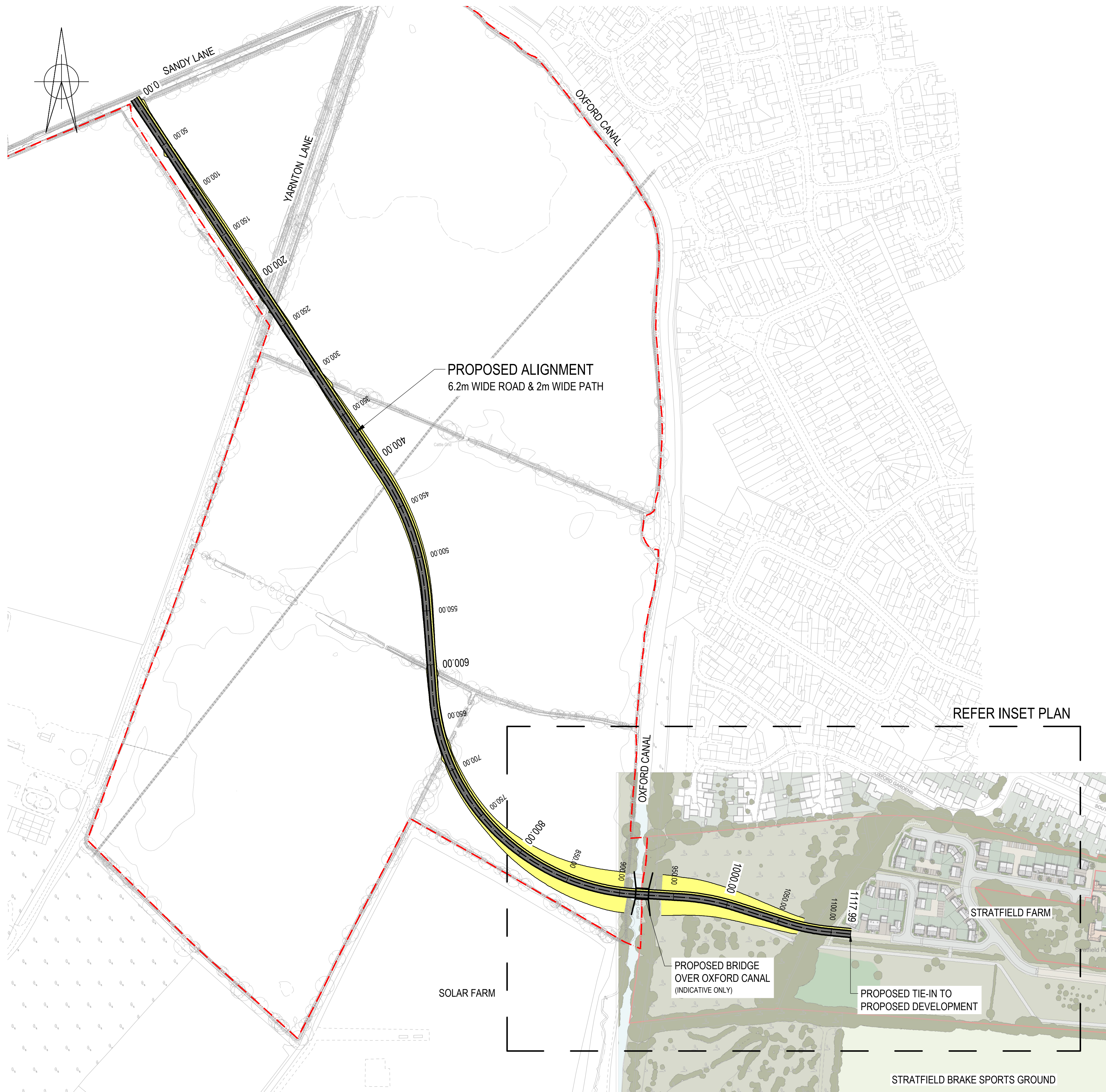
- 4.7.1 In summary, the feedback from ATE is welcomed and this response has been prepared to set out when further information on active travel will be provided as part of the Tier 2 and 3

applications. Further engagement and design input from ATE would be welcomed as part of the development of those submissions, which will include street typologies and infrastructure design.

5 RESPONSE TO NETWORK RAIL

- 5.1.1 Policy PR8 within the Partial Review Local Plan expects the PR8 Development Brief to set out proposals for Sandy Lane to be closed to vehicular traffic (other than direct access to properties on Sandy Lane) and through connectivity on Sandy Lane to become for pedestrians and cycling only.
- 5.1.2 As part of Oxford Phase 2, Network Rail is progressing a Transport and Works Act Order (TWAO) to close the Tackley, Sandy Lane and Yarnton Lane level crossings to support increased utilisation of this part of the rail network and to reduce risk. We understand that Network Rail plan to submit an TWAO application in Spring 2024. To be clear, this work and the closure of the Sandy Lane level crossing is being progressed irrespective of any development within the PR8 site.
- 5.1.3 As a result of community consultation for the Begbroke Innovation District, OUD recognises that not everyone can walk or cycle and therefore Oxford University and OUD have engaged with Network Rail for some time to promote a bridge that would be more suitable for active travel as well as accommodate public transport and vehicular access to the east of the railway for maintenance purposes. To be clear, should they come forward these proposals would be subject to a separate application by Network Rail and are not part of the Begbroke Innovation District for which outline planning permission is being sought.
- 5.1.4 Whilst Network Rail is supportive of the bridge solution that is being promoted by OUD, this work is ongoing and subject to approval, detailed design and funding discussions with Network Rail and the local authorities.
- 5.1.5 Given the status of the Network Rail TWAO submission and the bridge solution being promoted by OUD, Network Rail have objected to the outline planning application whilst continuing to work positively and proactively with Oxford University on a bridge solution and appropriate mitigation at Roundham Lock level crossing.
- 5.1.6 Network Rail requires OUD to demonstrate what impact the development would have on the level crossings should a bridge solution not come forward. OUD has commissioned further work to assess the impact and will engage with Network Rail on this technical piece of work once it is complete.

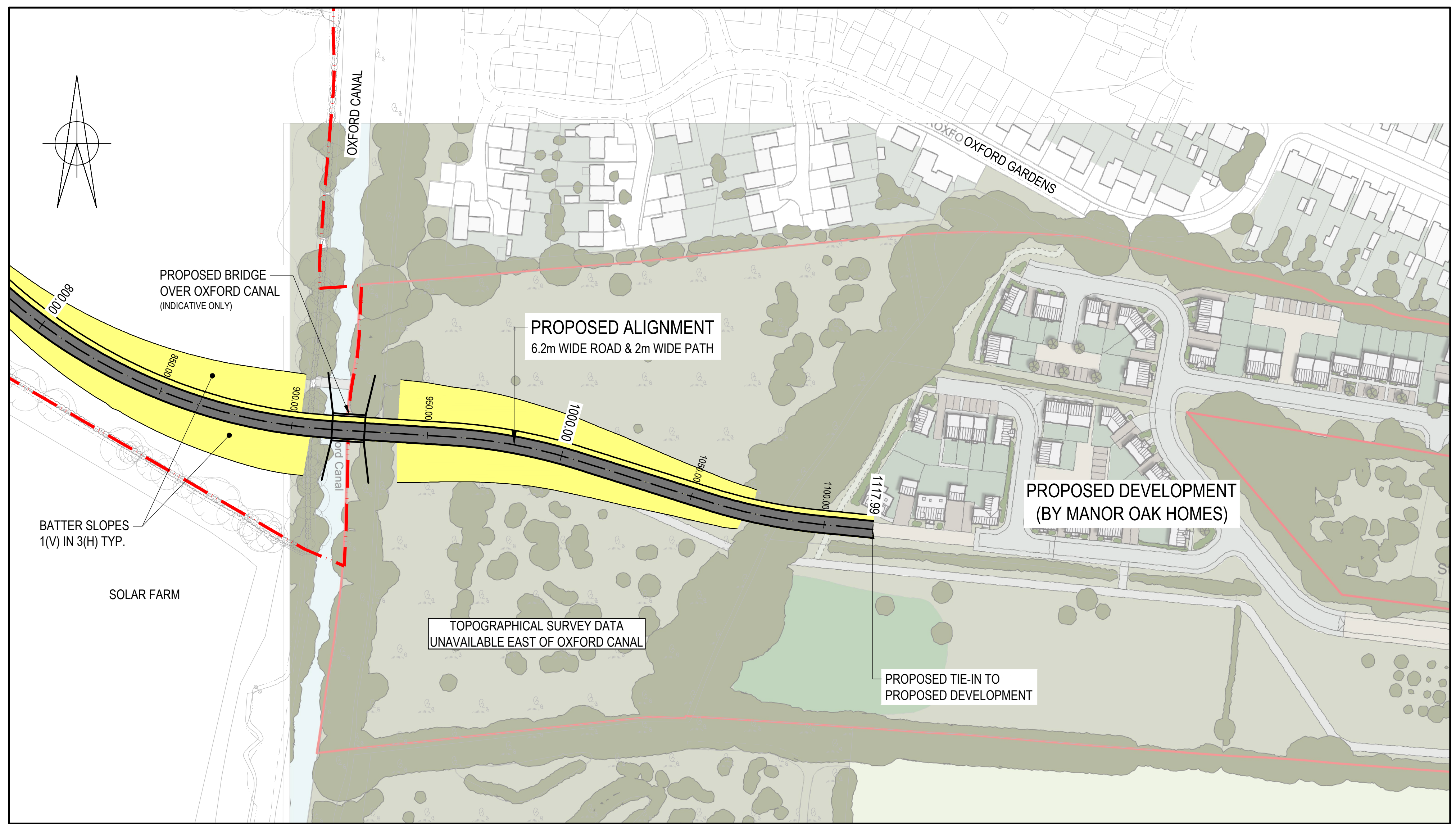
Appendix A



PROPOSED ALIGNMENT
6.2m WIDE ROAD & 2m WIDE PATH

REFER INSET PLAN

PLAN
SCALE 1:2000



PROPOSED BRIDGE
OVER OXFORD CANAL
(INDICATIVE ONLY)

PROPOSED ALIGNMENT
6.2m WIDE ROAD & 2m WIDE PATH

PROPOSED DEVELOPMENT
(BY MANOR OAK HOMES)

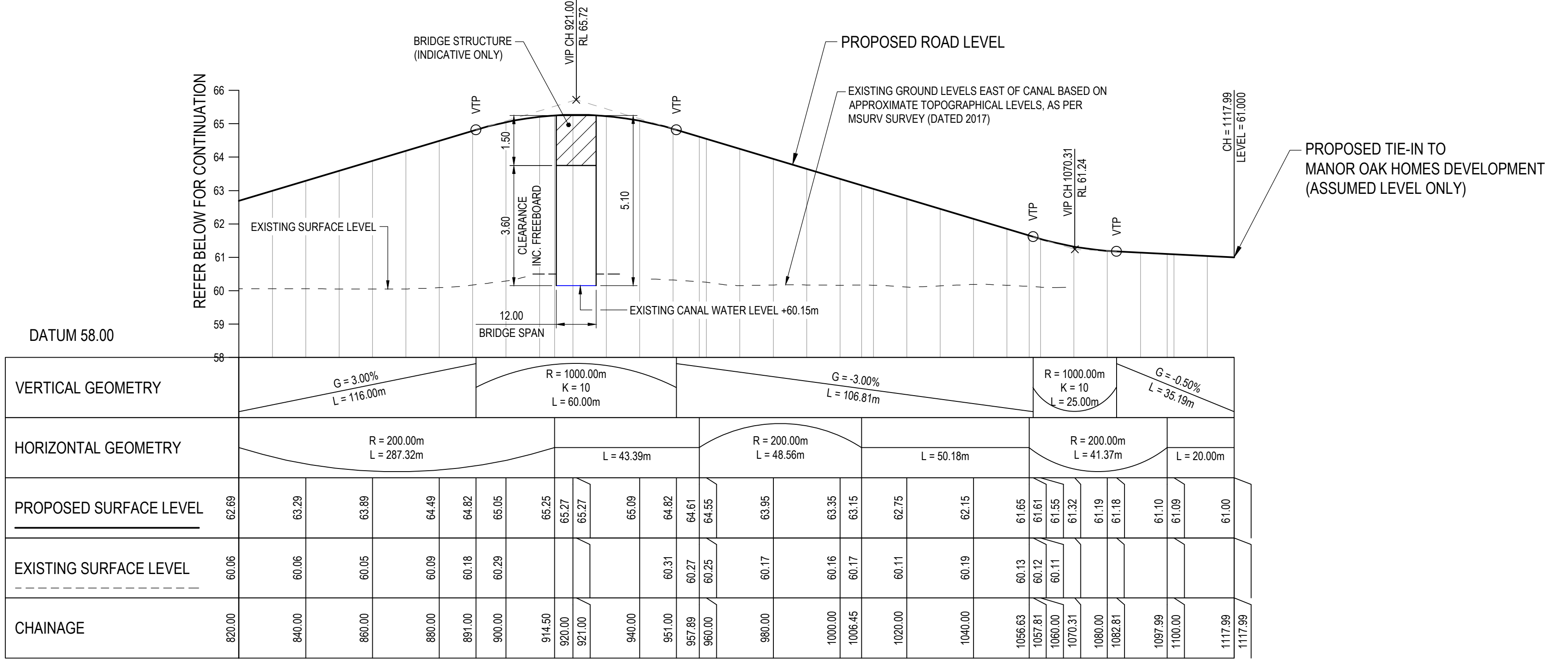
BATTER SLOPES
1(V) IN 3(H) TYP.

SOLAR FARM

TOPOGRAPHICAL SURVEY DATA
UNAVAILABLE EAST OF OXFORD CANAL

PROPOSED TIE-IN TO
PROPOSED DEVELOPMENT

INSET PLAN
SCALE 1:1000

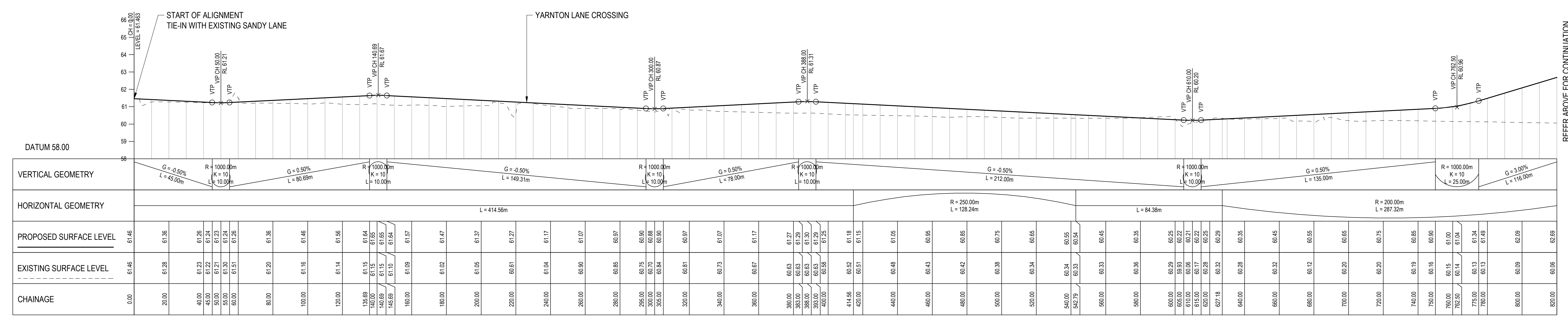


VERTICAL GEOMETRY	HORIZONTAL GEOMETRY
G = 3.00% L = 116.00m	R = 200.00m L = 287.32m
R = 1000.00m K = 10 L = 60.00m	L = 43.39m
G = -3.00% L = 106.81m	R = 200.00m L = 48.56m
R = 1000.00m K = 10 L = 25.00m	L = 50.18m
G = -0.50% L = 35.18m	R = 200.00m L = 41.37m
	L = 20.00m

PROPOSED SURFACE LEVEL	EXISTING SURFACE LEVEL	CHAINAGE
62.69	60.05	820.00
62.29	60.05	840.00
63.89	60.05	860.00
64.49	60.09	880.00
62.82	60.15	891.00
60.05	60.29	900.00
62.25	60.25	914.50
63.27	60.25	921.00
60.09	60.31	940.00
64.82	60.37	951.00
64.61	60.23	957.89
64.55	60.23	960.00
60.09	60.11	960.00
63.32	60.15	1000.00
63.15	60.17	1004.50
62.73	60.11	1020.00
62.15	60.19	1040.00
61.65	60.13	1056.63
61.61	60.11	1057.81
61.32	60.11	1060.00
61.18	60.11	1070.31
61.10	60.09	1082.81
61.09	60.09	1097.99
61.09	60.09	1100.00
61.09	60.09	1117.99

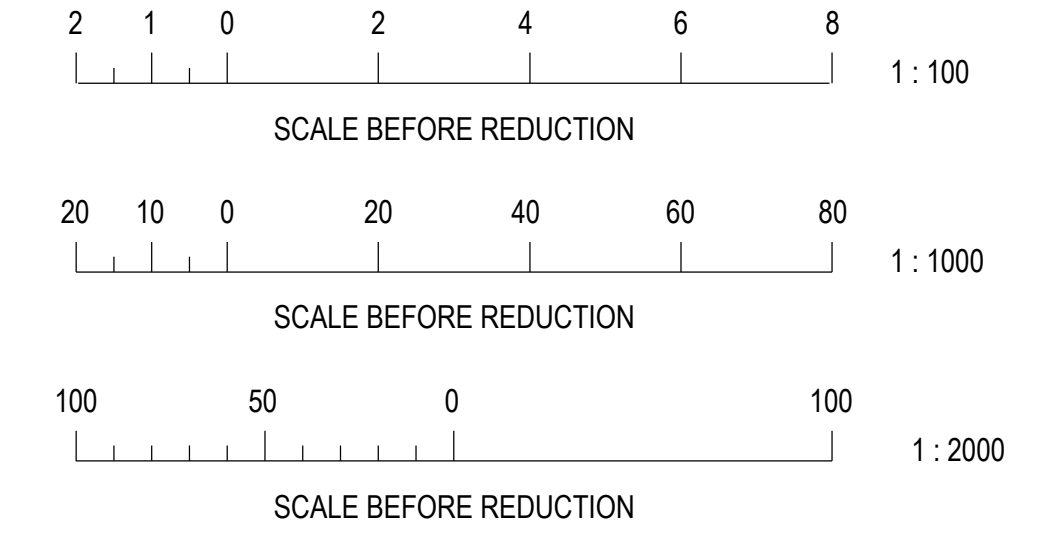
LONGITUDINAL SECTION - Canal Crossing

HORIZ SCALE 1:1000
VERT SCALE 1:100



LONGITUDINAL SECTION - Canal Crossing

HORIZ SCALE 1:1000
VERT SCALE 1:100



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Rev Description Date Issued By

CONCEPT
Project Stage

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Project: BEGBROKE PARK
Site: PR7B SITE CONNECTION OPTION - ROAD & SHARED PATH PLAN & LONGITUDINAL SECTION

Scale: 0052188 AS SHOWN
Checked by: D.GROVER T.WHITER Approved by: T.WHITER
Drawing No: BEG-BUR-XX-XX-SK-CE-0004

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Appendix B

Oxford PR Sites VISSIM Assessment

Bus Impact Note Addendum

August 2023

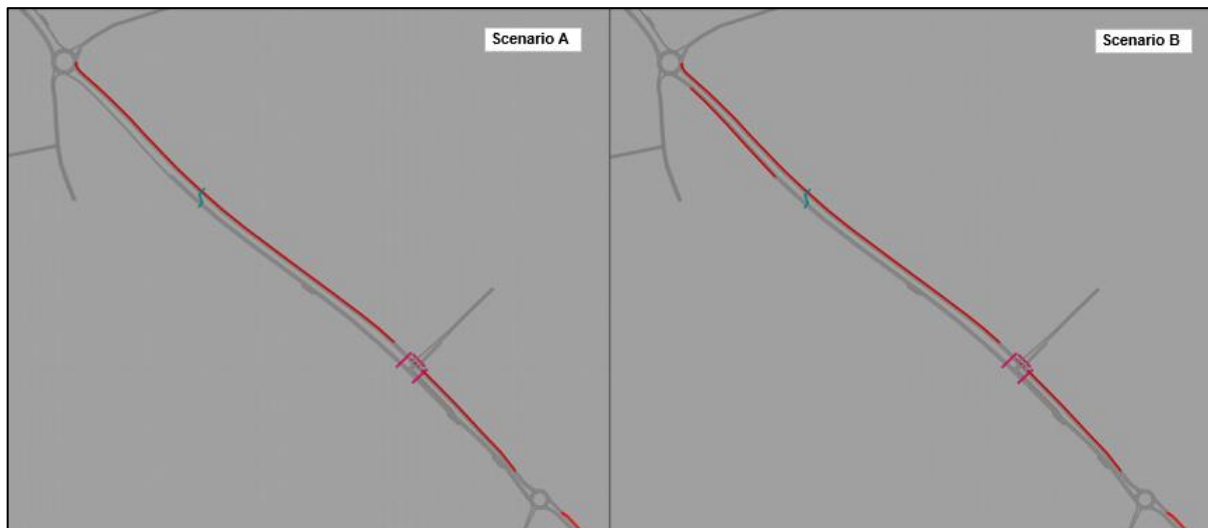
Introduction

1. This Note accompanies the Bus Impact Note issued on 2nd August 2023.
2. Two further tests have been undertaken and involve the addition of bus lanes to the DS scenarios. These tests have been assessed in all three mode shift scenarios (Low, Core, and High).
3. An analysis of the bus journey times along key routes across the model extent are given in the following sections. The full breakdown of the journey times along the sections making up the routes presented in Table 1 and Table 2 can be found in Appendix A at the end of this document.

Bus Lane Test Scenarios

4. The two bus lane tests are:
 - a. A southbound bus lane added between the A44/Sandy Lane/Rutten Lane Roundabout and Cassington Road Roundabout.
 - b. Above, plus a northbound bus lane added on the approach to the A44/Sandy Lane/Rutten Lane Roundabout.
5. The model coding for Scenario A (SB only bus lane), and Scenario B (NB + SB bus lanes), is shown below in Figure 1. The bus lane sections are highlighted in red.

Figure 1: Bus Lane Set-Up in VISSIM



AM Peak Results

6. The Table overleaf shows the bus journey time differences along the three main corridors in the model covered by bus routes, namely the A44/A4144 NB/SB, A4260/A4165 NB/SB, and A40 EB/WB. Each scenario has been compared to the 2031 Reference Case for the relevant time period and demonstrates the journey time change.

Table 1: AM Bus Journey Time Changes (seconds) in Comparison to Ref

Route	07:00-08:00								
	Low Mode Shift			Core Mode Shift			High Mode Shift		
	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB
A44/A4144 NB	138	131	110	129	131	109	118	135	102
A44/A4144 SB	215	104	122	160	83	82	97	62	59
A4260/A4165 NB	58	42	44	71	57	38	50	26	45
A4260/A4165 SB	9	10	-2	24	-18	4	-18	-17	-6
A40 EB	10	7	2	25	4	4	5	9	10
A40 WB	-1	-5	2	0	-5	0	2	-2	-3
Route	08:00-09:00								
	Low Mode Shift			Core Mode Shift			High Mode Shift		
	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB
A44/A4144 NB	224	134	161	226	145	132	145	125	91
A44/A4144 SB	490	135	186	371	147	117	226	44	55
A4260/A4165 NB	112	79	56	29	41	49	67	23	33
A4260/A4165 SB	-27	-58	-47	-105	-126	-91	-129	-149	-118
A40 EB	20	3	56	25	-10	-9	6	-15	-4
A40 WB	3	0	1	1	-1	8	4	3	10
Route	09:00-10:00								
	Low Mode Shift			Core Mode Shift			High Mode Shift		
	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB
A44/A4144 NB	376	181	211	217	121	134	130	114	95
A44/A4144 SB	529	180	218	555	255	214	192	94	111
A4260/A4165 NB	379	403	312	67	47	165	38	-4	38
A4260/A4165 SB	75	135	132	-16	-19	-13	-14	-15	0
A40 EB	191	92	264	77	-16	-26	-10	-28	-32
A40 WB	1	0	0	-9	-2	-1	-3	-4	0

7. Results show that the addition of the southbound bus lane results in journey time improvements on the A44/A144 SB and NB routes. The main journey time saving on the A44 SB is between Sandy Lane and Cassington Road roundabouts, where the new bus lane is located. The individual journey time sections along this route demonstrate that some delay is shifted north of the Sandy Lane roundabout as private vehicles lose the second lane between Sandy Lane and Cassington. Overall however, the southbound buses show a considerable net reduction in journey times compared to the original DS scenarios.
8. The A44/A144 NB route also improves in Scenario A, primarily on the northbound section between Cassington Lane and Sandy Lane. This appears to be because vehicles on the A44 northbound approach to Sandy Lane are slightly less hesitant due to fewer lane changes on the roundabout when private vehicles can only use the one lane to exit southbound. Furthermore, delays on the southbound approach to the roundabout have increased (due to private vehicles losing a lane to the bus lane), which reduces throughput north to south at Sandy Lane meaning fewer trips and more gap opportunities for vehicles travelling northbound.
9. When the northbound bus lane section is added in Scenario B, the A44 northbound generally shows additional journey time reductions as the buses are able to bypass the queues on the approach to Sandy Lane roundabout. It is demonstrated in the individual journey time sections in Appendix A that instances where the northbound route has higher journey times in ScB compared with ScA are because of small journey time variations elsewhere; A44 northbound to Sandy Lane improves in all B scenarios compared to A.

PM Peak Results

10. The Table below displays the journey time changes compared to the Reference Case for the PM peak.

Table 2: PM Bus Journey Time Changes (seconds) in Comparison to Ref

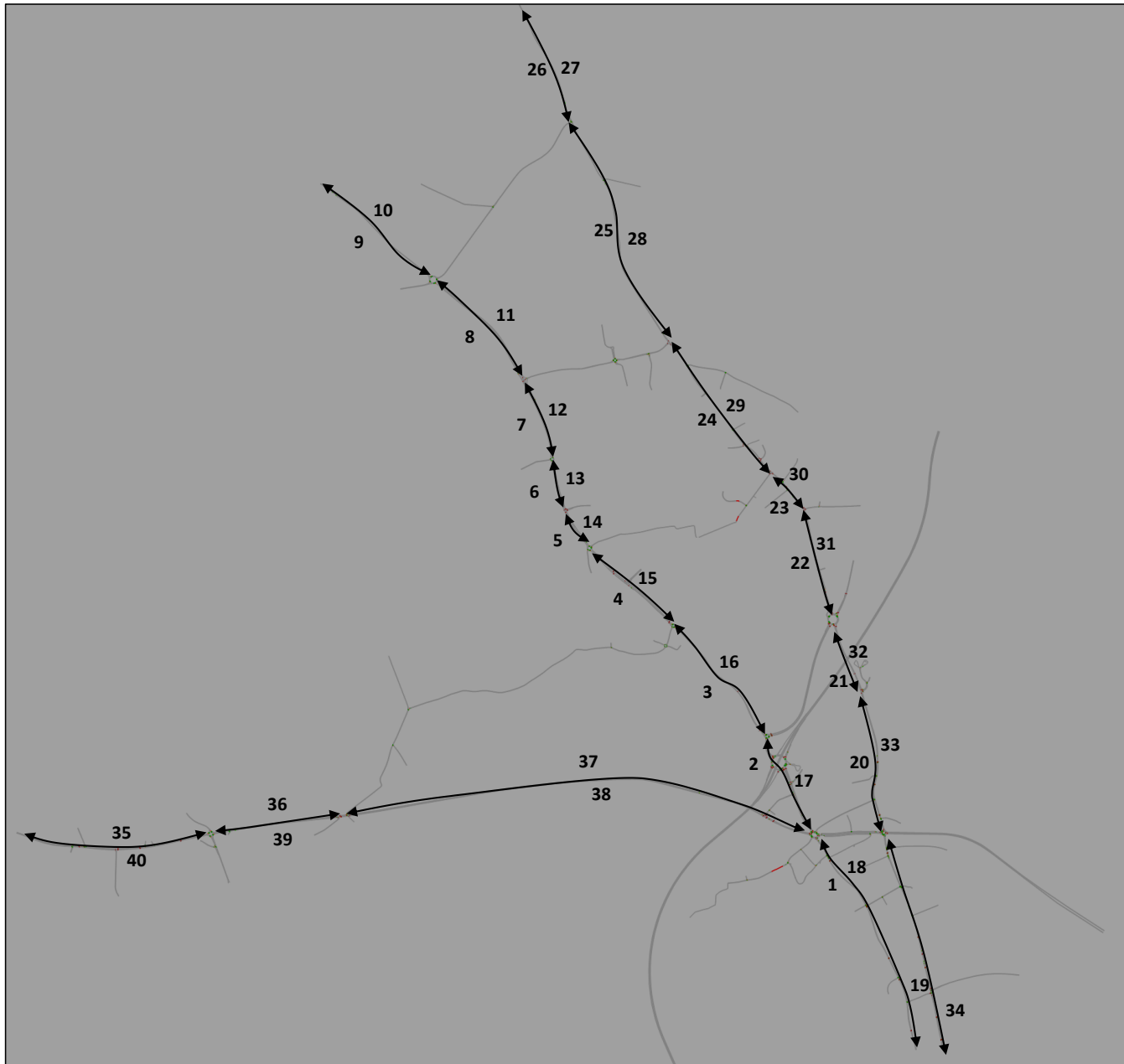
Route	15:00-16:00								
	Low Mode Shift			Core Mode Shift			High Mode Shift		
	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB
A44/A4144 NB	91	88	79	75	75	69	74	73	69
A44/A4144 SB	110	98	85	99	81	95	93	82	90
A4260/A4165 NB	30	34	32	27	16	27	16	19	15
A4260/A4165 SB	36	32	36	34	35	28	38	32	34
A40 EB	12	14	12	15	25	18	11	7	22
A40 WB	-5	-3	-1	-1	-2	2	0	0	-4
Route	16:00-17:00								
	Low Mode Shift			Core Mode Shift			High Mode Shift		
	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB
A44/A4144 NB	84	66	78	80	72	70	65	68	49
A44/A4144 SB	352	156	172	297	171	153	284	144	168
A4260/A4165 NB	48	43	58	37	43	37	38	45	23
A4260/A4165 SB	57	49	61	66	60	54	50	39	40
A40 EB	21	22	26	12	17	17	4	5	4
A40 WB	1	-4	5	4	-3	-1	3	3	0
Route	17:00-18:00								
	Low Mode Shift			Core Mode Shift			High Mode Shift		
	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB	DS	DS ScA	DS ScB
A44/A4144 NB	72	46	68	51	47	48	39	31	32
A44/A4144 SB	799	233	279	790	266	227	711	207	207
A4260/A4165 NB	68	63	73	53	39	47	22	31	25
A4260/A4165 SB	91	75	63	69	55	62	79	59	52
A40 EB	9	11	13	9	7	9	5	9	13
A40 WB	-4	-1	-7	-10	-13	-7	1	-4	-4

11. Like the AM, the addition of the southbound bus lane means journey times improve in Scenarios A and B on the A44/A4144 NB and SB. The southbound journey times reduce significantly in the third peak hour, with time savings of over 8 minutes in all mode shift scenarios compared to each original DS. These improvements are focused on the bus lane section between Sandy Lane and Cassington Road. Similar to the AM, there are some delay shifts just north of Sandy Lane roundabout as private vehicles lose stacking space on the approach to Cassington.
12. Journey time reductions are observed on A44 northbound to Sandy Lane in both Scenario A and Scenario B compared to the original DS. These are a result of the same reasons as mentioned for the AM. Scenario B does not show as much additional journey time saving on average over Scenario A in the PM as it does in the AM. This is because delays on the northbound approach to Sandy Lane are not as significant in the PM, and so there is limited benefit to be had from the northbound bus lane.



Appendix A

Journey Times by Section



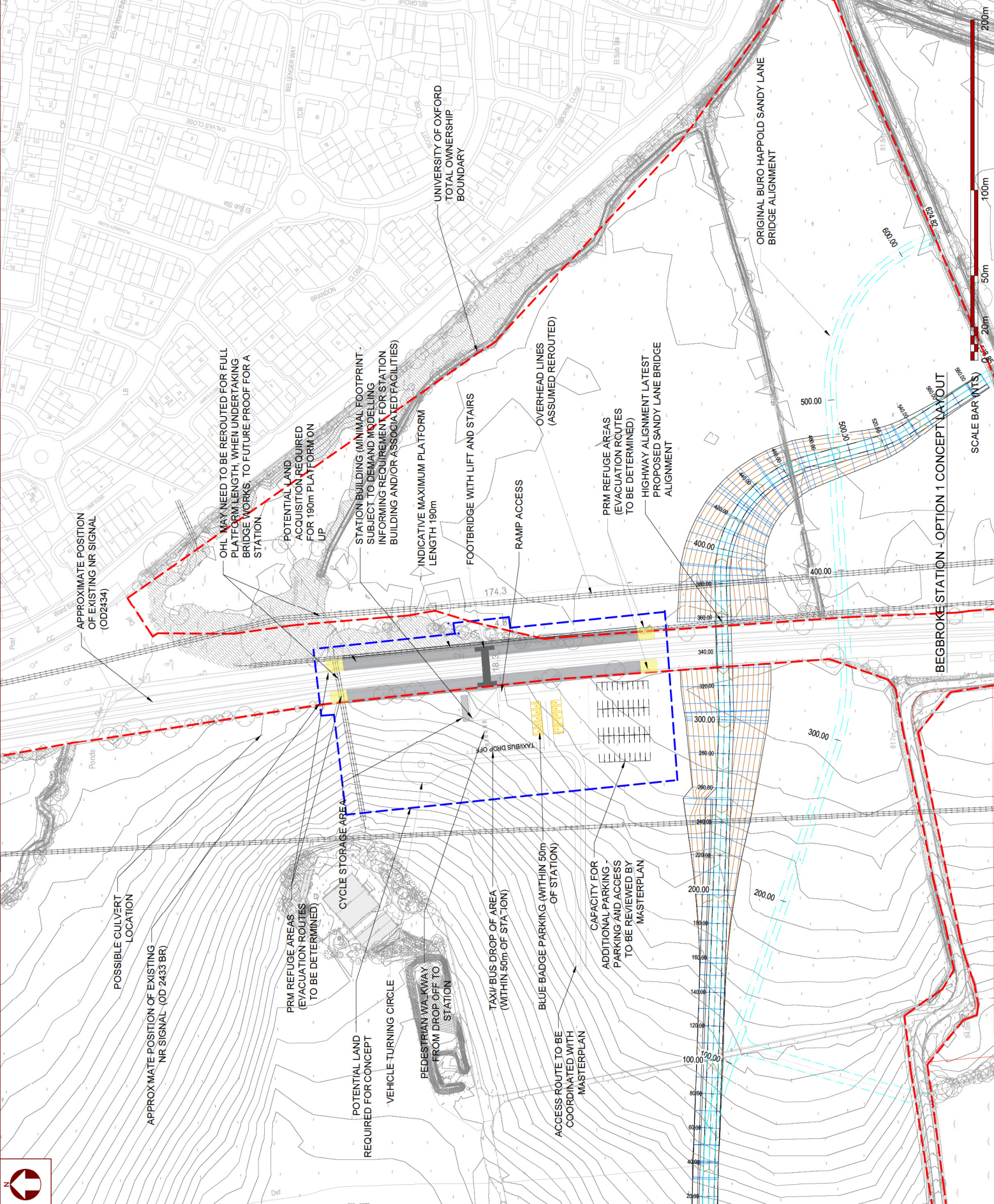
AM

Route	Section	Journey Time (Seconds)																																									
		07:00-08:00														08:00-09:00														09:00-10:00													
		Ref	DS Low	DS Low SB Bus	DS Low NB + SB Bus	DS Core	DS Core SB Bus	DS Core NB + SB Bus	DS High	DS High SB Bus	DS High NB + SB Bus	Ref	DS Low	DS Low SB Bus	DS Low NB + SB Bus	DS Core	DS Core SB Bus	DS Core NB + SB Bus	DS High	DS High SB Bus	DS High NB + SB Bus	Ref	DS Low	DS Low SB Bus	DS Low NB + SB Bus	DS Core	DS Core SB Bus	DS Core NB + SB Bus	DS High	DS High SB Bus	DS High NB + SB Bus												
A44/A4144 NB	1	A4144 Woodstock Rd NB to Wolvercote Roundabout	368	382	385	383	385	389	385	382	387	384	361	383	381	383	381	388	381	376	389	376	367	390	386	385	383	393	384	379	390	381											
	2	A44 Woodstock Rd NB Wolvercote Roundabout to Loop Farm Roundabout	146	176	178	172	177	170	169	169	170	164	166	196	195	228	212	183	182	177	175	174	163	258	248	271	200	180	180	173	178	173											
	3	A44 Woodstock Rd NB Loop Farm Roundabout to Cassington Rd	80	89	88	89	87	88	88	88	87	80	86	93	93	91	96	93	90	89	90	89	80	86	84	87	83	82	81	85	82	83											
	4	A44 Woodstock Rd NB Cassington Rd to Sandy Lane	93	142	124	108	127	126	120	129	128	109	109	220	135	114	215	143	121	175	136	112	95	272	128	115	186	133	122	159	128	111											
	5	A44 Woodstock Rd NB Sandy Lane to Begbroke HI	27	32	34	35	34	33	36	35	40	38	29	40	47	56	46	62	79	48	50	59	28	68	32	44	55	36	64	34	38	41											
	6	A44 Woodstock Rd NB Begbroke HI to Spring Hill Rd	33	59	61	62	60	65	63	56	63	61	37	69	68	70	66	66	65	64	71	66	33	64	65	69	65	63	62	62	64	65											
	7	A44 Woodstock Rd NB Spring Hill Rd to Langford Ln	55	56	56	56	56	56	56	56	56	56	56	56	57	57	56	56	57	55	56	56	54	56	56	56	55	55	56	56	55	56											
	8	A44 Woodstock Rd NB Langford Ln to Bladon Roundabout	90	93	93	93	93	93	93	93	93	93	93	93	93	93	92	93	93	93	94	94	92	92	93	92	93	92	92	92	92	93											
	9	A44 Woodstock Rd NB from Bladon Roundabout	99	102	102	102	101	100	100	101	100	101	102	101	102	102	102	102	103	102	101	102	102	104	103	104	104	102	102	105	103	102	105										
A44/A4144 SB	10	A44 Woodstock Rd SB to Bladon Roundabout	130	128	127	127	126	127	126	128	127	128	126	126	127	127	126	127	124	124	124	124	124	124	124	124	124	124	124	124	124	123	124										
	11	A44 Woodstock Rd SB Bladon Roundabout to Langford Ln	79	79	78	79	78	79	78	79	78	78	82	80	79	80	79	79	79	78	78	79	78	78	78	78	78	78	78	78	78	78											
	12	A44 Woodstock Rd SB Langford Ln to Spring Hill Rd	93	72	74	71	68	74	72	71	71	70	119	82	76	85	74	79	75	72	76	71	63	66	65	66	67	72	68	66	64	63											
	13	A44 Woodstock Rd SB Spring Hill Rd to Begbroke HI	27	76	94	99	80	77	77	72	77	70	30	78	102	121	72	127	93	76	81	78	26	75	91	128	78	192	116	73	82	74											
	14	A44 Woodstock Rd SB Begbroke HI to Sandy Ln	41	77	91	94	67	77	83	66	72	72	62	82	119	118	73	114	107	81	88	102	41	55	64	75	63	81	73	60	62	61											
	15	A44 Woodstock Rd SB Sandy Lane to Cassington Rd	70	225	82	81	181	82	81	128	80	80	71	484	82	86	404	84	83	262	84	84	90	436	84	85	414	81	82	187	77	78											
	16	A44 Woodstock Rd SB Cassington Rd to Loop Farm Roundabout	95	94	94	94	97	95	94	93	94	94	97	102	99	100	98	96	100	96	94	95	106	130	121	126	129	103	114	102	99	105											
	17	A44 Woodstock Rd SB Loop Farm Roundabout to Wolvercote Roundabout	157	163	165	164	163	164	161	160	162	160	215	255	233	260	239	233	244	224	198	214	249	335	320	310	320	375	290	330	274	278	299										
	18	A4144 Woodstock Rd SB from Wolvercote Roundabout	399	394	391	404	391	399	400	392	393	398	578	583	600	591	588	591	593	594	592	590	367	375	380	371	373	379	376	374	377	375											
A4260/A4165 NB	19	A4165 Banbury Rd NB to Cutteslowe Roundabout	328	336	336	339	336	336	334	335	328	337	391	396	382	374	363	381	365	354	361	348	676	689	691	371	371	459	296	343	353												
	20	A4165 Banbury Rd / Oxford Rd NB Cutteslowe Roundabout to Park and Ride	234	237	260	259	259	259	258	257	258	243	268	265	266	266	271	270	269	271	270	240	267	268	266	264	261	264	266	263	264												
	21	Oxford Rd NB Park and Ride to Killington Roundabout	92	94	93	93	94	94	96	94	94	94	92	94	92	94	94	92	91	91	94	92	90	90	93	92	90	90	91	91	91												
	22	A4260 Oxford Rd NB Killington Roundabout to Bicester Rd	117	118	117	118	120	117	115	119	119	118	121	127	126	121	122	126	126	128	124	123	119	123	127	125	117	115	118	117	116	118											
	23	A4260 Oxford Rd NB Bicester Rd to Yarnton Rd	56	59	57	57	60	58	58	58	55	58	66	70	68	70	65	64	66	64	67	65	68	68	69	68	63	64	65	63	63												
	24	A4260 Oxford Rd NB Yarnton Rd to Langford Ln	225	242	232	229	247	244	233	233	228	233	279	327	310	290	274	296	283	317	282	290	268	288	294	265	293	269	316	276	252	279											
	25	A4260 Oxford Rd NB Langford Ln to A4095	151	152	152	148	153	153	152	152	149	153	148	151	144	152	148	149	149	147	147	151	151	153	148	150	150	150	148	150	150	148											
26	A4260 Banbury Rd NB from A4095	119	121	118	122	125	125	116	124	118	123	123	122	115	120	124	118	121	123	122	118	118	115	116	116	117	120	121	125	122	118	123											
A4260/A4165 SB	27	A4260 Banbury Rd SB to A4095	136	134	134	134	131	131	131	129	129	138	130	130	131	130	130	130	134	134	133	128	126	127	127	127	126	124	130	131	132												
	28	A4260 Banbury Rd SB A4095 to Langford Ln	175	185	173	170	215	169	183	175	171	172	228	240	207	211	208	197	213	186	177	203	174	174	187	173	171	169	179	171	180												
	29	A4260 Oxford Rd SB Langford Ln to Yarnton Rd	237	234	238	236	234	232	234	234	231	234	247	249	243	245	238	233	235	238	237	238	243	247	241	247	239	238	237	233	237												
	30	A4260 Oxford Road SB Yarnton Rd to Bicester Rd	77	78	75	74	72	72	72	72	74	75	80	78	80	79	76	76	76	76	76	76	73	78	78	82	72	73	70	72	73	75											
	31	A4260 Oxford Rd SB Bicester Rd to Killington Roundabout	114	113	113	114	113	112	112	113	113	114	114	114	114	114	113	113	113	113	112	113	115	117	119	122	113	113	113	114	114	114											
	32	Oxford Rd SB Killington Roundabout to Park and Ride	74	76	74	75	75	75	75	74	75	74	74	75	73	74	74	74	74	74	74	74	74	73	77	80	72	73	72	72	72	72											
A40 EB	33	A4165 Banbury Rd / Oxford Rd SB Park and Ride to Cutteslowe Roundabout	241	268	265	266	263	264	264	259	262	264	278	271	272	275	264	266	269	263	262	265	236	327	363	354	364	260	259	261	259	258	259										
	34	A4165 Banbury Rd SB from Cutteslowe Roundabout	418	393	410	401	393	399	404	396	400	404	502	478	483	487	454	447	461	468	440	439	391	368	373	381	364	365	365	362	363	366											
	35	A40 Eynsham Rd EB to Eynsham Roundabout	182	180	180	182	181	181	181	182	180	181	180	181	180	179	180	178	178	178	178	177	175	175	174	175	174	174	174	174	173	173											
	36	A40 Eynsham Rd EB Eynsham Roundabout to signals	115	115	115	116	115	115	115	115	116	116	110	110	110	109	110	110	110	110	110	110	111	111	111	110	110	110	111	110	110	110	110										
A40 WB	37	A40 WB Wolvercote Roundabout to Eynsham Rd	391	405	401	394	417	395	397	396	402	401	409	428	409	464	434	399	400	416	395	405	419	612	515	686	500	405	397	412	394	392											
	38	A40 WB Wolvercote Roundabout to Eynsham Rd	250	249	248	251	250	248	253	251	249	247	249	246	248	246	245	245	249	250	249	249	249	250	250	248	249	251	252	248	248	250											
	39	A40 Eynsham Rd WB signals to Eynsham Roundabout	86	84	84	85	85	84	85	86	86	85	91	97	91	96	93	91	99	92	92	96	99	100	97	98	93	95	96	96	95	98											
	40	A40 Eynsham Rd WB from Eynsham Roundabout	116	118	115	119	117	116	115	117	116	117	115	114	116	114	117	118	115	117	117	118	117	117	118	118	115	117	116	118	118	117											

Route		Section		Journey Time (Seconds)																																		
				15:00-16:00															16:00-17:00															17:00-18:00				
				Ref	DS Low	DS Low SB Bus	DS Low NB +SB Bus	DS Core	DS Core SB Bus	DS Core NB +SB Bus	DS High	DS High SB Bus	DS High NB +SB Bus	Ref	DS Low	DS Low SB Bus	DS Low NB +SB Bus	DS Core	DS Core SB Bus	DS Core NB +SB Bus	DS High	DS High SB Bus	DS High NB +SB Bus	Ref	DS Low	DS Low SB Bus	DS Low NB +SB Bus	DS Core	DS Core SB Bus	DS Core NB +SB Bus	DS High	DS High SB Bus	DS High NB +SB Bus					
A44/A4144 NB	1	A4144 Woodstock Rd NB to Wolvercote Roundabout	369	383	380	381	378	377	378	377	376	378	378	385	384	383	385	386	385	383	383	382	394	401	401	401	399	397	400	394	395	395						
	2	A44 Woodstock Rd NB Wolvercote Roundabout to Loop Farm Roundabout	148	165	162	159	155	155	153	153	156	155	172	188	179	196	186	178	191	175	181	175	175	195	185	209	182	191	193	172	178	181						
	3	A44 Woodstock Rd NB Loop Farm Roundabout to Cassington Rd	78	81	80	80	81	82	82	80	81	81	82	83	83	83	82	83	83	82	81	81	86	85	85	85	85	83	84	84	83	83						
	4	A44 Woodstock Rd NB Cassington Rd to Sandy Lane	87	116	113	108	116	113	109	115	112	108	97	119	115	109	118	112	108	119	113	106	100	121	117	108	119	116	108	122	116	108						
	5	A44 Woodstock Rd NB Sandy Lane to Begbroke Hill	28	24	25	25	24	25	24	24	24	25	29	27	28	28	26	27	27	26	28	27	28	26	26	26	26	26	26	28	25	29						
	6	A44 Woodstock Rd NB Begbroke Hill to Spring Hill Rd	34	64	71	67	63	64	63	67	65	62	37	72	65	68	71	73	67	69	67	68	48	74	72	73	73	73	70	77	72	72						
	7	A44 Woodstock Rd NB Spring Hill Rd to Langford Ln	55	56	55	56	56	56	56	55	56	55	55	55	56	56	55	56	55	55	56	55	57	57	57	56	56	56	57	57	56	56						
	8	A44 Woodstock Rd NB Langford Ln to Bladon Roundabout	92	92	91	93	93	93	93	92	93	93	93	94	95	94	95	95	94	94	96	94	108	109	99	101	105	99	104	104	99	104						
	9	A44 Woodstock Rd NB Bladon Roundabout	102	102	103	103	102	103	103	104	104	104	103	102	103	103	104	104	102	104	103	103	106	105	106	106	105	107	105	105	105	105						
	A44/A4144 SB	10	A44 Woodstock Rd SB to Bladon Roundabout	121	120	121	121	121	122	121	120	120	125	123	123	123	123	123	123	123	124	124	124	124	124	124	124	123	123	124	122	123						
11		A44 Woodstock Rd SB Bladon Roundabout to Langford Ln	77	77	78	77	78	77	77	77	77	77	77	77	78	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77						
12		A44 Woodstock Rd SB Langford Ln to Spring Hill Rd	61	60	61	59	60	60	59	60	60	59	66	61	63	60	61	64	61	61	62	62	70	67	64	64	66	61	61	64	61	63						
13		A44 Woodstock Rd SB Spring Hill Rd to Begbroke Hill	28	54	56	54	54	56	57	56	54	57	31	60	73	72	58	86	71	61	63	87	30	65	117	152	60	142	115	60	101	94						
14		A44 Woodstock Rd SB Begbroke Hill to Sandy Ln	37	52	53	56	50	54	58	48	53	51	43	84	102	111	76	105	108	85	101	107	45	105	137	135	87	140	127	68	133	130						
15		A44 Woodstock Rd SB Sandy Lane to Cassington Rd	63	104	73	75	88	73	75	85	73	74	68	298	80	82	249	82	81	235	80	81	70	710	84	82	735	85	84	683	80	82						
16		A44 Woodstock Rd SB Cassington Rd to Loop Farm Roundabout	92	95	95	95	94	95	94	94	94	94	97	122	114	121	124	122	123	126	126	123	97	121	105	117	126	116	117	121	115	117						
17		A44 Woodstock Rd SB Loop Farm Roundabout to Wolvercote Roundabout	179	184	187	184	183	177	185	189	185	182	190	194	194	199	198	191	189	191	190	184	180	195	186	190	185	182	185	185	179	183						
18		A4144 Woodstock Rd SB from Wolvercote Roundabout	338	360	369	361	366	363	365	360	363	373	563	593	590	587	591	579	582	584	583	585	345	375	379	378	371	380	377	369	378	378						
A4260/A4165 NB		19	A4165 Banbury Rd NB to Cutteslowe Roundabout	352	362	360	360	359	358	364	358	359	354	372	371	378	368	364	370	368	367	369	360	393	391	396	396	396	390	382	371	376	371					
	20	A4165 Banbury Rd / Oxford Rd NB Cutteslowe Roundabout to Park and Ride	249	274	275	276	273	272	274	272	272	261	288	291	291	285	287	284	286	286	287	264	294	298	296	291	292	296	290	290	288							
	21	Oxford Rd NB Park and Ride to Killington Roundabout	94	96	97	94	94	94	94	93	95	95	97	98	99	100	97	98	97	98	98	98	100	100	99	98	101	100	100	98	99	99						
	22	A4260 Oxford Rd NB Killington Roundabout to Bicester Rd	114	114	116	116	117	113	113	112	117	117	117	119	116	118	122	121	117	119	119	121	121	124	125	126	125	124	119	122	121	122						
	23	A4260 Oxford Rd NB Bicester Rd to Yarnton Rd	59	59	58	57	56	57	57	58	58	55	56	55	56	58	55	55	54	56	55	56	57	56	60	58	55	58	56	57	56	56						
	24	A4260 Oxford Rd NB Yarnton Rd to Langford Ln	219	216	214	216	214	214	216	209	213	207	219	215	213	217	210	216	214	213	213	207	217	218	217	222	218	218	215	209	209	214						
	25	A4260 Banbury Rd NB Langford Ln to A4095	154	149	152	150	153	152	152	155	150	151	148	151	150	151	152	151	149	147	149	148	148	148	145	148	146	150	147	146	148	149	147					
26	A4260 Banbury Rd NB from A4095	117	119	120	120	120	115	116	119	114	115	123	123	122	123	119	125	125	129	133	120	129	130	124	122	125	127	124	120	125	122							
A4260/A4165 SB	27	A4260 Banbury Rd SB to A4095	122	120	120	120	121	121	121	122	121	132	126	126	126	128	129	129	128	128	126	125	129	129	128	128	128	124	124	126	128	129						
	28	A4260 Banbury Rd SB A4095 to Langford Ln	166	164	162	167	161	167	164	166	162	166	167	164	162	169	170	171	167	169	164	169	168	164	164	164	167	169	167	166	166	166						
	29	A4260 Oxford Rd SB Langford Ln to Yarnton Rd	231	235	236	237	231	233	230	234	233	235	237	242	236	238	245	245	240	241	241	238	246	250	247	248	245	243	246	246	247	242						
	30	A4260 Oxford Road SB Yarnton Rd to Bicester Rd	70	70	71	71	72	70	70	71	71	70	70	73	71	73	74	73	74	75	73	73	69	78	75	75	78	78	75	81	75	74						
	31	A4260 Oxford Rd SB Bicester Rd to Killington Roundabout	112	113	114	114	114	113	114	114	113	113	115	117	117	117	116	115	116	115	117	116	112	120	118	118	119	117	117	119	118	117						
	32	Oxford Rd SB Killington Roundabout to Park and Ride	74	75	74	74	74	74	74	75	75	74	73	75	74	73	74	74	74	75	74	73	72	74	73	72	73	73	73	73	73	73						
	33	A4165 Banbury Rd / Oxford Rd SB Park and Ride to Cutteslowe Roundabout	225	255	253	254	258	254	252	255	254	253	223	250	250	252	251	250	249	247	248	250	226	256	256	253	254	257	255	258	255	257						
34	A4165 Banbury Rd SB from Cutteslowe Roundabout	367	371	369	367	370	371	371	370	371	368	391	418	421	420	417	411	413	408	403	402	379	416	410	398	402	393	399	403	392	390							
A40 EB	35	A40 Eynsham Rd EB to Eynsham Roundabout	130	131	130	131	130	132	130	132	134	139	138	139	138	136	137	139	138	140	137	138	139	138	138	137	138	137	138	137	138	138						
	36	A40 Eynsham Rd EB Eynsham Roundabout to signals	114	114	113	114	114	114	114	114	114	114	111	111	111	112	111	111	112	112	112	111	109	109	109	109	110	109	110	109	110	109						
	37	A40 EB Eynsham Rd to Wolvercote Roundabout	398	409	413	409	413	421	416	414	410	416	394	417	417	422	410	414	411	399	398	400	364	371	373	376	372	371	372	369	373	377						
A40 WB	38	A40 WB Wolvercote Roundabout to Eynsham Rd	244	242	244	244	245	245	247	245	243	238	241	239	243	242	238	239	240	241	241	241	241	243	245	245	245	242	241	242	243	242						
	39	A40 Eynsham Rd WB signals to Eynsham Roundabout	93	88	90	90	90	91	90	92	93	91	93	93	92	94	96	94	94	95	95	89	112	104	106	99	100	100	104	109	107	106						
	40	A40 Eynsham Rd WB from Eynsham Roundabout	116	117	115	117	116	119	116	115	115	115	119	117	115	117	116	115	116	115	117	119	118	119	119	119	119	119	118	119	118	119						

Appendix C

- Notes/Legend:
- DO NOT SCALE FROM THIS DRAWING
 - ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE
 - OS MAP OBTAINED FROM BURO HAPPOLD PROPOSED ROAD AND SURFACING OPTION 3 REV/SK01
 - THIS CONCEPT LAYOUT HAS BEEN PROVIDED TO INFORM BEGBROKE MASTERPLAN STUDIES, BASED ON TYPICAL STATION LAYOUTS. THIS DRAWING DOES NOT CONSTITUTE A DESIGN SOLUTION AND SHOULD ONLY BE USED FOR INFORMATION PURPOSES ONLY
 - SABLE LEIGH CONSULTANCY LIMITED AND ASSOCIATED BUSINESS DO NOT TAKE ANY RESPONSIBILITY FOR THE ACCURACY OF INFORMATION THAT HAS BEEN PROVIDED BY THE EXTERNAL PARTIES IN THE PRODUCTION OF THIS DRAWING
 - INFORMATION ON DRAWING HAS BEEN SOURCED FROM THE FOLLOWING:
 - BURO HAPPOLD DRAWING 'PROPOSED ROAD ALIGNMENT AND SURFACING OPTION 3' REV/SK01
 - 03/30/09/PRM/22/02/07A BEGBROKE AREA OVERARCHING CONSTRAINTS PLAN
 - THIS CONCEPT LAYOUT IS TO BE REVIEWED IN CONJUNCTION WITH THE ACCOMPANYING TECHNICAL NOTE OUD-SLC-XX-REP-CIV-0001
 - ALL DIMENSIONS SHOWN ON THIS DRAWING ARE INDICATIVE AND SUBJECT TO VALIDATION THROUGH+ DESIGN PROCESS
 - THE POSITION OF ANY EXISTING ASSETS OR SERVICES ON THIS DRAWING REQUIRES CONFIRMATION
 - KEY ASPECTS OF STATION DESIGN, SUCH AS SIGNALLING, DRAINAGE AND MANAGEMENT OF EXISTING SERVICES, HAVE NOT BEEN CONSIDERED AT THIS STAGE



Status: FOR INFORMATION

REV	DATE	DESCRIPTION	DR	CHK	APPD	KM	JF	SP
01	27/01/2023							



Client: OXFORD UNIVERSITY DEVELOPMENT LTD

Project Title: BEGBROKE STATION

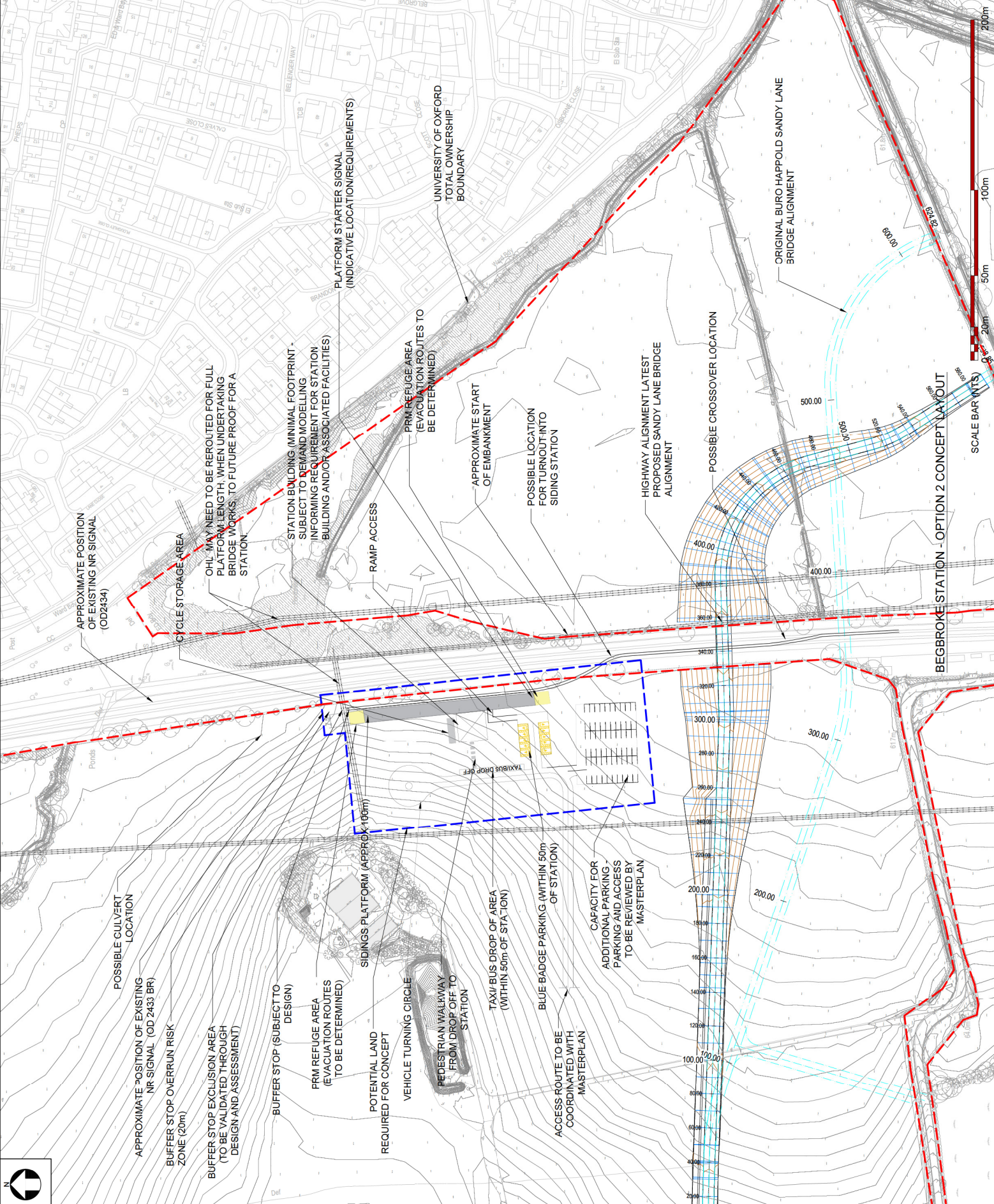
Drawing Title: CONCEPT LAYOUT OPTION 1

Sheet Size: A1 Scale: 1:XXX Sheet: 1 of 1

Drawing Number: OUD-SLC-XX-DRG-CIV-0001-01

Notes/Legend:

- DO NOT SCALE FROM THIS DRAWING
- ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE
- OS MAP OBTAINED FROM BURO HAPPOLD PROPOSED ROAD AND SURFACING OPTIONS REV SK01
- THIS CONCEPT LAYOUT HAS BEEN PROVIDED TO INFORM BEGBROKE MASTERPLAN STUDIES, BASED ON TYPICAL STATION LAYOUTS. THIS DRAWING DOES NOT CONSTITUTE A DESIGN SOLUTION AND SHOULD ONLY BE USED FOR INFORMATION PURPOSES ONLY
- SABLE LEIGH CONSULTANCY LIMITED AND ASSOCIATED BUSINESS DO NOT TAKE ANY RESPONSIBILITY FOR THE ACCURACY OF INFORMATION THAT HAS BEEN PROVIDED BY THE EXTERNAL PARTIES IN THE PRODUCTION OF THE DRAWING
- FOR A SIDING STATION SIGNIFICANT EARTHWORKS ARE REQUIREMENT TO PROVIDE VERTICAL ALIGNMENT WITH THE RAIL CORRIDOR LAYOUT REQUIREMENTS FOR EARTHWORKS, SUCH AS EMBANKMENT GRADING AND/OR PILING HAVE NOT BEEN CONSIDERED AT THIS STAGE AND MAY INFLUENCE FUTURE LAYOUT STUDIES
- INFORMATION ON DRAWING HAS BEEN SOURCED FROM THE FOLLOWING
 - BURO HAPPOLD DRAWING PROPOSED ROAD ALIGNMENT AND SURFACING OPTION 3 REV SK01
 - 03/30CP/PM/22/02/07A BEGBROKE AREA OVERARCHING CONSTRAINTS PLAN
- THIS CONCEPT LAYOUT IS TO BE REVIEWED IN CONJUNCTION WITH THE ACCOMPANYING TECHNICAL NOTE OUD-SLC-XX-DRG-CIV-0001
- ALL DIMENSIONS SHOWN ON THIS DRAWING ARE INDICATIVE AND SUBJECT TO VALIDATION THROUGH DESIGN PROCESS
- THE POSITION OF ANY EXISTING ASSETS OR SERVICES ON THIS DRAWING REQUIRES CONFIRMATION
- KEY ASPECTS OF STATION DESIGN, SUCH AS SIGNALLING, DRAINAGE AND MANAGEMENT OF EXISTING SERVICES HAVE NOT BEEN CONSIDERED AT THIS STAGE
- AT THIS STAGE IT IS FORESEEN THAT THIS OPTION WILL INTRODUCE SIGNIFICANT COMPLICATIONS WITH SIGNALLING AND PERFORMANCE MODELLING, AS WELL AS EXTENSIVE EARTHWORKS, AND IS THEREFORE NOT CONSIDERED THE PREFERRED OPTION



Status: FOR INFORMATION

REV	DATE	DESCRIPTION	DR	CHK	APPD
01	27/01/2023	Initial Version	KM	JF	SP



Client: OXFORD UNIVERSITIES DEVELOPMENTS

Project Title: BEGBROKE STATION

Drawing Title: CONCEPT LAYOUT OPTION 2

Sheet Size: A1 | Scale: 1:XXX | Sheet: 1 of 1

Drawing Number: OUD-SLC-XX-DRG-CIV-0002-01