- *identify the requirement for passenger transport services to serve the development, seek developer funding for these to be provided until they become commercially viable and provide standing advice for developers on the level of Section 106 contributions towards public transport expected for different locations and scales of development;*

- *ensure that developers promote cycling and walking for journeys associated with the new development, including through the provision of effective travel plans;*

- *require that all infrastructure associated with the developments is provided to appropriate design standards and to appropriate timescales;*

- *set local routeing agreements where appropriate to protect environmentally sensitive locations from traffic generated by new developments;*

- *seek support towards the long term operation and maintenance of facilities, services and selected highway infrastructure from appropriate developments, normally through the payment of commuted sums;*

- *secure works to achieve suitable access to and mitigate against the impact of new developments in the immediate area, generally through direct works carried out by the developer."*

2.6 Connecting Oxfordshire: Bus Strategy

2.6.1 The main elements of the strategy are:

- *"Integrated transport building on Oxford's successful policy of land use planning, traffic management, parking management and restraint, and bus promotion, and adaptation of this approach to the rest o the County.*

- *A cohesive and integrated bus network and provision of accessible, high quality infrastructure with clear policies and design standards to guide the development and improvement of route infrastructure.*

- *Tackling congestion and delays by implementing bus priority or other traffic management measures at specific points along the major bus routes to ensure that buses can operate reliably and at commercially attractive speeds.*

- *Adapting the bus network to cater for more complex and dispersed journey patterns and new major development. We will encourage and support the development of more cross-town and cross-area bus routes where these are practically feasible and there is sufficient potential demand.*

- *The development of mass rapid transit systems and routes between Oxford and a proposed new outer ring of Park & ride sites.*

- *The development or upgrading of new high quality Premium urban and interurban services where new development makes it feasible including bus priority measures and enhanced passenger and interchange facilities in:*

    - *Oxford, especially within and linking to the growing Eastern Arc o The Science Vale area,*

- *larger towns outside Oxford,*
- *locations along some strategically important inter-urban routes.*

- *Enabling good onwards access on foot to major destinations facilitating the penetration of bus services as close as possible to the heart of destinations such as town centres, employment areas and hospitals, with conveniently located bus stops.*
- *The further development and extension of integrated and flexible ticketing which will offer a greater range of journey choices than at present, e.g., for part time workers.*
- *The further development of the Quality Bus Partnership approach to focus on improving service punctuality/reliability, information and integration in line with the Government's emerging proposals to strengthen partnerships*
- *Improvements to the securing and use of developer contributions for bus development, by revising our approach to securing and utilising Section 106 developer contributions and making preparations to achieve optimal use of the Community Infrastructure Levy.*
- *Enhanced partnership working with local planning authorities and use of the planning system to achieve better coordination between land use planning and future bus service provision.*
- *Integration with Science Transit to develop new technology and research in bus operation and network development, including autonomous vehicles and integrating the commercial bus network with any future personal rapid transit (PRT) in a complementary way.*

2.7 Technical Guidance

2.7.1 The following technical guidance is relevant to the development:

Planning Practice Guidance (2014)

- *Travel Plans, Transport Assessments and Statements (2014)*
- *Transport evidence bases in plan making and decision taking (2015)*

LTN 1/20 Cycle Infrastructure Design

Manual for Streets (DfT, 2007)

Manual for Streets 2 (CIHT, 2010)

Design Manual for Roads and Bridges (DfT)

- *CD 109 Highway link design;*
- *CD 122 Geometric design of grade separated junctions*
- *CD 123 Geometric design of at-grade priority and signal controlled junctions;*

- *CD 116 Geometric design of roundabouts;*
- *CD 143 Designing for walking, cycling and horse riding*
- *CD 169 The design of lay-bys, maintenance hardstandings, rest areas, service areas and observation platforms*
- *CD 195 Designing for cycle traffic*

Planning for Public Transport in Developments (IHT, 1999)

Providing for Journeys on Foot (IHT, 2000)

Traffic Signs Manual (DfT)

- *Chapter 1 Introduction (2018)*
- *Chapter 5 Road Markings (2019)*
- *Chapter 6 Traffic Control (2019)*

2.8 Other Published Information

2.8.1 The following other published information is relevant to the development:

- *WebTRIS (National Highways) Traffic Information System for SRN*
- *DfT STATS19 Personal Injury Collision Data (2015-2020)*
- *NomisWeb 2011 Census Data*
- *TRICS Travel Demand Survey Database*
- *OCC Highway Boundary Data*
- *OCC Public Rights of Way Data*
- *National Highways Highway Boundary Information*
- *OS detailed mapping*
- *TEMPRO incorporating NRTF 2018*

3.0 EXISTING CONDITIONS

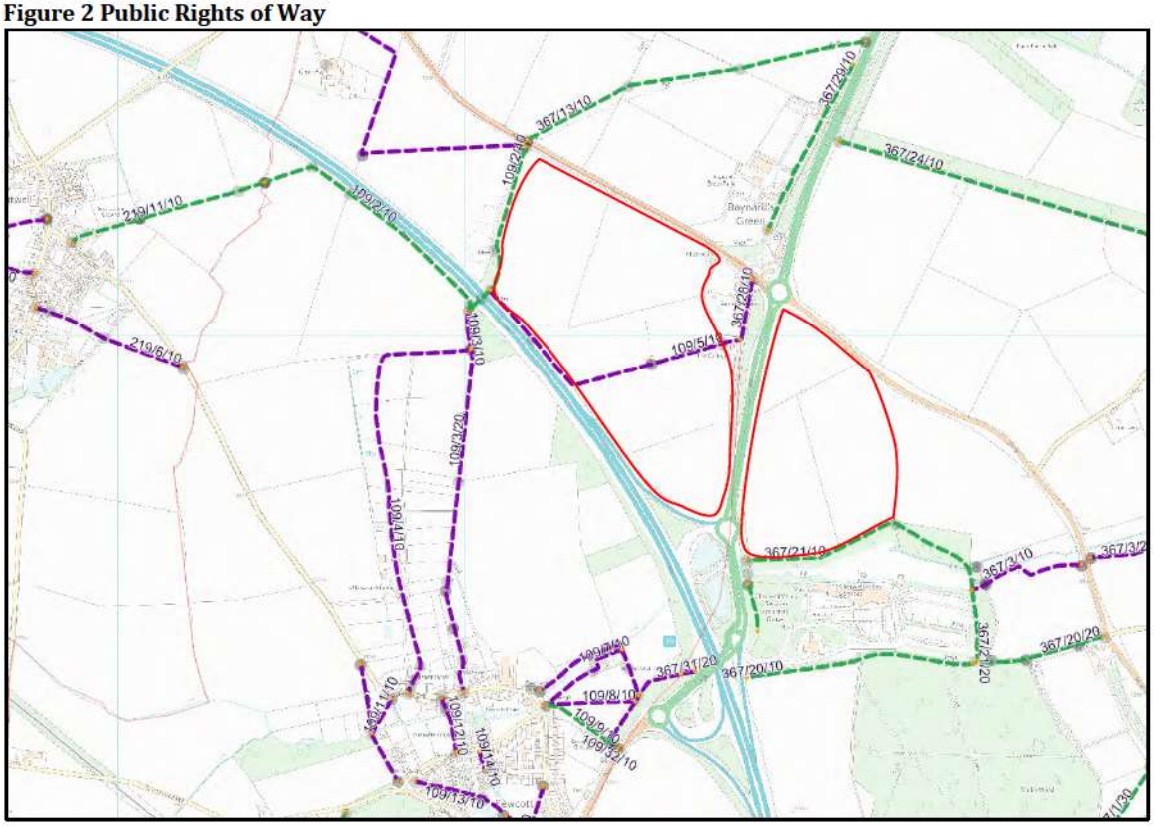
3.1 Site Location

3.1.1 The Western Site is immediately northwest and the Eastern Site is immediately northeast of Padbury roundabout at the southbound off-slip and is bisected by the A43. The larger portion of the site (Western Site) at 43.9Ha is to the west of the A43 with the land to the east (Eastern Site) being 24.2Ha.

3.2 Public Rights of Way (PRoW)

3.2.1 There is no foot or cycleway provision on the A43 or B4100. There are no parts of the National Cycle Network (NCN) in the vicinity of the site. There are several public rights of way which are shown on **Figure 2**.

Figure 2 Public Rights of Way



3.2.2 Bridleway 109/2/40 runs along the western edge of the Western Site. This crosses the M40 motorway at an accommodation overbridge where it turns to follow parallel to the northbound carriageway; the bridleway 109/2/10 continues to the village of Fritwell. A footpath 109/3/10 continues south from the overbridge into Fewcott.

3.2.3 Footpath 109/5/10 follows the southern boundary of the Western Site of land. Approximately midway along the boundary it currently diverts into the Western Site. It joins footpath 367/28/10 south of Baynard House.

3.2.4 Bridleway 367/21/10 runs along the southern boundary of the Eastern Site with the Cherwell Valley Service Area.

3.3 Local Highway Network

3.3.1 To the south the Western Site is bounded by M40 motorway; a dual three lane motorway which runs between London and Birmingham. North of Junction 10, the M40 carries 92,800 vehicle per day (source: DfT Site 73855 [2019]) of which circa 12% are HGV. South of Junction 10, the M40 carries 120,800 vehicle per day (source: DfT Site 18628 [2019]) of which circa 14% are HGV.

3.3.2 The Site is bisected by A43(T); a dual two lane all purpose (D2AP) road which runs between the M40 (adjacent to the Site) and the M1 at Northampton. It serves the settlements of Brackley, Silverstone, Towcester and Northampton. North of the B4100 roundabout the A43 carries 37,000 vehicle per day (source: DfT Site 48791 [2019]) of which circa 12% are HGV.

3.3.3 The junction of A43 and M40 at M40 Junction 10 is a grade separated junction with an off-line motorway service area. The junction comprises the 3-arm Ardley Roundabout junction on the western side linking the northbound carriageway slip roads, the B430 and dual two-lane overbridges.

3.3.4 On the eastern side of the junction is the partially signalised Cherwell Roundabout which provides access to Motorway Service Area (MSA) and the M40 southbound on-slip. The M40 southbound off-slip connects to the Padbury Roundabout immediately to the north of Cherwell Roundabout. The redundant circulatory carriageway across the A43 south arm (as the third arm is entry only) is closed.

3.3.5 To the north the Site is bounded by B4100; a single carriageway road which runs between Bicester and Banbury. The carriageway is relatively wide at 7.5m and it is unlit. The B4100 connects Bicester 5.5km to the south-east of the site to Banbury 13km to the north-east. Banbury is also accessed via the M40 at Junction 11. The section to the east has a flowing alignment but within a wide highway corridor within which there is good forward visibility. Here the B4100 carries 10,400 vehicle per day (source: DfT Site 966790 [2009]) of which circa 5% are HGV.

3.3.6 The section to the west has a straighter alignment and visibility is very good. Here the B4100 carries 10,600 vehicle per day (source: DfT Site 806034 [2018]) of which circa 3% are HGV.

3.3.7 The B4100 is subject to a 60mph speed limit to the west of the A43 and 50mph to the east.

3.3.8 B4095/B4100 Banbury Road Roundabout in located on the ring road around Bicester. It is a four-arm roundabout with a 40m inscribed circular diameter.

3.3.9 To the south of the M40, the A43 becomes the B430 which serves the village of Ardley, Middleton Stoney and Weston on the Green. A new strategic settlement of Heyford Park, circa 5km to the South of the Site, on the former Upper Heyford airbase site is also accessed from this road.

3.3.10 The junction of A43 and B4100 is a large four arm at-grade priority-controlled roundabout. The junction is lit and forward visibility on all approaches is commensurate with the posted speed limits. The roundabout has an inscribed circular diameter of 75m. The circulatory carriageway is 12m wide with lining markings to show two lanes. There are currently no flares on the A43 approaches and there is hatching on the outside of the offside lane to reduce

the effective entry width to two lanes. Entry path curvature on both approaches is larger than recommended in current design guidance (CD116). The B4100 approaches are flared but the road lining does not formally show dual entry lanes. On the eastbound approach hatching significantly reduces the effective flare length. Entry path curvature of both side road approaches is in line with the recommendation in CD116. The exit width on the B4100 east arm is narrower than the recommendation in CD116.

3.3.11 There are roadside services in the north-western quadrant accessed from the B4100W arm. These are served by a priority junction where the right-turn out movement is banned. There is a right turn lane for inbound movements.

3.3.12 The B4100 and B430 are the responsibility of OCC with the A43 and M40 being trunk road and the responsibility of NH.

3.4 Personal Injury Collisions

3.4.1 Personal Injury Collision data (STATS19) data as published by Department of Transport has been reviewed for the most recent available five-year period. The study area includes the area within five kilometres of the site as per the requirements of GG142.

3.4.2 At the Baynard's Green roundabout there have been an average of two reported incidents per year between 2015 and 2020 inclusive. Most incidents were of slight severity. One incident was serious. There are clusters of four incidents at both B4100 entries/A43 exits.

3.4.3 There are no reported incidents on the B4100 frontage of the western site. There was a single slight incident on the eastern site frontage which appears related to the A43 roundabout operation and included above.

3.4.4 Further details are attached in **Appendix D**.

3.4.5 Overall, there are no existing accident patterns that have a bearing on the proposed development.

3.5 Traffic Patterns

3.5.1 Traffic surveys have been commissioned on B4100 and A43 – B4100 roundabout to inform the design of the accesses and traffic appraisal.

3.5.2 Between 19th June to 25th June 2021 inclusive vehicle volumes and speeds were recorded on B4100 to the East of the A43 at the advanced directional sign circa 150m from the roundabout. These are summarised in **Table 1**.

Table 1 B4100 East ATC

Direction	Daily 5 Day Ave.	Daily 7 Day Ave.	Average 85%ile Speed (mph)	Average Mean Speed (mph)
Southeastbound	6906	6407	54.3	48.3
Northwestbound	6478	5941	49.6	41.2

3.5.3 Note that there was greater variance in the northwestbound direction towards the roundabout which appears to be due to queuing during the peak periods.

3.5.4 13th July 2021 to 19th July inclusive vehicle volumes and speeds were recorded on B4100 to the West of the A43. These are summarised in **Table 2**.

Table 2 B4100 West ATC

Direction	Daily 5 Day Ave.	Daily 7 Day Ave.	Average 85%ile Speed (mph)	Average Mean Speed (mph)
Northwestbound	3615	3326	49.4	42.2
Southeastbound	3699	3416	44.8	35.5

3.5.5 The location of the counter was to the west of the services access and there is no indication that any of the data was distorted by the operation of the roundabout.

3.5.6 There are static counters on the A43 and M40 and data is reported on the WebTRIS website. Data for the local network was extracted for 2019 i.e., prior to the pandemic.

3.6 Public Transport

3.6.1 An existing bus service runs along the B4100 frontage past the Eastern Site. There are no existing bus stops in the vicinity of the Site and provision would need to be made as part of the Development. The service is the 505 operated by Stagecoach on a two-year contract supported by developer funding. This service operates from Bicester Village railway station, with onward connections to Oxford and London, along the B4100, past the NW Bicester development site, to the A43 to Brackley. The service loops around Brackley covering the northern urban extension at Radstone Fields. The service currently runs hourly and provides access to two of the main local population centres.

3.6.2 With the ongoing pandemic, this service has been introduced at a difficult time to develop new patronage. OCC expresses concern in its consultation response that the service does not serve the villages within the corridor and query the economic sustainability of the service.

3.7 Committed Developments

3.7.1 Significant growth is planned within Cherwell. Within the Transport Assessment this is accounted for within TEMPRO growth factors. The TEMPRO growth factors are based on the Cherwell 11 MSOA & 2018 RTF. These have been extracted for principal, trunk and motorway road types. The resultant factors are summarised in **Table 3**.

Table 3 TEMPRO Growth Factors

		Future year		
		2019-2024	2019-2025	2019-2031
Average Day	Principal	1.071	1.083	1.133
	Trunk	1.091	1.106	1.162
	Motorway	1.094	1.111	1.184
AM (0700-1000)	Principal	1.061	1.071	1.112
	Trunk	1.080	1.093	1.141
	Motorway	1.084	1.098	1.163
PM (1600-1900)	Principal	1.065	1.076	1.120
	Trunk	1.084	1.098	1.149
	Motorway	1.088	1.103	1.170
Interpeak (1000-1600)	Principal	1.081	1.095	1.156
	Trunk	1.101	1.117	1.186
	Motorway	1.104	1.122	1.208
Offpeak (1900-0700)	Principal	1.065	1.076	1.119
	Trunk	1.085	1.099	1.148
	Motorway	1.088	1.104	1.170

3.7.2 Where flows have been sourced from the Bicester Traffic Model, explicit provision has been made for development as reported within the Uncertainty Log. In addition, there are several developments for which explicit provision has been made at the request of CDC.

- Oxfordshire Growth Board (OGB) allocated funding to improve the capacity of the A43 Baynards Green Roundabout Improvements with associated works at the Padbury Roundabout. The current published information suggests that the design will be completed by August 2022 with construction commencing in November 2022.

- Heyford Park new community on the former RAF Upper Heyford air base is being built out. Planning consent (Most recently LPA Ref: 18/00825/HYBRID) was granted for up to 1,175 dwellings, 60 close care dwellings, 929m^2 retail, 670m^2 medical centre and 35,175m^2 employment uses, 2,415m^2 school buildings, 925m^2 community buildings and 515m^2 indoor sports, 1,000m^2 energy facility, 2,520m^2 additional education facilities and areas of open space. The planning application was supported by a Transport Assessment prepared by PBA/Stantec.

- Great Wolf Resort (LPA Ref: 19/02550/F) has been granted planning permission for a 498-bed hotel and water park resort at Chesterton. Construction is scheduled to start in 2022. The planning application was supported by a Transport Assessment prepared by Motion. Within the TA most of the traffic is assigned via the B430 with 42% routeing south to A34 and M40 Junction 9 and 30% routeing north to M40 Junction 10. At junction 10 the 30% divides 14% to M40 North and 16% to A43.

- North West Bicester Eco-town is an urban extension to the north west of Bicester. The development area extends between the Middleton Stoney Road to the south and B4100 to the north. The exemplar phase has been constructed to the north of the site with access from B4100. A Transport Assessment for the site was prepared by White Young Green

(WYG) which reports the results of assignment modelling. The form of outputs therefore differs from other developments in area in that constrained trip matrices are presented. The development flows have therefore been derived from the differences between do-minimum and do-something tests.

- A4095/B4100 Banbury Roundabout Improvements are proposed. This junction is of relevance to NW Bicester being on its direct boundary. OCC recently consulted on design options at this location which explored the balance of user priorities. The results of the consultation have not been published at the time of writing.

- Axis 9 Bicester (LPA Ref: Ref: No. 14/01675/OUT as amended by NMA 19/00347/OUT and MMA 20/03199/OUT) is an Albion Land development and part of the North West Bicester Eco-town. Phases 1 and 2 are currently implemented or under-construction. The applications were supported by Transport Assessments prepared by DTA.

3.8 Oxfordshire Strategic Rail Freight Interchange

3.8.1 A scoping report for an SRFI to the south of M40 Junction 10 has been published. This development proposal is at an early (scoping) stage with little information publicly available to inform an understanding of the potential cumulative effects. Whilst the scoping report sets out the likely land requirements to achieve access to the SRFI including the reconfiguration of M40 Junction 10 there are no estimates of the likely traffic demand, how this will manifest on the transport system, nor the nature of wider transport mitigation that would be delivered. As such, the cumulative impacts cannot be explicitly assessed at this stage and this scheme is not included in the cumulative assessment.

4.0 PROPOSED DEVELOPMENT

4.1 Development

4.1.1 The development of an employment site at M40 Junction 10 is proposed by Albion Land. The Development is commercial warehousing supporting the current and future requirements of the logistics industry.

4.1.2 The indicative masterplan is attached (**Appendix A**) however details of scale layout, appearance and landscaping are reserved for future approval. The Western Site application seeks outline consent within an overall area of 180,000m^2. The Eastern Site application seeks outline consent for the Eastern Development within an overall area of 100,000m^2.

4.1.3 To support the implementation of the Development, a separate application for full planning permission has been submitted for Enabling Works. The Enabling Works relate to the Western Site only and include the construction of the new site access roundabout, an internal link road incorporating a bus layby, internal roundabout, and other works.

4.1.4 The indicative construction programme for both Sites will last for three years commencing on 2022 with the development reaching completion by June 2025.

4.2 Travel Plan

4.2.1 The access strategy for the Site has been developed in tandem with the Framework Travel Plans (FTP) to ensure coherence of approach and to meet the requirements of NPPF at paragraph 113. The FTPs set out the sustainable travel policies for the Developments with an emphasis on walking, cycling and public transport rather than reliance on the private car.

4.2.2 Given that a significant proportion of employees are likely to originate from Bicester including from the planned residential areas which will be subject to their own sustainable travel policies there is significant scope to achieve a more balanced mode share than was reported in the 2011 Census. Census derived estimates and indicative targets are set out in **Table 4**.

Table 4 Travel Plan Mode Share Baseline and Targets

	Train	Bus	Taxi	m/c	Car driver	Car passenger	Bicycle	On foot
2025 Initial	0.0%	7.5%	0.0%	2.0%	72.0%	11.5%	6.0%	1.0%
2030 Target	0.0%	10.0%	0.0%	2.0%	62.0%	15.0%	10.0%	1.0%

4.2.3 As can be seen from the mode share cycling and public transport are important and will be increasingly going forward. The FTP contains specific measures to help reduce single occupancy car borne traffic, which will include bus services, car sharing databases and personal travel planning.

4.3 Pedestrian and Cycle Access

4.3.1 The pedestrian and cycle access strategy will encourage access to/from the Sites and between the Sites by non-vehicular modes.

4.3.2 Bicester will be a significant origin for many trips to the Development and the B4100 corridor is both direct and without adverse gradients for cyclists. On carriageway speeds are however relatively high and it is proposed to provide segregated provision. These off-site works will be provided within the existing highway extents and delivered by S278 agreement or contribution. The route, as shown on **DTA Drawings 17213-18-XX** will be 3m wide with a margin between the path and the edge of carriageway. Where land is constrained, the margin will be reduced or removed and the path narrowed however less than 10% of the route is so constrained. This will not have a material impact of the quality of the route considering the quantum and tidality of demand (allowing for future mode shift).

4.3.3 The nearby villages of Ardley, Fritwell and Stoke Lyne are within a convenient walking distance (2km) of the site although access is via unmetalled footpaths and bridleways and there is limited formal footway provision on the existing roads within the area. The planned settlement at the former Upper Heyford airfield also has very limited connectivity with adjacent communities although this would be addressed by the SRFI proposals which would re-establish connections.

4.3.4 There is a footpath 109/5/10 which follows the southern boundary of the Western Site. Approximately midway along the southern boundary it diverts into the Western Site. It joins footpath 367/28/10 south of Baynard House. Footpath 109/5/10, within the Western Site will be diverted to ensure that there is little conflict between users of the path and the operations on the Development. Approval of this footpath diversion is sought as part of the enabling works application.

4.3.5 There are existing roadside services at Baynards Green including a Spar shop and McDonalds and Greggs restaurants which will be used by employees and visitors.

4.3.6 The Oxfordshire Growth Board scheme will fully signalise the Baynard's Green Roundabout. This will provide the opportunity to provide for pedestrians and cyclists with the incorporation of signal-controlled toucan crossings, largely on a walk with traffic basis. If the respective implementation timetables do not align with the delivery of the Development a standalone crossing to the south of the roundabout will be provided via a section 278 agreement. The exit crossing could be retained within the eventual scheme whereas the entry crossing would ultimately be redundant post Oxford Growth Board scheme and removed.

4.4 Public Transport Access

4.4.1 The Site will be directly served by public transport.

4.4.2 New bus stops in accordance with current best practice have been made in the access and internal layout designs for the Developments. The provision of online bus stops on the B4100 was considered however lay-bys would conflict with the guidance in CD169 and on-carriageway stops could interact with the efficiency of the accesses. Instead stops will be provided on the site access roads within both the Eastern and Western Developments with turning provision to minimise bus routeing. This arrangement significantly improves accessibility to the employment units and allows bus users to wait to board bus services away from busy and high-speed traffic routes.

4.4.3 In terms of service routes, the key desireline is between the Development and Bicester from which in excess of 50% trips are forecast to originate. Circa 4% trips are forecast to originate in Brackley and 6% trips are forecast to originate from Banbury.

4.4.4 Stagecoach's 505 bus service runs between Bicester and Brackley along the B4100 Eastern Site frontage before turning north up the A43. The Development will support patronage on this developer funded service. OCC however consider that this service may not be viable in its current form in the longer term.

4.4.5 If the 505-bus service is withdrawn alternative provision for the Baynards Green – Bicester leg will be secured. OCC has expressed a preference for a public bus service provision rather than a bespoke service and both options will be considered. OCC has also suggested provision of demand responsive travel.

4.4.6 It is proposed that a level of service for the sites will be agreed with OCC that will allow the provision to be scaled as the development is built out. The resulting services would either then be procured directly or through OCC with funding provided by the Applicant.

4.5 Vehicular Access

4.5.1 The Eastern Development will be accessed from a four-armed roundabout junction, as shown on **DTA Drawing 17213-16**, which has been designed in accordance with the requirements set out in DMRB CD116. The location of the junction, circa 180m to the east of the A43 Baynards Green roundabout, is shown on the parameter plans and the indicative masterplan.

4.5.2 The proposed roundabout has an inscribed circular diameter of 55m and a two lane 10m wide circulatory carriageway. Entry path curvature on all arms is within the 100m maxima set out in the DMRB to geometrically constrain speeds on the approach to 30mph. The B4100 approaches achieve visibility in excess of the 160m stopping sight distance commensurate with the 50mph posted speed limit. An automatic traffic counter was commissioned to confirm these parameters as reported in **Table 1**.

4.5.3 Vehicle tracking has been undertaken based on a standard design vehicle (maximum legal articulated lorry) on **DTA Drawing 17213-16-TRACK**.

4.5.4 The A43 Baynards Green roundabout currently has a single lane exit on the B4100 eastern arm and a short flare on the entry. There are Growth Fund plans to improve the junction and the concept sketch provided by OCC indicates widening of the entry and exit to provide two full lanes across the site frontage. The rationale for this is unclear at present. The site access roundabout has however been designed to be compatible with this where the link to the A43 roundabout would be maintained as two full lanes with segregated carriageways.

4.5.5 Operationally there should be no direct interaction between the site access and the improved A43 roundabout. There will be no entry starvation at the A43 entry as separation of the two junctions is well in excess of the maximum number of vehicles that would discharge per cycle of the growth fund scheme. The traffic arriving at the site access will be modulated by the upstream traffic signals.

4.5.6 The Western Development will be accessed from a three-arm roundabout junction. The proposed roundabout has an inscribed circular diameter of 40m with a two lane 8.5m wide

circulatory carriageway. The junction, as shown on **DTA Drawing 17213-09**, is designed in accordance with the requirements set out in DMRB CD116 for the prevailing derestricted speeds (60mph).

4.5.7 Vehicle tracking has been undertaken based on a standard design vehicle (maximum legal articulated lorry) on **DTA Drawing 17213-09-TRACK**.

4.5.8 An interim mitigation scheme has been identified to offset the additional demand arising from the development in advance of the Oxfordshire Growth Board scheme. This would be delivered via a S278 agreement. The Eastern Development will provide for widening of both B4100 entries with an extended flare. The Western Development will provide for widening of both B4100 entries with an extended flare and a standalone signal-controlled toucan (pedestrian and cycle) crossing to the south of the roundabout will be provided. The exit toucan crossing could be retained within the eventual scheme whereas the entry crossing would ultimately be redundant post GF scheme and removed.

4.6 Parking

4.6.1 Parking demand will be accommodated within the Development in full. The precise configuration of the Development is not currently fixed and parking will need to be addressed when subsequent detailed applications come forward for individual plots within the Sites.

4.6.2 Car parking is proposed at a ratio of 1 space per 200m^2 with disabled parking provided at 5%. On the basis of the Illustrative Masterplan, the total car parking provision on the Western Development site is 844 spaces; and the total car parking provision on the Eastern Development is 510 spaces. This is in accordance with CDC requirements.

4.6.3 Cycle parking is provided at 1 space per 500m^2 for employees and 1 space per 1,000m^2 for visitors. This is in accordance with OCC standards.

4.6.4 Provision will be made for electric car and HGV parking as set out below:

- 10% of car parking spaces will have active electric charging provision
- 10% of HGV parking spaces will have active electric charging provision
- 15% of car parking spaces will have passive electric charging provision
- 15% of HGV parking spaces will have passive electric charging provision

4.7 Independent Road Safety Audit

4.7.1 An Independent Road Safety Audit was undertaken by Mott MacDonald on the concept access designs in accordance with the brief attached at **Appendix L**, and in line with the requirements of GG119. Considering the early stage of development of the A43 Baynard's Green improvement scheme, consideration of the interaction with the Strategic Road Network (SRN) was not included within the scope of the RSA. The RSA reports are attached at **Appendix M**.

4.7.2 The western access audit raises issues relating to operation in conjunction with the A43 roundabout and the requirement for lighting.

2.1 Problem 1.01

Location: Throughout Scheme.
Summary: Unclear impact of additional traffic on surrounding highway network.

The proposed development and its western access are in close proximity to the A43 Baynards Green roundabout. At present, no junction appraisals have been undertaken therefore it is not possible to consider the impact that this development will have on the local highway network and particularly the A43 junction. Should the junction fail to accommodate the increase in traffic, and particularly HGVs, there is an increased risk of rear end shunt or side impact type collisions associated with inappropriate turning manoeuvres resulting from driver frustration / impatience.

Recommendation
It is recommended that traffic modelling is undertaken to assess the impact that the proposed development will have on the surrounding highway network, and particularly the A43 Baynards Green roundabout.

4.7.3 Problem 1.01 is accepted, and the recommendations agreed. This is considered in more detail within this TA.

2.2 Problem 1.02

Location: B4100 Roundabout junction.
Summary: Unclear lighting provision may lead to loss of control collisions.

The B4100 at the location of the proposed roundabout junction is a relatively straight section of single carriageway unlit rural highway. It is not clear from the information submitted if it is intended to light the roundabout. Failure to light this roundabout may result in motorists misjudging the position or geometry of the roundabout during the hours of darkness, increasing the risk of loss of control type collisions.

Recommendation
Given the proximity of the illuminated A43 Baynards Green roundabout, it is considered appropriate for the proposed access roundabout to also be lit. Furthermore, the internal site roundabout is likely to also require lighting due to its close proximity. It is recommended that through the design process, a lighting assessment is carried out to confirm the need for lighting.

4.7.4 Problem 1.02 is accepted, and the recommendations agreed. Whilst no longer mandatory to light a roundabout it will be safer to do so. This recommendation will be taken forward at the detailed design stage.

4.7.5 The eastern access audit raises similar issues relating to operation in conjunction with the A43 roundabout and the requirement for lighting.

2.1 Problem 1.01

Location: Throughout Scheme.
Summary: Unclear impact of additional traffic on surrounding highway network.

The proposed development and its western access are in close proximity to the A43 Baynards Green roundabout. At present, no junction appraisals have been undertaken therefore it is not possible to consider the impact that this development will have on the local highway network and particularly the A43 junction. Should the junction fail to accommodate the increase in traffic, and particularly HGVs, there is an increased risk of rear end shunt or side impact type collisions associated with inappropriate turning manoeuvres resulting from driver frustration / impatience.

Recommendation
It is recommended that traffic modelling is undertaken to assess the impact that the proposed development will have on the surrounding highway network, and particularly the A43 Baynards Green roundabout.

4.7.6 Problem 1.01 is accepted, and the recommendations agreed. This is considered in more detail within this TA.

2.2 Problem 1.02

Location: B4100 Roundabout junction.
Summary: Unclear lighting provision may lead to loss of control collisions.

The B4100 at the location of the proposed roundabout junction is a relatively straight section of single carriageway unlit rural highway. It is not clear from the information submitted if it is intended to light the roundabout. Failure to light this roundabout may result in motorists misjudging the position or geometry of the roundabout during the hours of darkness, increasing the risk of loss of control type collisions.

Recommendation
Given the proximity of the illuminated A43 Baynards Green roundabout, it is considered appropriate for the proposed access roundabout to also be lit. Furthermore, the internal site roundabout is likely to also require lighting due to its close proximity. It is recommended that through the design process, a lighting assessment is carried out to confirm the need for lighting.

4.7.7 Problem 1.02 is accepted, and the recommendations agreed. Whilst no longer mandatory to light a roundabout it will be safer to do so. This recommendation will be taken forward at the detailed design stage.

5.0 APPRAISAL

5.1 Construction Travel Demand

5.1.1 The Enabling Works will be constructed over a period of approximately nine months which includes the construction of the roundabout to the Western Site. The construction of the Western Development will take access from the internal roundabout which in turn connects to a new B4100 roundabout, both of which are to be built as part of the Enabling Works. The construction of the Eastern Development will take temporary access from the B4100 with a simple priority access arrangement. Construction of the Western Development would take place over a 24-month period. Construction of the Eastern Development would take place over a 24-month period.

5.1.2 Based on appraisal of other development sites of a similar nature in the Bicester area it is estimated that there will be 40 HGV deliveries and 190 car or van trips to the respective construction stages per day. These assumptions are robust and reflect the demand during the busiest stages of construction. Most of the demand will arise outside the peak network periods and as such the proportional change in flow will be negligible. As such there will be no significant change in traffic on the local road network from the construction,

5.1.3 The Enabling Works will take place first. There will be traffic management required during the road works, however the B4100 flows adjacent to the Western Site (and enabling works) are relatively modest and there should be no blocking back to the adjacent A43 roundabout. Details of the traffic management will be agreed with OCC.

5.1.4 The eastern roundabout will be constructed as part of the Eastern Development. The proposed roundabout is largely off-line but traffic management will be required during the road works. Details of the traffic management will be agreed with OCC.

5.1.5 Parking for construction workers off the local roads will be provided. Measures will be put in place to avoid mud being brought on to the highways. These measures are set out in the Framework CEMP.

5.2 Operational Travel Demand

5.2.1 Initial estimates of travel demand from the Development were estimated using data from the TRICS database (Land Use 02 – Employment and Category F – Warehousing (commercial)). This database contains surveys of the vehicle and multimodal trip rates of a wide variety of sites which are classified by land use and various other attributes. DTA recently prepared several Transport Assessments for employment floorspace within the B8 land use class based on this data at Howes Lane to the west of Bicester (within the Ecotown allocation), at Skimmingdish Lane to the north of Bicester, and at Bicester Gateway/Catalyst to the south of Bicester. These rates have also been adopted more widely by others including at CDC Banbury 15 Allocation.

5.2.2 These estimates have been revised following pre-application feedback from highway authorities (OOC and NH). Given the small number of similarly located, large-scale sites within TRICS, the revised estimates are now based on traffic surveys commissioned by DTA at five large scale employment/road-based distribution facilities which include large sites

within the 'golden triangle'. These are Magna Park Lutterworth, Prologis Central Park Rugby, Fletton Park Peterborough, Flaxley Road Peterborough and Trentham Lakes.

- Magna Park near Lutterworth in Leicestershire consists of large warehousing units. It is predominately a 1990's development with no rail connection. The site now provides 7.7M ft^2 GFA of distribution warehousing. Current tenants include ASDA, Nissan, Toyota, Honda, Argos, ECF, Sara Lee, Unipart, DHL, Britvic Soft Drinks, LIDL, Merck, BT, Exel, P&O, The Disney Store, Panasonic, Kingfield Heath, Costco, Computer 2000, and TNT. Overall, the site is a good example of a road-based site with a broad and reasonably balanced mix of end-users.

- Prologis Central Park Phase 1 in Rugby is situated to the south of M6 Junction 1. Phase 1 includes three distribution units totalling 117,649m^2 GFA. The end users include GAP clothing, Pearson (Penguin books) and TPN. The units are served off a single point of access to the local road network.

- Fletton Park, Peterborough is a single 86,190m^2 GFA road-based distribution unit. The end user is furniture retailer, Ikea.

- Flaxley Road, Peterborough includes two road-based distribution units, a combined GFA of 66,500m^2. Both units are operated by Debenhams. The units are served off a single point of access to the local road network.

- Trentham Lakes South, Stoke-on-Trent is a single 30,050m^2 road distribution unit. It is currently operated by Screwfix.

5.2.3 These surveys were undertaken using automatic and manual survey methodologies. Classified data was gathered for each site for a 24-hour weekday period. In addition, longer period automatic traffic counter data was collected to derive average annual daily flows.

5.2.4 The indicative masterplan includes three units on the Western Development ranging from 36,000m^2 to 87,000m^2 and includes two units on the Eastern Site ranging from 33,000m^2 to 66,000m^2. Details of scale layout, appearance and landscaping are reserved for future approval however the DTA surveys are representative of travel demand from units of comparable size to those likely to come forward and over extended hours (relative to the TRICS sourced data).

5.2.5 The resulting average (weighted) trip rates are higher than those originally forecast based on TRICS. These are presented in **Table 5** for the peak hours, shoulder periods, daytime, night-time and daily rates.

Table 5 Trip generation rates (per 100m²)

	HGV		Cars		Total		
	In	Out	In	Out	In	Out	Two-way
AM Peak (0800-0900)	0.019	0.019	0.092	0.027	0.111	0.046	0.157
AM Peak (0900-1000)	0.021	0.020	0.070	0.020	0.091	0.041	0.131
PM Peak (1600-1700)	0.018	0.016	0.021	0.114	0.039	0.129	0.168
PM Peak (1700-1800)	0.016	0.015	0.024	0.099	0.041	0.114	0.155
12 Hour (0700-1900)	0.226	0.217	0.610	0.710	0.836	0.927	1.763
16 Hour (0700-2300)	0.281	0.269	0.691	0.807	0.972	1.076	2.048
18 Hour (0600-2400)	0.305	0.299	0.787	0.903	1.092	1.202	2.294
8 Hour (2300-0700)	0.089	0.107	0.252	0.170	0.340	0.277	0.617
24 Hour (0000-2400)	0.370	0.376	0.942	0.977	1.312	1.353	2.665

5.2.6 The application for the Western Site seeks outline consent for up to 180,000m² (GIA) of logistics and ancillary office floorspace. **Table 6** below sets out the associated traffic generation of the Western Development using the trip rates in **Table 5**.

Table 6 Western Development Traffic Demand

	HGV		Cars		Total		
	In	Out	In	Out	In	Out	Two-way
AM Peak (0800-0900)	34	34	166	49	200	83	283
AM Peak (0900-1000)	38	36	125	37	163	73	236
PM Peak (1600-1700)	32	28	38	204	70	232	302
PM Peak (1700-1800)	29	27	44	179	73	205	278
12 Hour (0700-1900)	407	390	1098	1278	1505	1668	3173
16 Hour (0700-2300)	507	484	1244	1452	1750	1936	3686
18 Hour (0600-2400)	548	538	1417	1625	1965	2163	4128
8 Hour (2300-0700)	159	193	453	306	612	499	1111
24 Hour (0000-2400)	666	677	1696	1758	2362	2435	4797

5.2.7 The application for the Eastern Site seeks outline consent for up to 100,000m² of logistics and ancillary office floorspace. **Table 7** below sets out the associated traffic generation of the Eastern Development using the trip rates in **Table 5**.

Table 7 Eastern Development Traffic Demand

	HGV		Cars		Total		
	In	Out	In	Out	In	Out	Two-way
AM Peak (0800-0900)	19	19	92	27	111	46	157
AM Peak (0900-1000)	21	20	70	20	91	41	131
PM Peak (1600-1700)	18	16	21	114	39	129	168
PM Peak (1700-1800)	16	15	24	99	41	114	155
12 Hour (0700-1900)	226	217	610	710	836	927	1763
16 Hour (0700-2300)	281	269	691	807	972	1076	2048
18 Hour (0600-2400)	305	299	787	903	1092	1202	2294
8 Hour (2300-0700)	89	107	252	170	340	277	617
24 Hour (0000-2400)	370	376	942	977	1312	1353	2665

5.3 Trip Distribution & Assignment

5.3.1 The distribution of traffic from the Site considers light (cars) and heavy (HGVs) traffic components separately. Light traffic will be distributed based on the 2011 journey to work census data.

5.3.2 The Bicester area comprises six Middle Super Output Areas (MSOA); the inner area broadly relating to development within the ring road is split into four quadrants (Cherwell 12-15), and an outer ring capturing development outside the ring road and functionally related villages is split into two (Cherwell 11 & 16).

5.3.3 The site is in Cherwell 11 which covers a broad arc around the north of Bicester. The pattern for Cherwell 13, the north-eastern quadrant of Bicester, has also been reviewed as this contains more jobs overall and large-scale warehouses. The differential is not large as shown in **Table 7**.

Table 8 - Journey to work (home trip ends)

	Cherwell 11	Cherwell 13
Bicester (Cherwell 11-16)	56%	52%
Cherwell Other	9%	13%
Aylesbury Vale	8%	8%
South Northamptonshire	6%	5%
West Oxfordshire	2%	3%
South Oxfordshire	2%	2%
Oxford	1%	3%
Vale of White Horse	2%	2%
Milton Keynes	1%	1%
Northampton	0%	1%
Other	12%	9%

5.3.4 There are variations between the two MSOA within the Bicester grouping although this will not make a significant overall difference to the routeing on the network in the immediate vicinity of the site.

5.3.5 There are no planned infrastructure works that will materially alter the generalised cost of travel overall within the journey to work region. There is significant planned housing growth at Bicester, where the number of households will increase by circa 60% to 2031 from 2011,

planned growth at Upper Heyford (1260 households) and planned growth at Brackley. There are two elements here. First development at Upper Heyford in Cherwell 10 represents a change in the overall spatial pattern relative to 2011 and its share of the journey to work trip distribution should increase. Second the residential growth at Bicester, particular the Ecotown is likely to draw more trips from Bicester. This should lead to a more compact pattern of trips for which there are wider travel choices. On a pro-rata basis this is likely to represent around 11% of trips with a drawdown from destinations outside Bicester. This has not been allowed for within the appraisal as it is reliant on wider patterns of delivery. Moreover, the trip distribution both Development and committed development sites (perhaps except for NW Bicester) are not doubly constrained such that there is implicit double counting.

5.3.6 The Development demand has been assigned onto the local road network using ESRI ArcGIS with routeings based on prevailing network conditions during existing typical peak periods (based on HERE data). The resulting assignment is summarised in **Table 9** below.

Table 9 Car Assignment

Assignment	Distribution
M40 (N)	3%
M40 (S)	5%
A34 (S)	11%
A43 (N)	10%
A421 (E)	3%
B4100 (W)	8%
B4100 (E)	54%
B430	6%

5.3.7 Full details of the car distribution are attached at **Appendix F.**

5.3.8 The Heavy Goods Vehicles have been distributed in accordance with the Base Year Freight Matrices (BYFM) published by the Department for Transport (2012). The Matrices consist of the number of vehicles per average day between a set of origin-destination zone pairs for a 2006 base year. These zones are based on all 408 local authority districts, unitary authorities and London Boroughs and point zones for the 88 largest ports, 5 main freight airports and 56 major concentrations of distributions centres.

5.3.9 The most current and representative zones within the 2006 base matrices are those of Cherwell and South Northamptonshire Districts. The development trips were then distributed on a pro-rata basis. The resulting distribution is summarised in **Table 10** below.

Table 10 Cherwell & South Northants HGV (artic) distribution (by region)

Region	Origin	Destination	2-way
London	3%	3%	3%
East	11%	12%	11%
East Midlands	16%	15%	15%
Yorkshire and Humberside	3%	5%	4%
Northeast	1%	1%	1%
South	2%	3%	2%
Northwest	4%	5%	5%
West	1%	2%	1%
Southeast	45%	39%	42%
Southwest	6%	6%	6%
West Midlands	9%	9%	9%
	100%	100%	100%

5.3.10 The rows and columns for these Districts were extracted from the matrices and the routes calculated in ArcGIS between the site and the zone point or area centroids. The resulting proportion was summed for local links on the road network local to the site. This assignment is summarized in **Table 11** below. Aggregate statistics for vehicle kilometres travelled have also been calculated to inform the Environmental Statement.

Table 11 HGV Assignment

Assignment	Distribution
M40 (N)	19%
M40 (S)	16%
A34 (S)	29%
A43 (N)	23%
A421 (E)	9%
B4100 (E)	5%

5.3.11 Full details of the goods vehicle distribution are attached at **Appendix G.**

5.3.12 The resultant assignments on the road network, as shown on **Figure 3**, taking account of flows from the Development and committed developments are summarised in **Table 12** and **Table 13** below. Note that these do not allow for mode shift achieved through the implementation of site travel policies implemented through the Travel Plans.

5.3.13 Traditionally a change in demand in total traffic as set out in **Table 12** greater than 5% has been used as a basis to define the extend of the network that may require detailed operational appraisal. Here it is clear that the greatest relative change in traffic flow will be within the B4100 corridor between the Sites and Bicester. As would be expected the greatest proportional change is to the short link between the A43 and the Western Site access given the low baseline to the west of the services access. The operational impact on the B4100 at key junctions is assessed in detail in Section 5.4.

5.3.14 The traffic composition is also an important consideration although generally less sensitive than the absolute quantum of traffic. Again, the greatest changes occur on the B4100, particularly between the site accesses and the A43, and on the A43 and M40 Junction 10. The operational impact here is assessed in detail in Section 5.4.

Figure 3 Local road network with key links identified

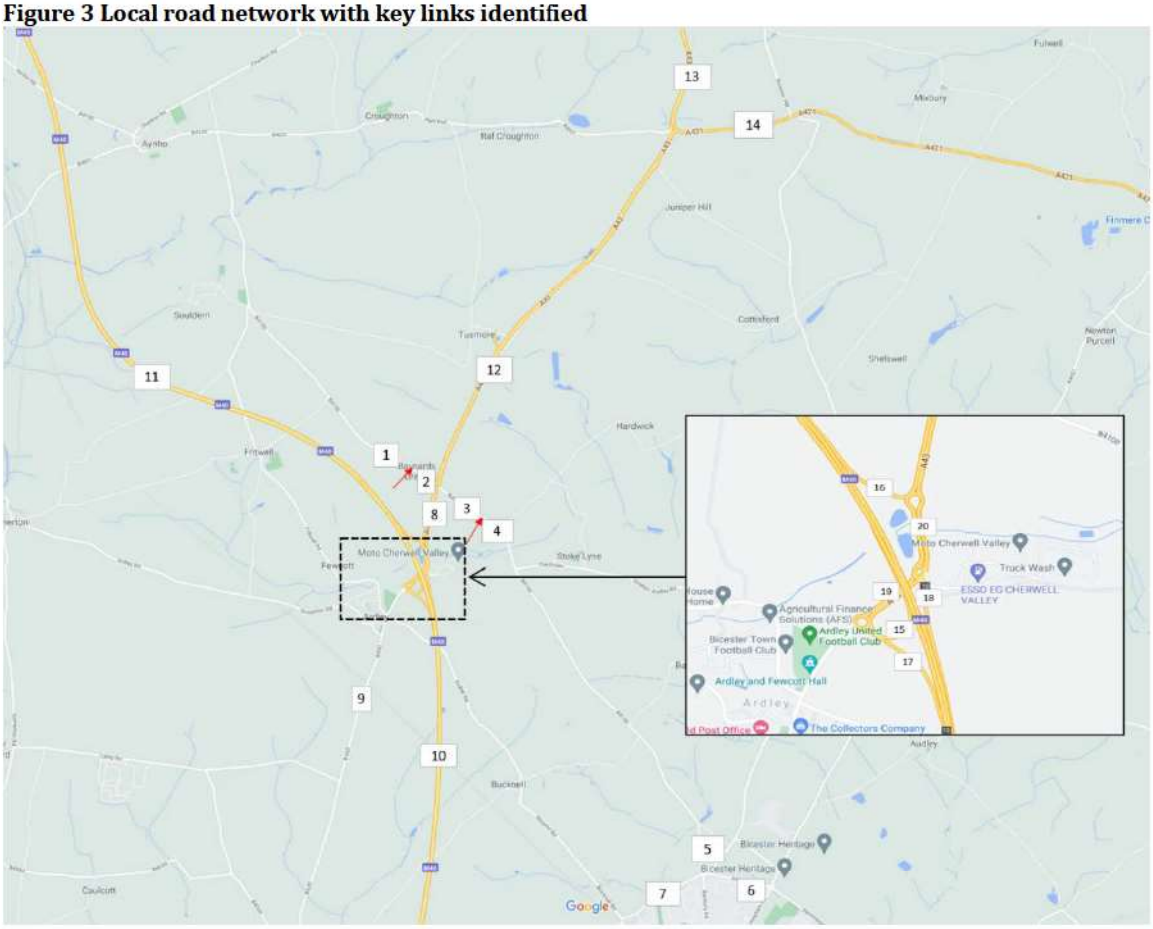


Table 12 Impact Appraisal (all traffic)

All traffic	Road	% change relative to 2025 excl com dev			% change relative to 2025 incl com dev		
		Western	Eastern	Combined	Western	Eastern	Combined
		2025 (AADT)			2025 (AADT)		
1	B4100	4%	2%	6%	4%	2%	6%
2	B4100	61%	2%	63%	61%	2%	63%
3	B4100	15%	12%	26%	14%	11%	25%
4	B4100	15%	8%	23%	14%	8%	21%
5	B4100	15%	8%	23%	12%	7%	19%
6	A4095	4%	2%	6%	3%	2%	5%
7	A4095	4%	2%	7%	4%	2%	6%
8	A43	5%	3%	7%	4%	2%	7%
9	B430	3%	1%	4%	1%	1%	2%
10	M40S	1%	0%	1%	1%	0%	1%
11	M40N	0%	0%	1%	0%	0%	1%
12	A43	2%	1%	3%	2%	1%	3%
13	A43	2%	1%	3%	2%	1%	2%
14	A421	2%	1%	3%	2%	1%	3%
15	M40 NB on-slip	3%	2%	4%	2%	1%	4%
16	M40 SB off-slip	3%	1%	4%	2%	1%	4%
17	M40 NB off-slip	1%	1%	1%	1%	0%	1%
18	M40 SB on-slip	1%	1%	1%	1%	1%	1%
19	M40 Overbridge	2%	1%	3%	1%	1%	2%
20	MSA to Padbury	1%	1%	2%	1%	1%	2%

Table 13 Impact Appraisal (HGV traffic)

All traffic	Road	% change relative to 2025 excl com dev			% change relative to 2025 incl com dev		
		Western	Eastern	Combined	Western	Eastern	Combined
		2025 (AADT)			2025 (AADT)		
1	B4100	0%	0%	0%	0%	0%	0%
2	B4100	739%	0%	739%	683%	0%	683%
3	B4100	14%	141%	155%	12%	120%	132%
4	B4100	14%	8%	22%	12%	7%	18%
5	B4100	14%	8%	22%	10%	6%	16%
6	A4095	10%	5%	15%	8%	5%	13%
7	A4095	0%	0%	0%	0%	0%	0%
8	A43	17%	9%	26%	15%	8%	23%
9	B430	0%	0%	0%	0%	0%	0%
10	M40S	3%	2%	2%	3%	2%	2%
11	M40N	2%	1%	3%	2%	1%	3%
12	A43	10%	5%	15%	8%	5%	13%
13	A43	7%	4%	12%	6%	4%	10%
14	A421	12%	7%	19%	11%	6%	17%
15	M40 NB on-slip	15%	8%	23%	13%	7%	20%
16	M40 SB off-slip	11%	6%	17%	10%	5%	15%
17	M40 NB off-slip	5%	3%	7%	4%	2%	7%
18	M40 SB on-slip	3%	2%	5%	3%	2%	5%
19	M40 Overbridge	6%	4%	10%	5%	3%	8%
20	MSA to Padbury	5%	3%	8%	4%	2%	7%

5.4 Operational Appraisal

Western Roundabout

5.4.1 The operation of the Western Roundabout has been modelled using the industry standards TRL Junctions 10 modelling suite. The ARCADY module calculates entry capacity based on geometry and models operational performance. To understand the performance of the junction the traffic flows are profiled to reflect unconstrained operation. As such the central modelled period is approximately 12% higher than the average period flow. The performance statistics, ratio of flow to capacity (RFC) and mean queue length are summarised below in **Table 14** for the scenario with the Western Development only.

Table 14 - Western Site Access Junction Assessment – Western Development Only

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2025 Design								
1. B4100 W	0.5	4.52	0.33	164%	0.3	4.09	0.25	146%
2. B4100 E	0.5	4.56	0.33		0.6	4.72	0.38	
3. Site Access	0.1	4.41	0.08	[Arm 1]	0.2	4.36	0.14	[Arm 2]
2031 Design								
1. B4100 W	0.5	4.61	0.34	155%	0.4	4.15	0.26	138%
2. B4100 E	0.5	4.62	0.34		0.7	4.85	0.39	
3. Site Access	0.1	4.44	0.08	[Arm 1]	0.2	4.43	0.15	[Arm 2]

5.4.2 The performance statistics, ratio of flow to capacity (RFC) and mean queue length are summarised below in **Table 15** for the scenario with both Developments.

Table 15 - Western Site Access Junction Assessment – Both Developments

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2025 Design								
1. B4100 W	0.5	4.56	0.33	161%	0.3	4.10	0.25	144%
2. B4100 E	0.5	4.58	0.33		0.6	4.75	0.38	
3. Site Access	0.1	4.42	0.08	[Arm 1]	0.2	4.38	0.14	[Arm 2]
2031 Design								
1. B4100 W	0.5	4.64	0.34	152%	0.4	4.15	0.26	135%
2. B4100 E	0.6	4.63	0.34		0.7	4.86	0.39	
3. Site Access	0.1	4.45	0.08	[Arm 1]	0.2	4.43	0.15	[Arm 2]

5.4.3 The results show that the geometry has ample capacity to accommodate the Western Development demand with limited delay or queueing on any arm. All approaches to the junction are single lane entries and therefore there are no lane balance issues.

Eastern Roundabout

5.4.4 The operation of the Eastern Roundabout has been modelled using the industry standards TRL Junctions 10 modelling suite. The ARCADY module calculates entry capacity based on geometry and models operational performance. To understand the performance of the junction the traffic flows are profiled to reflect unconstrained operation. As such the central modelled period is approximately 12% higher than the average period flow. The performance statistics, ratio of flow to capacity (RFC) and mean queue length are summarised below in **Table 16**.

Table 16 - Eastern Site Access Junction Assessment – Eastern Development Only

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2025 Design								
1. B4100 W	0.7	2.78	0.40	135%	0.3	2.24	0.25	142%
2. B4100 E	0.5	2.70	0.31		0.7	3.06	0.40	
3. Site Access E	0.0	4.64	0.02	[Arm 1]	0.0	5.20	0.03	[Arm 2]
4. Site Access W	0.0	4.22	0.03		0.1	4.84	0.06	
2031 Design								
1. B4100 W	0.7	2.84	0.42	127%	0.4	2.25	0.26	133%
2. B4100 E	0.5	2.76	0.32		0.7	3.06	0.41	
3. Site Access E	0.0	4.24	0.02	[Arm 1]	0.0	4.57	0.03	[Arm 2]
4. Site Access W	0.0	3.85	0.03		0.1	4.26	0.06	

5.4.5 The performance statistics, ratio of flow to capacity (RFC) and mean queue length are summarised below in **Table 17** for the scenario with both Developments.

Table 17 - Eastern Site Access Junction Assessment – Both Developments

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2025 Design								
1. B4100 W	0.7	2.85	0.42	126%	0.5	2.46	0.32	110%
2. B4100 E	0.5	2.82	0.34		0.9	3.40	0.46	
3. Site Access E	0.0	4.80	0.02	[Arm 1]	0.0	5.60	0.03	[Arm 2]
4. Site Access W	0.0	4.35	0.03		0.1	5.21	0.06	
2031 Design								
1. B4100 W	0.8	2.92	0.43	119%	0.5	2.47	0.33	103%
2. B4100 E	0.6	2.89	0.35		0.9	3.41	0.47	
3. Site Access E	0.0	4.38	0.02	[Arm 1]	0.0	4.93	0.03	[Arm 2]
4. Site Access W	0.0	3.97	0.03		0.1	4.58	0.06	

5.4.6 The results show that the geometry has ample capacity to accommodate the Eastern Development demand with limited delay or queueing on any arm. The B4100 approaches are two lane or single lanes plus flares. These are wider than required to accommodate existing flow levels plus the development however provision has been made to ensure that the works are wholly compatible with National Highway's proposed works at A43 Baynards

Green. For the scenario where the section of B4100 between the roundabouts is dualled (due to the overlap of entry flares and merge tapers), the arrangement will allow the lane designations to mirror those upstream to avoid weaving downstream. The site access are single lane entries and therefore there are no lane balance issues.

A43 Baynards Green Roundabout

5.4.7 The traffic patterns at this location were surveyed on 23rd June 2021. Whilst the survey was undertaken during the on-going pandemic the traffic levels within the day-to-day variation at this location prior to the pandemic and so are representative. Both demand and queuing patterns were recorded. These show that there is existing queuing on the B4100 E and A43S arms particularly during the PM peak periods. This queueing dissipates before 9am and 6pm in the AM and PM peaks respectively such there is no unreleased demand. This pattern of queueing reflects that these approaches as currently configured are approaching capacity for periods during the network peaks. The change in demand at the A43 Baynards Green Roundabout is summarised in **Table 18**.

Table 18 Change in Demand at A43 Baynards Green Roundabout

Vehicles per hour	AM		PM	
2019 Existing	**4364**		**4417**	
2025 Base Case	5138		5170	
2031 Base Case	5812		5890	
M40 J10 Western Site	266	5.2% (2025)	265	5.1% (2025)
M40 J10 Eastern Site	91	1.8% (2025)	86	1.7% (2025)
M40 J10 Combined	357	6.9% (2025)	351	6.8% (2025)

5.4.8 National Highways is undertaking design work for a Growth Fund improvement of junction which a firm commitment for its delivery by 2024. This reflects that there are changes to the junction required as a result of planned growth.

5.4.9 There is insufficient detail on the improvement scheme to allow its appraisal within this study. In the meantime, the operation of the junction has been modelled based on the existing layout and method of control. These scenarios do not include demand from the committed developments, or the capacity improvements expected to be achieved from the Growth Fund scheme. The models use TRL Junctions 10 based on the existing geometry measured from OS detailed mapping.

5.4.10 In the tables below 2019 and 2025 scenarios have been summarised although in practice the Growth Fund scheme will have been delivered in advance of 2025. The rationale for the tables is to demonstrate that the worse-case implications of the development in advance of the Growth Fund scheme and the Applicant's interim works if these works are deemed appropriate.

5.4.11 The results summarised in **Table 19** reflect the Western Development only. There is a significant element of the demand which is drawn from the Bicester direction resulting in an impact on both sides of the junction

Table 19 Baynards Green Roundabout Operation – Western Development only

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2019 Base								
1. B4100 E	8.6	61.88	0.93	-5%	27.9	125.22	1.04	-9%
2. A43 S	3.8	8.36	0.77		15.6	29.75	0.95	
3. B4100 W	2.0	12.64	0.66	[Arm 1]	1.7	14.57	0.63	[Arm 1]
4. A43 N	27.1	49.79	0.99		3.2	7.19	0.75	
2025 Base excluding committed								
1. B4100 E	22.5	136.65	1.04	-13%	91.8	371.41	1.26	-17%
2. A43 S	6.2	12.65	0.85		57.2	86.24	1.03	
3. B4100 W	3.8	22.01	0.79	[Arm 1]	2.8	21.72	0.74	[Arm 1]
4. A43 N	110.7	160.51	1.10		5.3	10.81	0.83	
2025 Design								
1. B4100 E	49.4	311.11	1.15	-18%	91.3	358.70	1.25	-17%
2. A43 S	8.1	16.23	0.88		75.1	109.15	1.06	
3. B4100 W	7.4	38.87	0.89	[Arm 1]	3.3	24.19	0.78	[Arm 1]
4. A43 N	140.2	204.07	1.13		5.6	11.34	0.84	

5.4.12 **Table 20** summarises the Eastern Development only.

Table 20 Baynards Green Roundabout Operation – Eastern Development only

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2019 Base								
1. B4100 E	8.6	61.88	0.93	-5%	27.9	125.22	1.04	-9%
2. A43 S	3.8	8.36	0.77		15.6	29.75	0.95	
3. B4100 W	2.0	12.64	0.66	[Arm 1]	1.7	14.57	0.63	[Arm 1]
4. A43 N	27.1	49.79	0.99		3.2	7.19	0.75	
2025 Base excluding committed								
1. B4100 E	22.5	136.65	1.04	-13%	91.8	371.41	1.26	-17%
2. A43 S	6.2	12.65	0.85		57.2	86.24	1.03	
3. B4100 W	3.8	22.01	0.79	[Arm 1]	2.8	21.72	0.74	[Arm 1]
4. A43 N	110.7	160.51	1.10		5.3	10.81	0.83	
2025 Design								
1. B4100 E	30.6	172.54	1.07	-15%	115.8	467.41	1.33	-19%
2. A43 S	6.8	13.68	0.86		59.7	89.25	1.04	
3. B4100 W	4.3	24.70	0.81		2.9	22.23	0.75	
4. A43 N	125.7	181.57	1.12		5.5	11.29	0.84	

5.4.13 **Table 21** summarises the cumulative impact of both developments.

Table 21 Baynards Green Roundabout Operation – Both Developments

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2019 Base								
1. B4100 E	8.6	61.88	0.93	-5%	27.9	125.22	1.04	-9%
2. A43 S	3.8	8.36	0.77		15.6	29.75	0.95	
3. B4100 W	2.0	12.64	0.66	[Arm 1]	1.7	14.57	0.63	[Arm 1]
4. A43 N	27.1	49.79	0.99		3.2	7.19	0.75	
2025 Base excluding committed								
1. B4100 E	22.5	136.65	1.04	-13%	91.8	371.41	1.26	-17%
2. A43 S	6.2	12.65	0.85		57.2	86.24	1.03	
3. B4100 W	3.8	22.01	0.79	[Arm 1]	2.8	21.72	0.74	[Arm 1]
4. A43 N	110.7	160.51	1.10		5.3	10.81	0.83	
2025 Design								
1. B4100 E	60.3	387.20	1.19	-20%	141.6	614.96	1.42	-22%
2. A43 S	8.6	17.18	0.89		68.3	99.74	1.05	
3. B4100 W	8.4	43.74	0.91		10.8	65.08	0.95	
4. A43 N	155.5	238.30	1.15		7.1	14.57	0.87	

5.4.14 An interim mitigation scheme has been identified to offset the additional demand arising from the development in advance of the Oxfordshire Growth Board funded scheme. This would be delivered via a S278 agreement.

5.4.15 The Eastern Development will provide for widening of both B4100 entries with an extended flare.

5.4.16 The Western Development will provide for widening of both B4100 entries with an extended flare and a standalone signal-controlled toucan (pedestrian and cycle) crossing to the south of the roundabout will be provided. The exit toucan crossing could be retained within the eventual scheme whereas the entry crossing would ultimately be redundant post GF scheme and removed.

5.4.17 The results of the operation with the mitigation are summarised in **Table 22** below.

Table 22 Baynards Green Roundabout Operation – Interim Mitigation – Western Development

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2025 Design								
1. B4100 E	1.6	9.05	0.60	-13%	2.4	10.29	0.70	-11%
2. A43 S	9.6	19.44	0.90		112.2	159.51	1.10	
3. B4100 W	3.0	14.92	0.73		1.6	11.01	0.61	
4. A43 N	141.9	205.49	1.13		5.5	11.26	0.84	

5.4.18 **Table 23** summarises the Eastern Development only. This version omits the flaring on the western approach and the toucan crossings.

Table 23 Baynards Green Roundabout Operation – Interim Mitigation – Eastern Development

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2025 Design								
1. B4100 E	1.4	8.227	0.57	-12%	2.9	11.96	0.74	-10%
2. A43 S	7.3	14.89	0.87		103.3	147.49	1.09	
3. B4100 W	2.0	11.40	0.66		1.4	10.77	0.58	
4. A43 N	126.5	182.83	1.12		5.5	11.19	0.84	

5.4.19 **Table 24** summarises the cumulative impact of both developments. The mitigation would be as per the Western Development only (the Eastern Development mitigation is implicit within the Western Development mitigation).

Table 24 Baynards Green Roundabout Operation – Interim Mitigation – Both Developments

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2025 Design								
1. B4100 E	1.8	9.49	0.62	-14%	3.5	14.45	0.78	-11%
2. A43 S	10.8	21.75	0.91		124.0	175.53	1.11	
3. B4100 W	3.1	15.62	0.75	[Arm 4]	2.9	17.16	0.74	[Arm 2]
4. A43 N	157.5	239.17	1.15		7.1	14.59	0.87	

5.4.20 As can be seen from the above table the proposed works will still result in periods during which the junction will operate at capacity as per the do-nothing scenarios. The operation of the B4100 arms are significantly improved (reduced queuing and delay) and overall it is considered that the impact is appropriately mitigated in advance of the Growth Fund works.

M40 Junction 10 – Padbury, Cherwell and Ardley Roundabouts

5.4.21 The 2014 HE pinch point scheme at M40 Junction 10 reconfigured the southbound on slip road and the junctions on the northern side of the junction including the Padbury Roundabout and the Cherwell (MSA) Roundabout. These works unhooked traffic movements between M40 south and the A43. To achieve this the southbound on-slip was relocated from the Padbury Roundabout to the Cherwell Roundabout. The circulatory carriageway across the southern A43 entry at the Padbury Roundabout was rendered redundant and was closed. To accommodate the additional arm at the Cherwell Roundabout the junction was signalised within its existing footprint.

5.4.22 Overall the configuration of the junction reflects the current pattern of demand through the junction and the development demand will not significantly change this.

5.4.23 Growth Fund improvements are planned at the Padbury Roundabout as part of the scheme of works at the Baynards Green Roundabout. Whilst there is currently a single lane slip road which flares to two lanes at the entry, to accommodate future demand the two lanes will need to be extended. This is effectively re-aligning the existing pavement rather than new construction.

M40 Junction 10 Slip Roads

5.4.24 Merge – diverge assessments on the slip roads at Junction 10 have been undertaken in accordance with the guidance within DMRB CD122. This considers the configuration of the slip road merge and diverge arrangements for a given combination of mainline and slip road flows against a number of different standard layouts. These are plotted in **Appendix P**. For each slip road the Base, West Development only, East Development only and Both Developments are plotted however given that the relative differences are so small in the majority of instances there is significant overlap of the points.

5.4.25 The northbound merge slip is a two-lane slip road with a Layout A (option 1) with three lanes up and downstream on the mainline. The taper is 240m in length in excess of the 2 lane Motorway 120kph design speed. The current flows in the AM peak warrant a Layout A with two lanes up and downstream on the mainline. In the PM peak the flows warrant a Layout D with two lanes upstream and three lanes downstream. The three-lanes northbound through the junction are not warranted as two-lanes would suffice. On this basis the nearside lane could be hatched out as per M40 Junction 9. In practice, however the flows are marginal at the boundaries and the introduction of a lane drop and gain would introduce additional weaving at all times particularly for HGVs.

5.4.26 The southbound merge slip is a single lane slip road with a Layout A (option 1) with three lanes up and downstream on the mainline. The taper is 120m in length commensurate with a Rural A-P 100kph design speed which is permitted in accordance with Annex E. The taper is 240m in length more than the requirements for a 2 lane Motorway 120kph design speed. The current flows in the AM peak warrant a Layout E with two lanes upstream and three lanes downstream on the mainline. In the PM peak the flows warrant a Layout E with two lanes upstream and three lanes downstream. The three-lanes southbound through the junction are not warranted as two-lanes would suffice. On this basis the nearside lane could be hatched out as per M40 Junction 9. In practice, however the flows are marginal at the

boundaries and the introduction of a lane drop and gain introduces additional weaving at all times particularly for HGVs. The merge requirements do not significantly change as a result of the development.

5.4.27 The northbound diverge slip is a two-lane slip road with a Layout A (option 1) with three lanes up and downstream on the mainline. The taper is 240m in length is in excess of the 2 lane Motorway 120kph design speed. The slip road flows in the AM peak are currently consistent with layout A with 2 lanes on the up and downstream mainlines and with the development warrant layout D; ghost island or auxiliary lane drop with three lanes upstream and two lanes downstream. The slip road flows in the PM peak would warrant layout D; ghost island or auxiliary lane drop with three lanes upstream and two lanes downstream.

5.4.28 The southbound diverge slip is a single lane slip road with a Layout A (option 1) with three lanes up and downstream on the mainline. The taper is 120m in length commensurate with a Rural A-P 100kph design speed which is permitted in accordance with Annex E. The flows warrant Layout A for a two-lane upstream and downstream mainlines.

A4095/B4100 Banbury Road Roundabout

5.4.29 The A4095 – B4100 Banbury Road Roundabout is a four-arm junction with an ICD of 40m. There are single lanes plus flares on all approaches. **Table 25** summarises changes in overall junction throughput relative to the Bicester Traffic Model 2026 Reference Case plus committed development.

Table 25 Change in Demand due to Developments at A4095 – B4100 Banbury Road Roundabout

	AM		PM	
2026 Reference Case	3261		3432	
M40 J10 Western Development	123	3.8%	126	3.7%
M40 J10 Eastern Development	68	2.1%	70	2.0%
M40 J10 Both Developments	191	5.9%	196	5.7%

5.4.30 The operation of the junction in 2026, using BTM traffic forecasts (hence 2026 rather than 2025), has been modelled in TRL Junctions 10 based on the existing geometry measured from OS detailed mapping. The traffic flows from BTM have been modelled on a flat profile with and without the Development traffic flows. As can be seen from the results summarised in **Table 26** the relative differences in performance as a result of the Developments are modest. The greatest change in queue length is forecasts on the B4100 arm in the PM peak where the queue length will increase by two vehicles.

Table 26 2026 Banbury Road Roundabout Operation

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
2026 Base								
1. B4100	3.3	10.00	0.77	17%	2.4	9.36	0.71	10%
2. A4095 E	2.6	7.70	0.72		2.8	7.69	0.74	
3. Banbury Rd	0.8	7.07	0.45	[Arm 1]	1.2	9.34	0.55	[Arm 4]
4. A4095 W	0.7	5.73	0.42		2.9	14.77	0.75	
2026 Design – Western Development Only								
1. B4100	3.6	10.89	0.79	15%	3.6	12.57	0.78	8%
2. A4095 E	3.1	8.78	0.76		3.1	8.60	0.76	
3. Banbury Rd	0.9	7.91	0.48	[Arm 1]	1.4	10.23	0.58	[Arm 4]
4. A4095 W	0.8	6.44	0.46		3.2	16.09	0.77	
2026 Design – Eastern Development Only								
1. B4100	3.5	10.48	0.78	16%	3.0	10.90	0.75	9%
2. A4095 E	2.8	8.29	0.74		3.0	8.17	0.75	
3. Banbury Rd	0.9	7.52	0.47	[Arm 1]	1.3	9.81	0.57	[Arm 4]
4. A4095 W	0.8	6.11	0.44		3.1	15.48	0.76	
2026 Design – Combined Developments								
1. B4100	3.9	11.50	0.80	13%	4.6	15.58	0.82	7%
2. A4095 E	3.4	9.54	0.77		3.4	9.20	0.77	
3. Banbury Rd	1.0	8.48	0.51	[Arm 1]	1.4	10.76	0.59	[Arm 4]
4. A4095 W	0.9	6.93	0.49		3.4	16.88	0.78	

5.4.31 In practice variations in the demand profiles will result in queue lengths greater than the mean. The ratio of flow to capacity is however less than 0.82 on all arms in the scenarios tested.

5.4.32 Improvements to the B4095/B4100 Banbury Road Roundabout are planned by March 2023. In March/April OCC consulted on design options for the B4095/B4100 roundabout. The options considered include increasing the size of roundabout from 40m ICD to 50m ICD with additional flaring on the external approaches or conversion of the junction to signalised crossroad with two variations in terms of pedestrian and cycle provision. An application has since been submitted for a signal-controlled crossroads (LPA Reference R3-0094/21). OCC Transport Development Control deem that the scheme 'eases the forecast congestion, which enables the delivery of permitted housing development as well as reducing pollution and carbon emissions'.

5.5 Further Modelling

5.5.1 There are several planned changes to the road network to adapt to planned growth. NH is currently developing a scheme to improve the Baynards Green and Padbury Roundabouts. NH announced that 'Improving the junction on the A43 at Baynards Green, and the M40 roundabout at Padbury will increase capacity, reduce congestion, help reduce journey times and improve safety'. Further appraisal of the emerging arrangement will be undertaken in conjunction with NH. OCC has applied for planning permission for changes to the A4095-B4100 Banbury Road roundabout junction which is to be converted to a signalised crossroad

if approved. Further appraisal of the planned arrangement will be undertaken in conjunction with OCC.

5.5.2 Whilst it is unlikely that further optimisation of vehicular capacity will be required at either location due to the Development, the integration of improved pedestrian and cycle connectivity, to be delivered by the Development, into these schemes will need to be assessed and agreed with the respective promoting authorities.

5.6 Environmental Assessment

5.6.1 This Transport Assessment supports the Environmental Statement and provides inputs to a several studies therein including a chapter on Transport. A key consideration is the degree to which there is a change in the travel patterns relative to a baseline in terms of total flow and HGV flow. These are set out **Table 12** and **Table 13** above. These confirm that the proportional change in traffic flow is greatest on the B4100 adjacent to the site access junctions. Beyond this local impact the proportional change will be relatively modest.

5.6.2 The distance travelled and total traffic generated have been summarized in **Table 27.** These do not allow for travel plan measures which will reduce car use.

Table 27 Forecast total distance travelled

	Average Dist (km)		Distance (km/day)		Distance (annual) (Mvkm)	
	Car	HGV	Car	HGV	Car	HGV
Western	15	111	53267	146648	19	54
Eastern			29593	81471	11	30

5.6.3 The assumed average distances are set out in **Table 28**. The public transport, walk and cycle trips are based on National Travel Survey data (outside London) (NTS Table 0409). The car-based distances are based on local data as set out above.

Table 28 Average distance by mode

(km)	Train*	Bus*	Taxi	m/c	Car driver	Car passenger	Bicycle*	On foot*
Average Distance	37.7	9.5	15.3	15.3	15.3	15.3	5.1	1.5

5.6.4 The daily trips by mode have been calculated with reference to the base year mode share. These are summarized in **Table 29**.

Table 29 Daily trips by mode

	Train	Bus	Taxi	m/c	Car driver	Car passenger	Bicycle	On foot
Mode share	0.0%	7.5%	0.0%	2.0%	72.0%	11.5%	6.0%	1.0%
Western	0	363	0	97	3487	551	290	48
Eastern	0	201	0	54	1937	306	161	27
Combined	0	564	0	150	5424	857	451	75

5.6.5 The annual distances by mode are calculated in **Table 30**. These are expressed in Million kilometres travelled. These represent scenarios where the site comprises 100% B2 or 100% B8. In practice the development is likely to include an element of both uses.

Table 30 Annual distance travelled by mode (Mkm)

	Train	Bus	Taxi	m/c	Car driver	Car passenger	Bicycle	On foot
Mode share	0.0%	7.5%	0.0%	2.0%	72.0%	11.5%	6.0%	1.0%
Western	0	1.32	0	0..54	19.44	3.07	0.85	0.04
Eastern	0	0.74	0	0.30	10.80	1.71	0.47	0.02
Combined	0	2.06	0	0.84	30.24	4.78	1.32	0.05

6.0 CONCLUSIONS

6.1 This Transport Assessment considers the development of a proposed logistics development near at M40 Junction 10 which is being promoted by Albion Land.

6.2 Development at M40 Junction addresses the needs of the logistics industry for large scale distribution units with high quality access to the strategic road network. Notwithstanding this the vehicular access alone does not define the transport credentials of the proposals.

6.3 The scheme will provide local employment opportunities for the rapid housing growth planned in Bicester and the surrounding area, reducing the need to travel far afield, and providing employees from these areas with convenient travel choices reflecting the need in national and local policy for more sustainable travel patterns in the future. These connections will include:

- Bus service between the site and Bicester;
- Segregated cycle route between the site and Bicester and on-site secure cycle parking;

6.4 Safe and suitable access has been identified for both sites. The access junctions have been designed in accordance with prevailing design standards and best practice guidance. These have been subject to operational testing and an independent road safety audit.

6.5 Within the Western Site an existing public right of way will be diverted in accordance with OCC guidance.

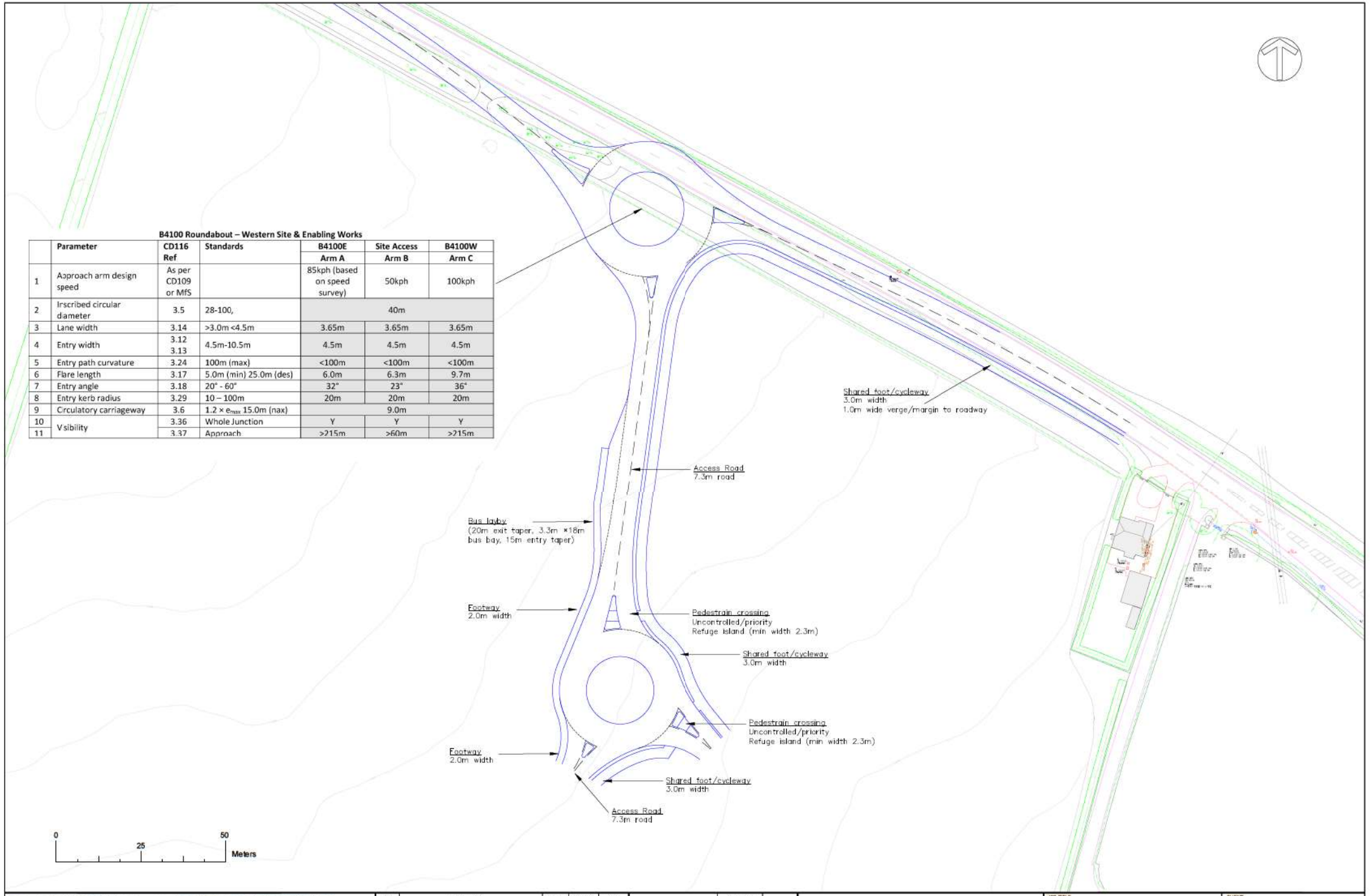
6.6 There are planned changes to the road network by others to adapt to future growth in Bicester and changes in transport policies. This will include Growth Fund changes to the Padbury and Baynard's Green Roundabouts. Significant changes are planned in Bicester including the realignment of the A4095, construction of the Southeast Link Road and changes to the A4095 Banbury Road roundabout. Whilst it is unlikely that further optimisation of vehicular capacity will be required at either location due to the Development, the integration of improved pedestrian and cycle connectivity, to be delivered by the Development, into these schemes will need to be assessed and agreed with the respective promoting authorities.

6.7 Framework Travel Plans have been prepared which will form a basis for detailed Travel Plans by future occupiers setting out site wide and individual travel policies and initiatives to encourage sustainable trip patterns.

6.8 Overall, the Development is compliant with the prevailing transport policies, placing a strong emphasis of the development of sustainable travel patterns.

DTA Drawings 17213-09-GA & 17213-09-TRACK

Western Site Access
General Arrangement
Vehicle Tracking



B4100 Roundabout – Western Site & Enabling Works

	Parameter	CD116 Ref	Standards	B4100E Arm A	Site Access Arm B	B4100W Arm C
1	Approach arm design speed	As per CD109 or MfS		85kph (based on speed survey)	50kph	100kph
2	Irscribed circular diameter	3.5	28-100,	40m		
3	Lane width	3.14	>3.0m <4.5m	3.65m	3.65m	3.65m
4	Entry width	3.12 3.13	4.5m-10.5m	4.5m	4.5m	4.5m
5	Entry path curvature	3.24	100m (max)	<100m	<100m	<100m
6	Flare length	3.17	5.0m (min) 25.0m (des)	6.0m	6.3m	9.7m
7	Entry angle	3.18	20° - 60°	32°	23°	36°
8	Entry kerb radius	3.29	10 – 100m	20m	20m	20m
9	Circulatory carriageway	3.6	1.2 × e_{max} 15.0m (nax)	9.0m		
10	Visibility	3.36	Whole Junction	Y	Y	Y
11		3.37	Approach	>215m	>60m	>215m

REV	DESCRIPTION	DRAWN	INITIALS	DATE

DRAWING STATUS	CHECKED BY	DATE

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Forester House, Doctors Lane
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JOB TITLE: LAND AT M40 JUNCTION 10
CLIENT: ALBION LAND
DRAWING TITLE: WESTERN SITE ACCESS GENERAL ARRANGMENT

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
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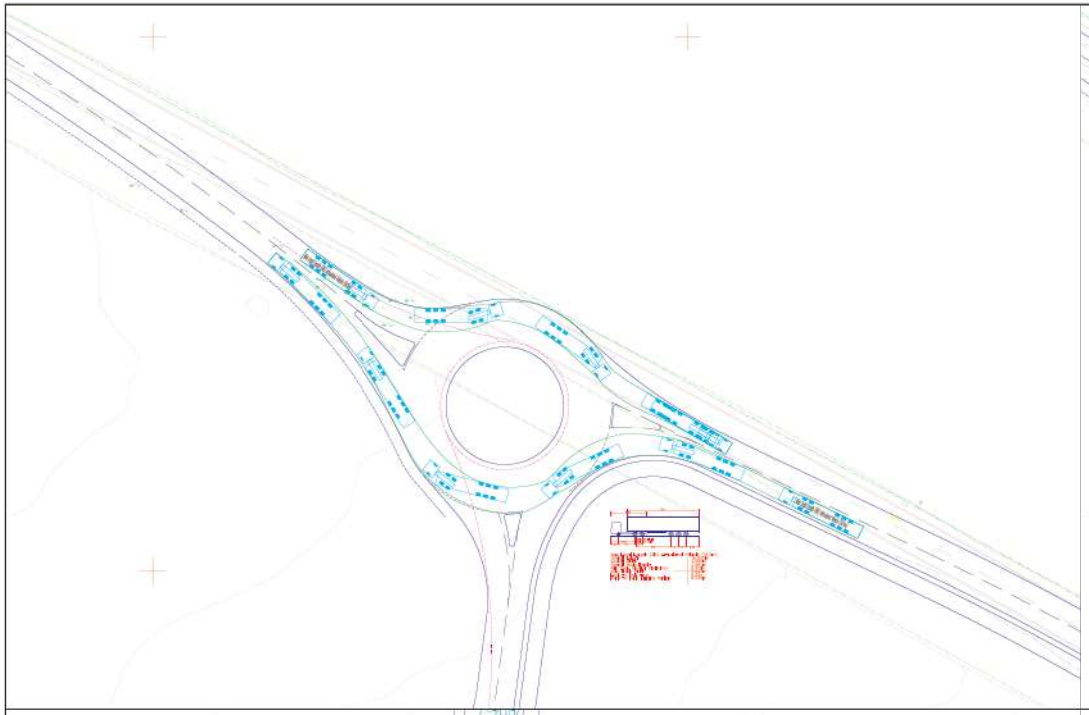

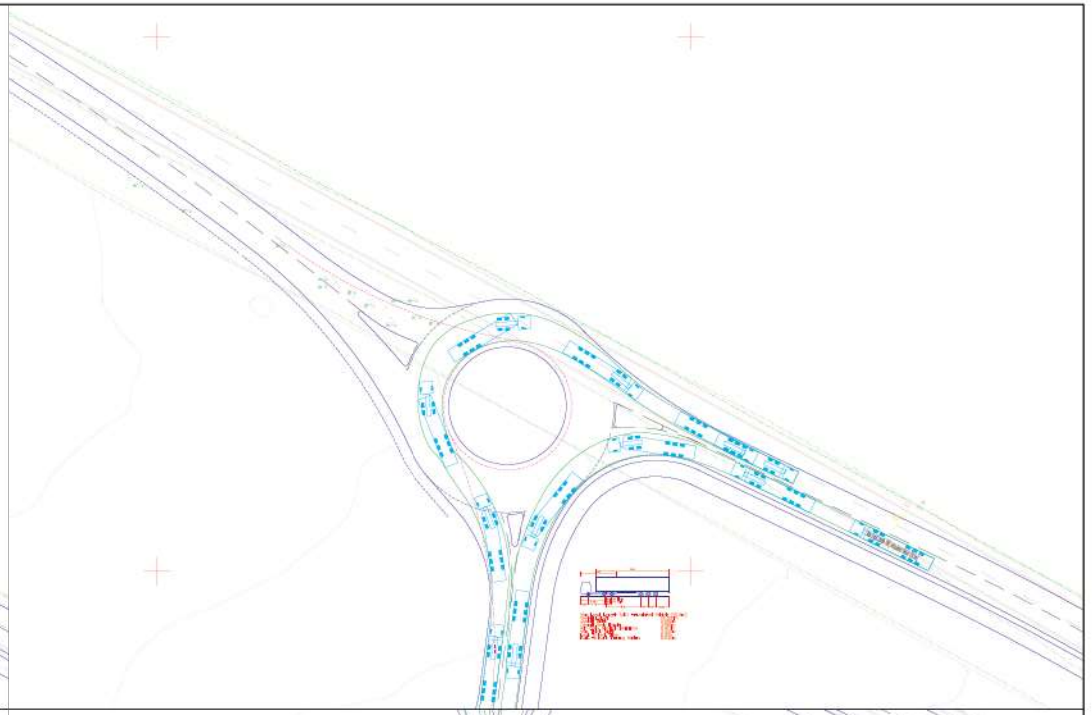

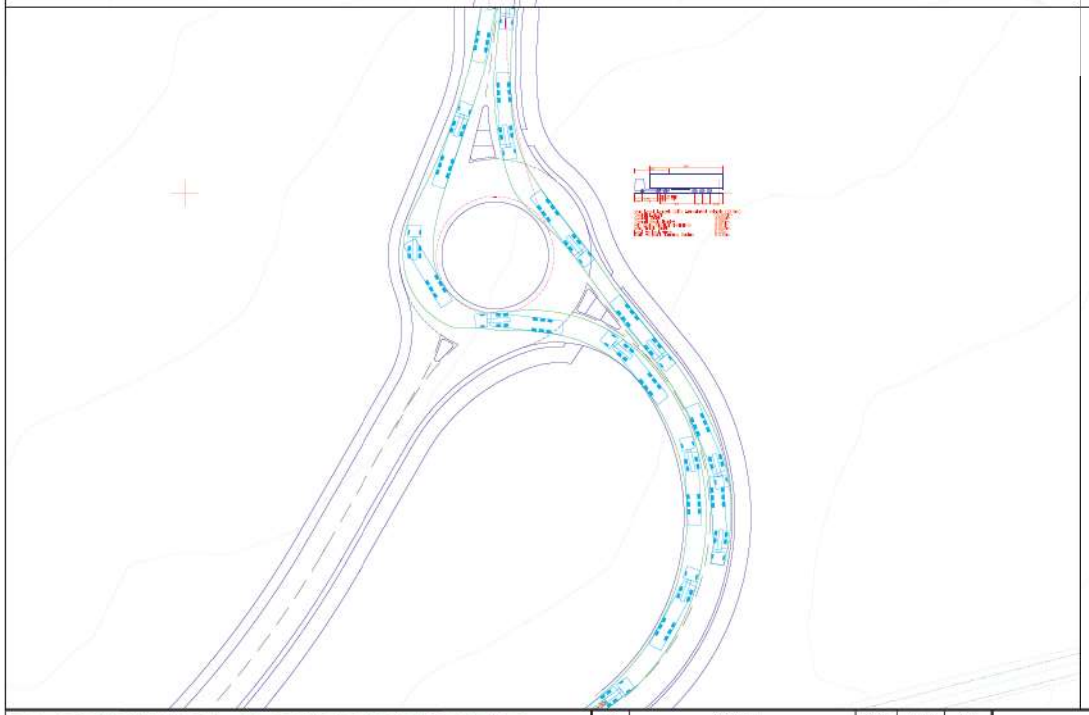

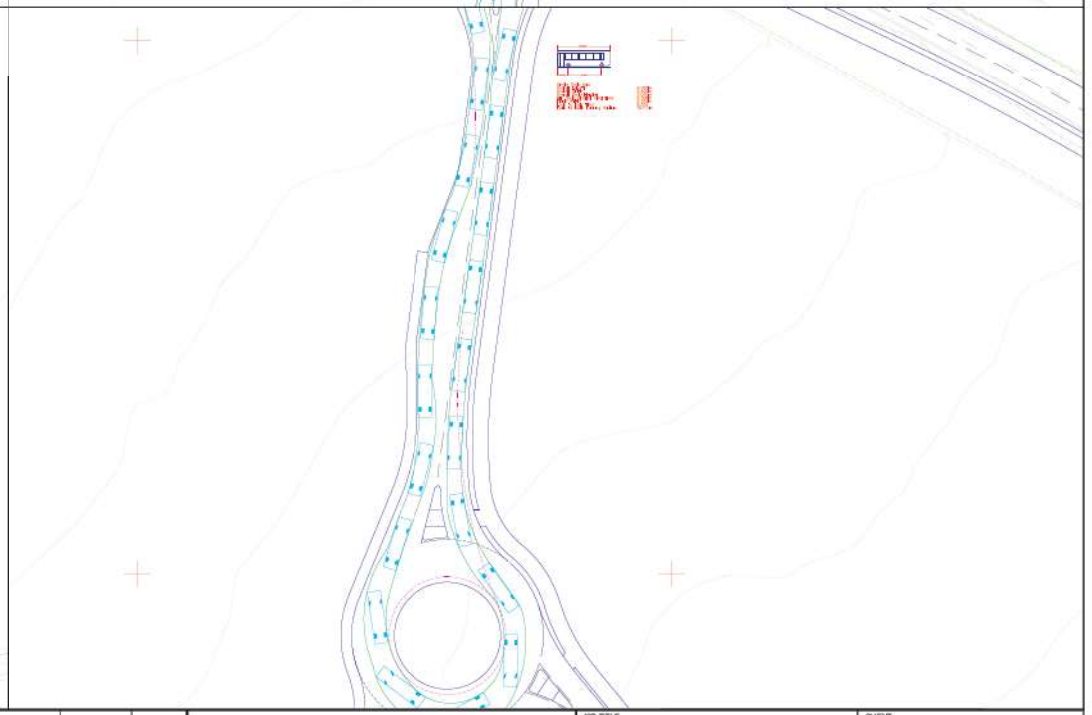

REV	DESCRIPTION	DRAWN	INITIALS	DATE

DRAWING STATUS	CHECKED BY	DATE

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JOB TITLE	CLIENT
LAND AT M40 JUNCTION 10	ALBION LAND

DRAWING TITLE

Western Site Access
General Arrangement
Vehicle Tracking

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
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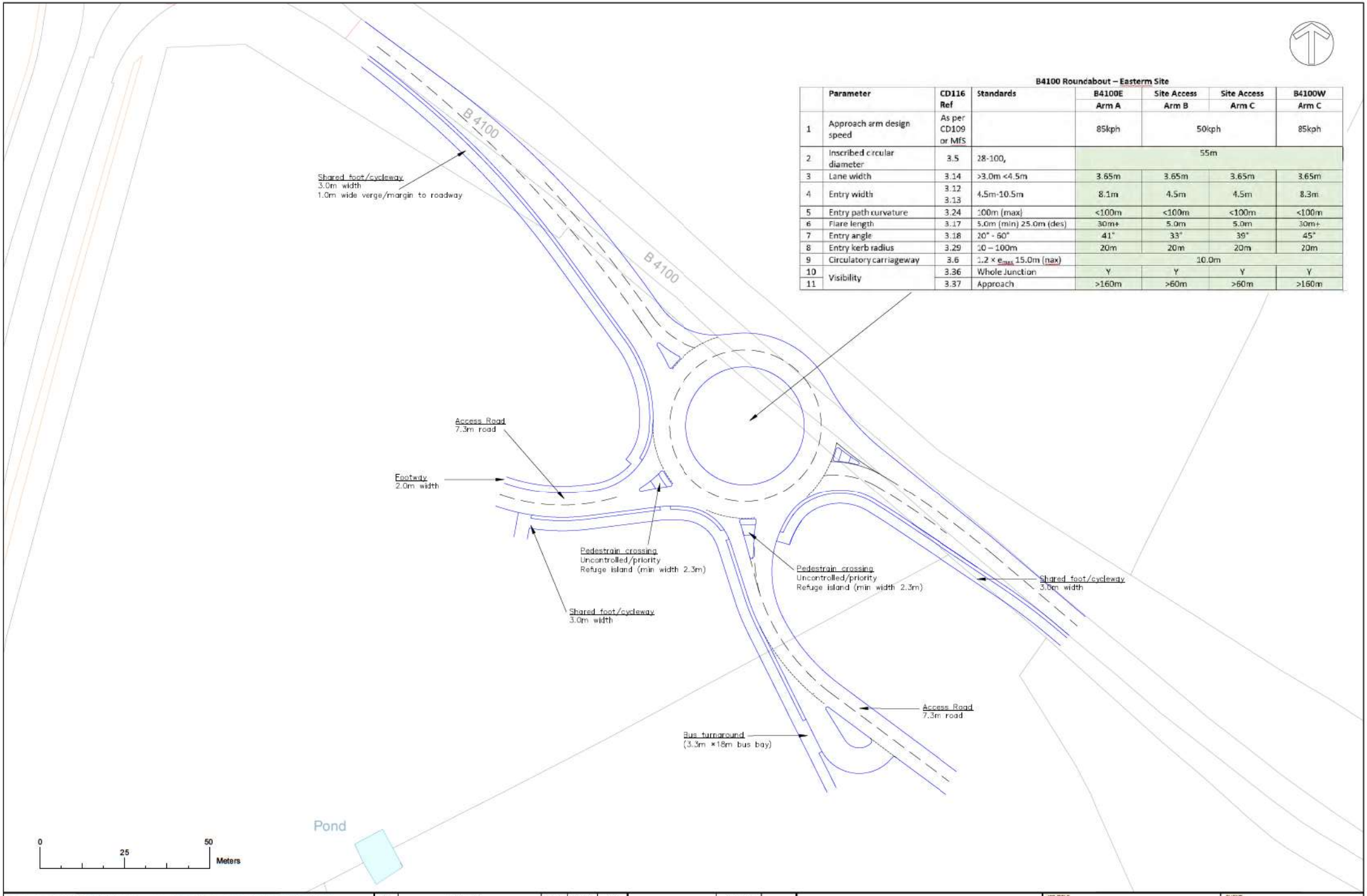
DTA Drawings 17213-16-GA & 17213-16-GA

Eastern Site Access
General Arrangement
Vehicle Tracking



B4100 Roundabout – Easterm Site

	Parameter	CD116 Ref	Standards	B4100E Arm A	Site Access Arm B	Site Access Arm C	B4100W Arm C
1	Approach arm design speed	As per CD109 or MfS		85kph	50kph		85kph
2	Inscribed circular diameter	3.5	28-100,	55m			
3	Lane width	3.14	>3.0m <4.5m	3.65m	3.65m	3.65m	3.65m
4	Entry width	3.12 3.13	4.5m-10.5m	8.1m	4.5m	4.5m	8.3m
5	Entry path curvature	3.24	100m (max)	<100m	<100m	<100m	<100m
6	Flare length	3.17	5.0m (min) 25.0m (des)	30m+	5.0m	5.0m	30m+
7	Entry angle	3.18	20° - 60°	41°	33°	39°	45°
8	Entry kerb radius	3.29	10 – 100m	20m	20m	20m	20m
9	Circulatory carriageway	3.6	1.2 × e_{max} 15.0m (nax)	10.0m			
10	Visibility	3.36	Whole Junction	Y	Y	Y	Y
11		3.37	Approach	>160m	>60m	>60m	>160m

REV	DESCRIPTION	DRAWN	INITIALS	DATE

DRAWING STATUS	CHECKED BY	DATE

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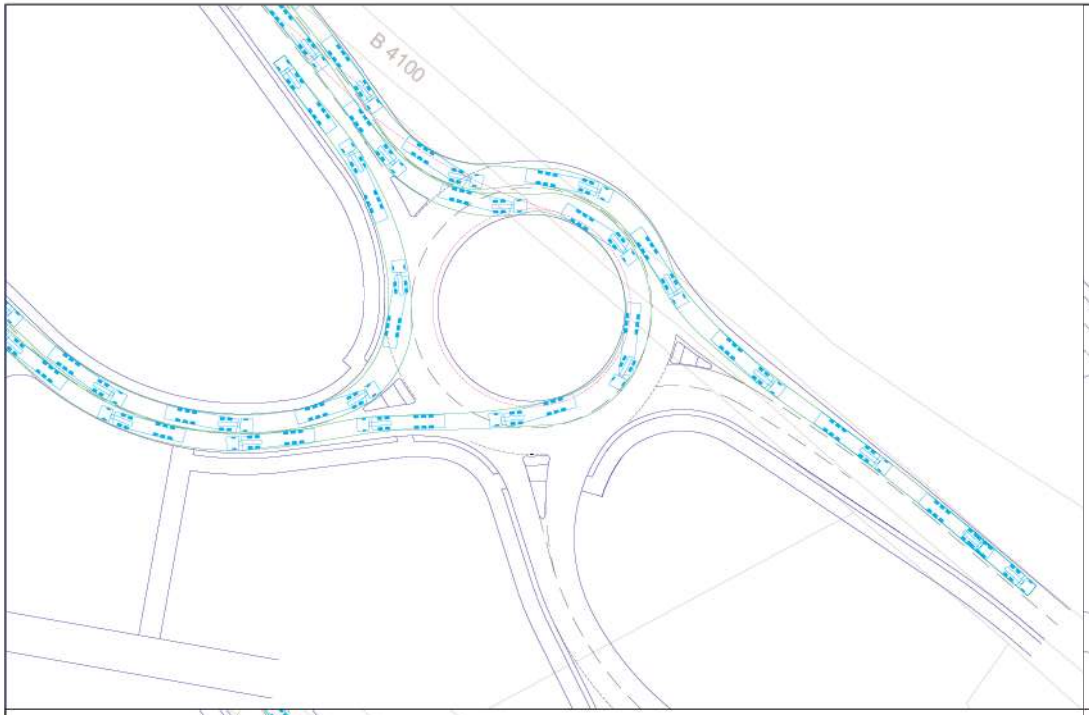
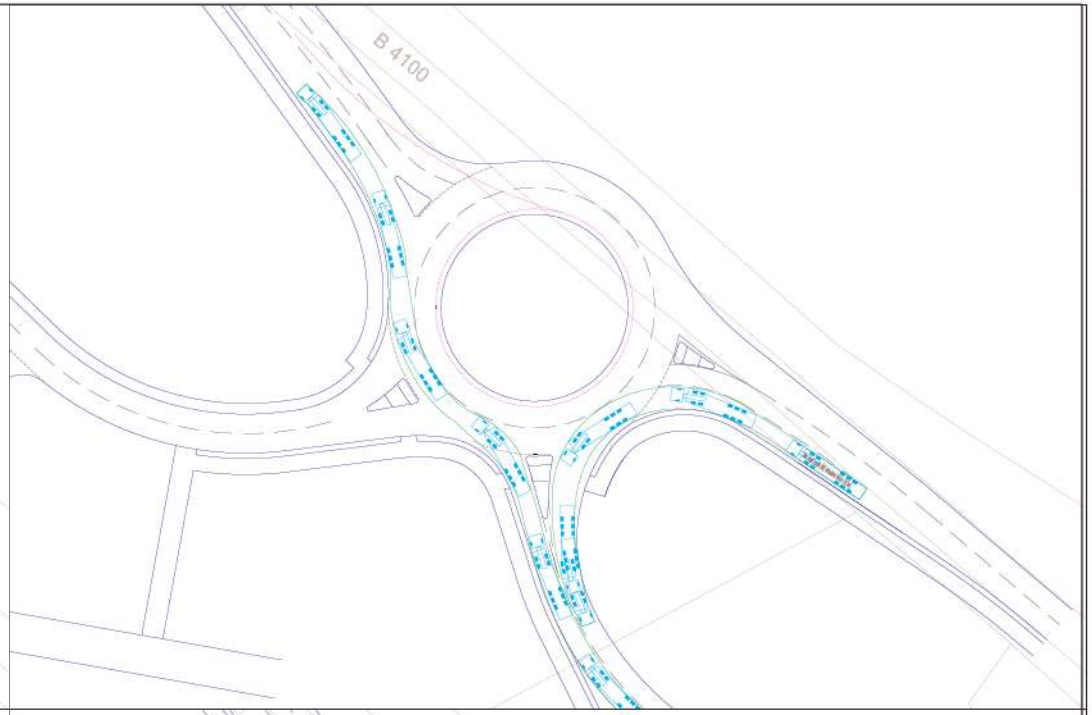
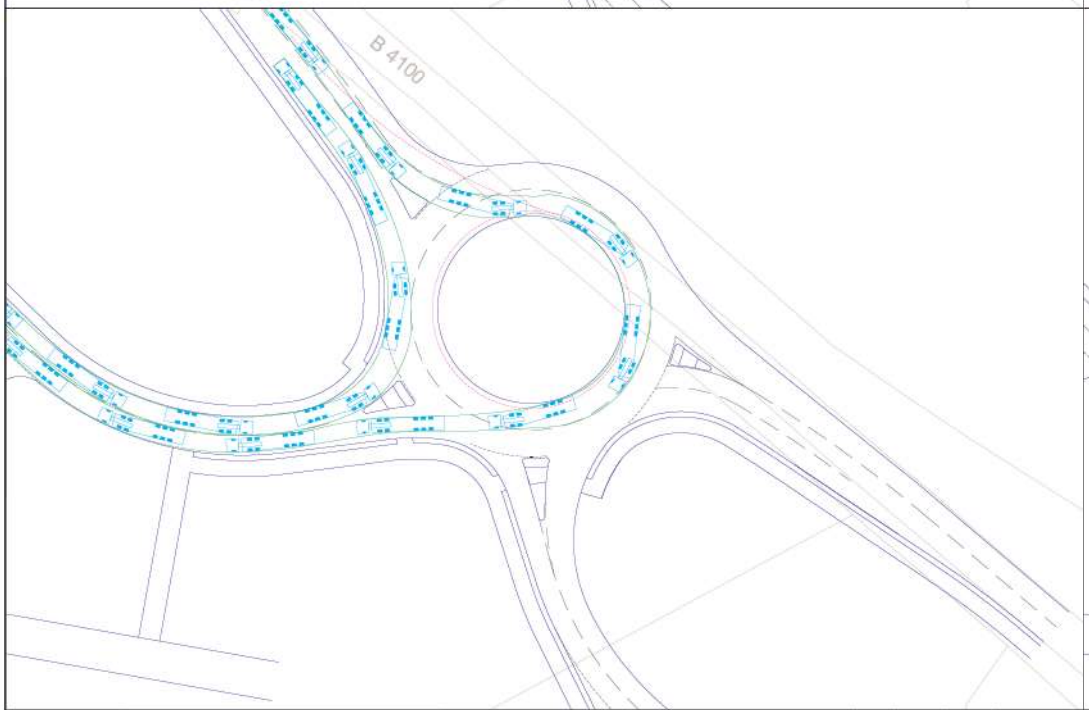
JOB TITLE	CLIENT
M40 JUNCTION 10	ALBION LAND

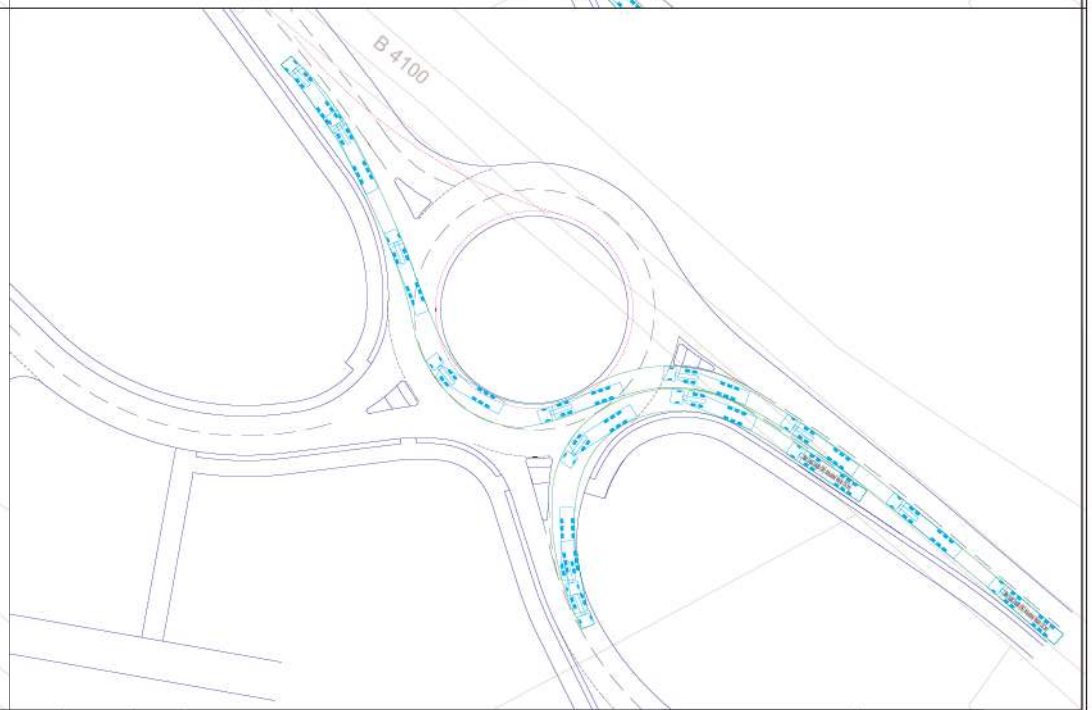
DRAWING TITLE
EASTERN ACCESS
GENERAL ARRANGEMENT
PRE-GROWTH FUND SCHEME

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1:500@A1	RM	03/08/21	17213-16-GA	P0









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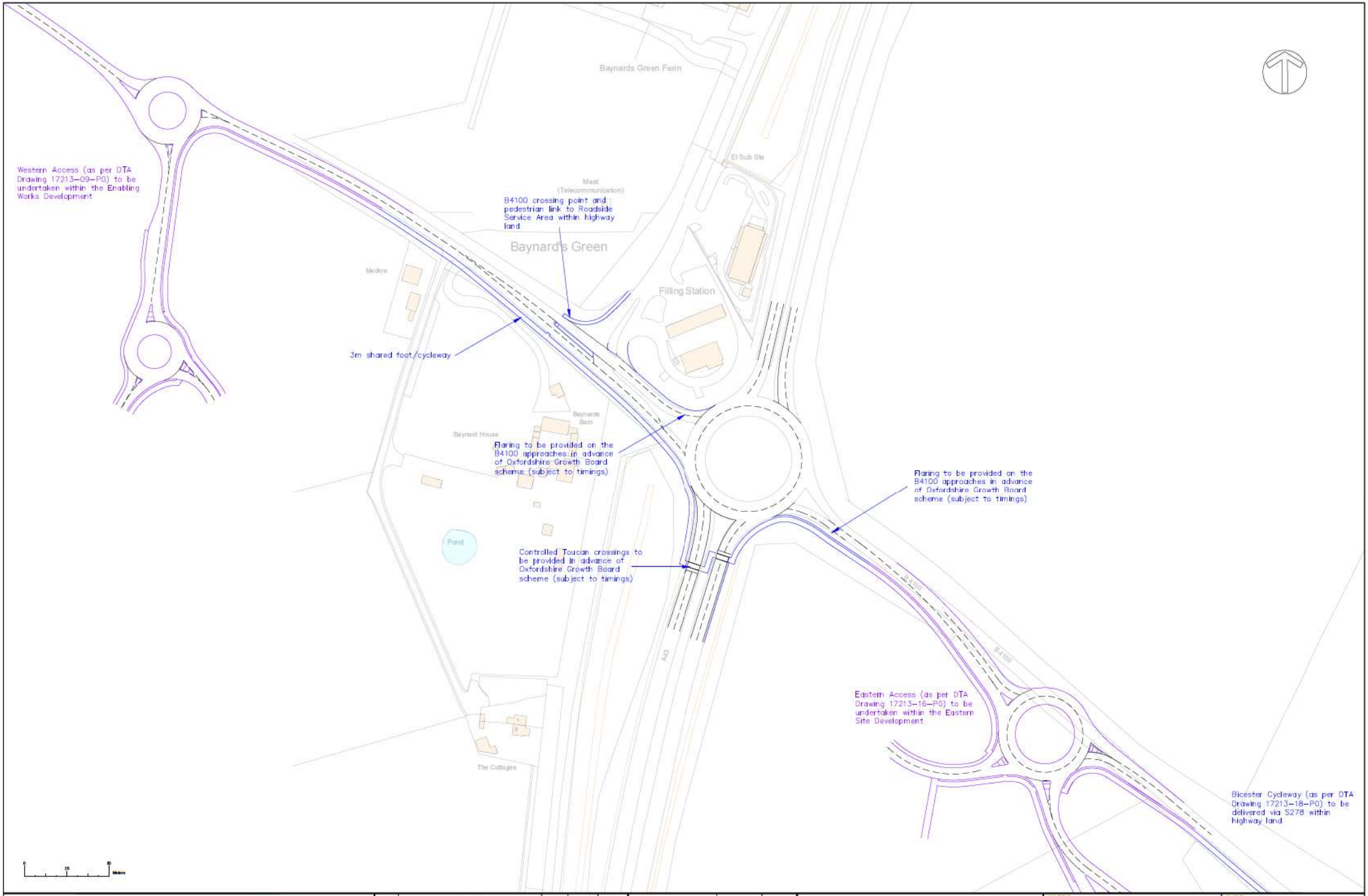
JOB TITLE	CLIENT
M40 JUNCTION 10	ALBION LAND

DRAWING TITLE
Eastern Site Access
General Arrangemet
Vehicle Tracking

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1:250@A1	RM	03/08/21	17213–16	

DTA Drawings 17213-17

Interim Scheme
General Arrangement



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JOB TITLE	CLIENT
M40 JUNCTION 10	ALBION LAND

DRAWING TITLE

INTERIM SCHEME

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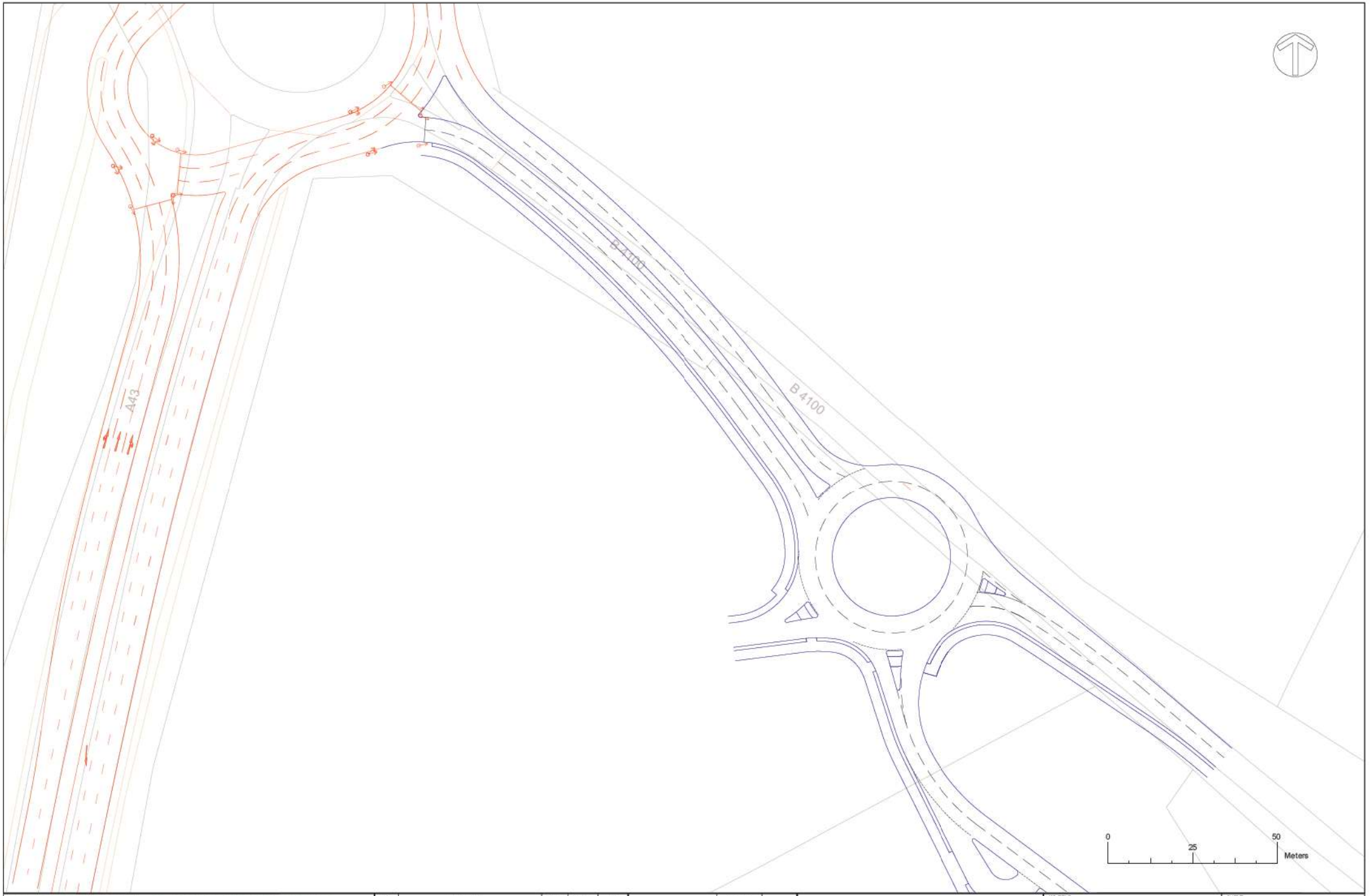
1:1000@A1	RM	03/09/21	17213–17–GA	P0

DTA Drawings 17213-13

Post Growth Fund Scheme
General Arrangement



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JOB TITLE	CLIENT
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DRAWING TITLE

EASTERN ACCESS POST GROWTH FUND SCHEME

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
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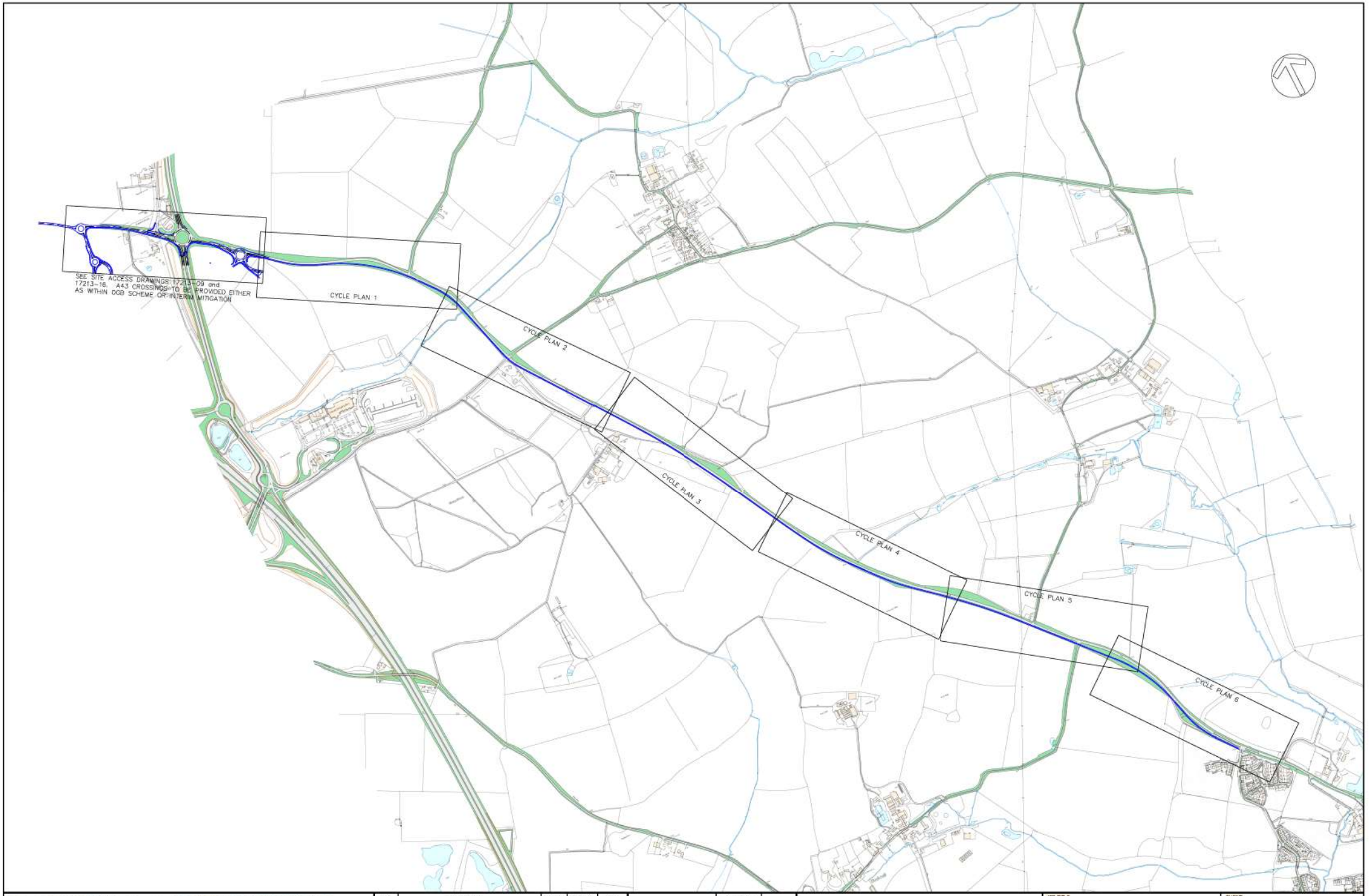
DTA Drawings 17213-18-CONCEPT, 17213-18-GA1, 17213-18-GA2, 17213-18-GA3

Bicester Cycle Path
General Arrangement



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JOB TITLE	CLIENT
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DRAWING TITLE

PROPOSED CYCLEWAY CONCEPT

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
NTS		03/09/21	17213-18-CONCEPT	