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NEWPORT PAGNELL · MILTON KEYNES

CHAPTER 12

ENVIRONMENTAL STATEMENT

TRANSPORTATION

JULY 2021

newlands developments

12.0 TRANSPORTATION

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ENVIRONMENTAL STATEMENT

TRANSPORTATION

12.1 INTRODUCTION

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12.1 INTRODUCTION

12.1.1 This chapter of the ES assesses the likely environmental impacts that would be created by the changing transport conditions introduced by the Proposed Development.

12.1.2 The Proposed Development will increase traffic movements and change travel patterns on the local transport network. This includes both the volume of traffic (the number of arrival and departure trips) and the traffic composition (percentage of HGVs) during the construction and operational phases. In addition, the proposed alterations to the highway infrastructure, required to accommodate the additional development trips, will alter the conditions for existing road users. Therefore, the effect of these changes on pedestrians, cyclists, equestrians, and other road users requires assessment within this chapter.

12.1.3 The chapter describes the relevant policy documents; the assessment methodology including relevant guidance; the baseline conditions at the Assessment Site and surroundings; the likely significant environmental effects with regards to the impact of construction traffic in the construction phase, as well as the impacts of the development on walking, cycling and horse-riding (WCHR) and on vehicle travellers, in the operational phase; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed. This chapter has been prepared by ADC Infrastructure Ltd.

12.1.4 The Transport Assessment (TA) and Framework Travel Plan (FTP) from the previous 2019 application that were prepared by ADC Infrastructure Ltd are included in **Appendix 12.1 and Appendix 12.2** respectively. Additionally, a Transport Assessment Addendum (TAA) has also been prepared and is included at **Appendix 12.3.**

12.1.5 The TA quantifies the traffic flows on the highway network surrounding the Application Site in the morning and evening highway network peak hour periods, both without and with the Proposed Development in place. It calculates the forecast traffic flows in the future 2026 assessment year, without the Proposed Development in place but with the relevant committed developments within the wider area. The TA examines the traffic generation of the Proposed Development, the distribution and assignment of the development traffic, and the effect of the development traffic on the operation and safety of the surrounding highway network in the future 2026 assessment year. Additionally, the TA and TA Addendum examine the traffic impacts of the Proposed Development on the strategic road network in accordance with DfT Circular 02/2013, which requires assessment in the opening year (2023) and the forward planning year (2031).

12.1.6 The TA and FTP also examine the accessibility of the Application Site by walking, cycling and bus, and identify the likely modal split of person trips associated with the Proposed Development.

12.1.7 The TA addresses the impact of the Proposed Development vehicular and person trips on the surrounding transport infrastructure, and identifies improvements which, in combination with the FTP, would accommodate and mitigate the increased travel demand. As a result, the Proposed Development would include the following transport measures and improvements:

- appropriate on-site parking for bicycles, motorcycles, cars (including car sharers and disabled users), electric cars with charging points and HGVs;
- appropriate footways throughout the Proposed Development to facilitate internal pedestrian journeys;
- a new Redway (footway/cycleway) on Willen Road, connecting to Newport Pagnell to the north and the existing H4 Redway Super Route in Milton Keynes to the south. The new Redway would facilitate safe pedestrian and cycle travel to the site, providing a new facility for existing pedestrians and cyclists wishing to walk and cycle between Newport Pagnell and Milton Keynes, where there is currently no infrastructure provided along the Willen Road corridor;
- Toucan crossings at the proposed site access junction to facilitate safe crossing of the site access and Willen Road;
- Travel Plan measures with targets to reduce single occupancy car travel, by promoting walking, cycling, bus travel and car sharing;
- new bus stops on Willen Road at the site access junction;
- a comprehensive mitigation scheme is proposed at Marsh End Roundabout. The improved junction will operate in conjunction with the proposed signal-controlled site access junction, to improve traffic flows and journey times through the area and along Willen Road. Milton Keynes Council (MKC) Highways confirmed that the principle of traffic signal control at the Marsh End Roundabout was acceptable and in keeping with the findings of an earlier study of the A422 corridor undertaken on their behalf.

12.1.8 The TA (Appendix 12.1 of this ES) demonstrates that the existing and proposed highway infrastructure could satisfactorily accommodate the pedestrian, cyclist, public transport and vehicular movements associated with the Proposed Development.

12.1.9 MKC, the local highway authority, and Highways England were consulted as part of the TA process. As part of this consultation process the highway network peak hour vehicle trip generation of the Proposed Development, the distribution and assignment of light vehicle and HGV traffic, the assessment year traffic flows, and the study area for assessment, were agreed. Hence, much of this ES assessment is based on agreed contents from the TA.

12.1.10 The TAA also considers the cumulative impact of the Proposed Development in combination with the wider MK:East allocation. It is concluded that the proposed highway mitigation strategy is fully compatible with the wider highway and infrastructure strategy that is proposed for the MK:East allocation.

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12.2 RELEVANT POLICY

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12.2 RELEVANT POLICY

Policy Context

12.2.1 Chapter 3 of this ES details the relevant Planning Policy. In addition, this transportation chapter summarises the following national and local policy, as they relate to transport matters:

- National Planning Policy Framework (NPPF or "The Framework") (July 2018)
- Department of Transport Circular 02/2013, The Strategic Road Network and the Delivery of Sustainable Development
- Plan:MK (the local plan for Milton Keynes adopted on 20 March 2019)
- Milton Keynes East Development Framework Supplementary Planning Document (SPD)
- Mobility Strategy for Milton Keynes 2018-2036 (LTP4).

National Policy

National Planning Policy Framework

12.2.2 The NPPF states at paragraph 10 "So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development".

12.2.3 In defining the presumption in favour of sustainable development for decision-taking, paragraph 11 states:
"For decision-taking this means:
c) approving development proposals that accord with an up-to-date development plan without delay; or
d) where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:
i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed; or
ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole."

12.2.4 Under the heading considering development proposals, paras 110 and 111 state:
"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:
a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
b) safe and suitable access to the site can be achieved for all users;
c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and
d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."

12.2.5 It goes on to say (para 112):
"Within this context, applications for development should:
a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and
e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

12.2.6 The Proposed Development has been designed in accordance with the NPPF, and the TA, FTP, and TA Addendum demonstrate that the above objectives would be achieved.

Department for Transport Circular 02/2013 - The Strategic Road Network and the Delivery of Sustainable Development

12.2.7 Highways England (HE) is responsible for operating, maintaining and improving the Strategic Road Network (SRN) in England on behalf of the Secretary of State for Transport. Circular 02/2013 sets out the way in which HE will engage with communities and the development industry to deliver sustainable development and, thus, economic growth whilst safeguarding the primary function and purpose of the SRN.

12.2.8 The Circular records the same priorities and principles for SRN as the NPPF does on a general basis. For example, in relation to plan-making the pattern and location of development should encourage the minimisation of trip generation and the use of sustainable modes of transport, whilst not compromising the fulfilment of the Primary Purpose of the SRN.

12.2.9 At paragraph 9 the Circular states:
"Development proposals are likely to be acceptable if they can be accommodated within the existing capacity of a section (link or junction) of the strategic road network, or they do not increase demand for use of a section that is already operating at over-capacity levels, taking account of any travel plan, traffic management and/or capacity enhancement measures that may be agreed. However, development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe".

12.2.10 With respect to decision-making the Circular advises (para 21) that:
"Where development proposals are consistent with an adopted Local Plan, the Highways Agency (HA) does not anticipate the need for engagement in a full assessment process at the planning application stage. In such circumstances consideration will normally be limited to the agreement of the details of the transport solution, including any necessary mitigation measures, and to ensuring that the transport impacts are included in the overall environmental assessment provided to the local planning authority, rather than the principle of the development itself"

12.2.11 In assessing development impact the Circular further advises (para 25) that:
"The overall forecast demand should be compared to the ability of the existing network to accommodate traffic over a period of up to ten years after the date of registration of a planning application or the end of the relevant Local Plan period whichever is the greater;

HE expects promoters of development to put forward initiatives that manage down the traffic impact of proposals to support the promotion of sustainable transport and the development of accessible sites – which is particularly necessary where the potential impact is on sections of the strategic road network that could experience capacity problems in the short or medium term, and;

Where the overall forecast demand at the time of opening of the development can be accommodated by the existing infrastructure, further capacity will not be appropriate."

Local Policy

Plan: MK

12.2.12 The local plan for Milton Keynes, Plan:MK, was adopted on 20 March 2019 and sets out the growth strategy for the city 2016-2031. The plan recognises that Milton Keynes is an attractive city with a job surplus, and a large number of skilled employment sites. Therefore, the focus of the plan is how best to accommodate this success and support sustainable growth.

12.2.13 The development site is allocated under policy SD12: Milton Keynes East Strategic Urban Extension. Policy SD12 covers the proposed development site as well as land to the east for a: *"comprehensive new residential and employment development to meet the long-term needs of Milton Keynes".* The allocation sets aside 105ha of land for employment use and stipulates that appropriate sustainable infrastructure (including Redways) be brought forward to support the site's sustainable credentials. Other criteria attached to the allocation relate more closely to the expected provision of around 5,000 dwellings.

12.2.14 The policy SD12 states that: *"Development can commence once the necessary strategic infrastructure required to make the site deliverable is funded and is being delivered. In that circumstance, the development of the site will be allowed to proceed within the plan period as an additional source of housing and employment land supply and that Development will be brought forward in line with all relevant policies in Plan:MK, particularly Policies SD1, SD9, SD10 and INF1".* The relevant policies concern placemaking, principles for urban extensions, delivery of urban extensions, and delivering infrastructure respectively.

12.2.15 Further, with regards to transport, policy SD12 states that proposals for development will be expected to meet the following criteria:

The phased introduction of a comprehensive network of transport infrastructure in line with the Local Investment Plan, to include grid road connections to H4/V11 to the west and improved highway connections to Newport Pagnell and Central Milton Keynes (CMK), including new and/or enhanced vehicular crossings of the M1, involving highway works on and off-site.

A corridor of land safeguarded for a fast mass-transit system, and associated infrastructure, enabling connectivity to CMK and other key destinations. The width of the corridor should be sufficient to enable a range of possible transit solutions to come forward whilst also ensuring the efficient use of land for achieving the scale of development proposed within this policy.

A network of segregated, and where appropriate grade-separated, new and enhanced footpaths, cycleways and bridleways (including redways) to connect to existing routes beyond the site, including provision of appropriate pedestrian and cyclist crossings of the A422 and suitable safe and attractive crossings of the M1 as appropriate.

12.2.16 Chapter 8 of Plan:MK sets out policies specific to transport and connectivity, including: *"A sustainable transport network, walking and cycling, public transport, low emission vehicles, freight, the grid network and digital communications".*

12.2.17 The policies set out in Chapter 8 are influenced by national policy and also three key local documents on transport and connectivity. These are summarised below:

- Milton Keynes Futures 2050: a commission established in 2015 to consider the future of Milton Keynes. The Commission recommended that Mobility was *"fundamental to the future prosperity of Milton Keynes"* and concluded that it was clear that for Milton Keynes to be successful, *"everyone who lives, works, studies or does business here must be able to move freely and on demand, and not be reliant on access to a private car.*
- Milton Keynes Mobility Strategy LTP4 2018-2036: at the time that the local plan was adopted, a new Mobility Strategy (LTP4) was being prepared to replace the Milton Keynes Transport Vision and Strategy LTP3, and incorporate the Milton Keynes Futures 2050 vision for smart, shared and sustainable mobility. LTP4 is summarised in further detail below.
- Milton Keynes Transport Vision and Strategy LTP3 2011 to 2031: this document (now superseded by Milton Keynes Mobility Strategy LTP4 2018-2036) set out the strategy for delivering local and national policy objectives. The document identified the vision for Milton Keynes: *"By 2031, Milton Keynes will have the most sustainable transport system in the country, increasing its attractiveness as a place to live, work, visit, and do business. There will be a real transport choice to satisfy individual preferences and encourage more sustainable travel behaviour. The transport system will provide fast and efficient movement of people and goods and will be accessible for all. Everyone will have access to key services and amenities, including employment, health, education, retail and leisure."*

12.2.18 Policy CT2 in Chapter 8 of Plan:MK concerns development proposals, and states that *"Development proposals will be required to minimise the need to travel, promote opportunities for sustainable transport modes, improve accessibility to services and support the transition to a low carbon future. Development proposals will be permitted that:*

1. *Integrate into our existing sustainable transport networks and do not have an inappropriate impact on the operation, safety or accessibility to the local or strategic highway networks;*
2. *Mitigate impacts on the local or strategic highway networks, arising from the development itself or the cumulative effects of development, through the provision of, or contributions towards necessary and relevant transport improvements including those secured by legal agreement;*
3. *Ensure that development proposals do not prejudice the future development or design of suitable adjoining sites;*
4. *Provide safe, suitable and convenient access for all potential users;*
5. *Provide on-site layouts that are compatible for all potential users with appropriate parking and servicing provision in line with the Milton Keynes Parking Standards Supplementary Planning Document (January 2016);*

6. *Do not result in inappropriate traffic generation or compromise highway safety;*
7. *Offer maximum flexibility in the choice of travel modes, including walking and cycling, shared transport, and with accessibility for all potential users;*
8. *Protect and where possible enhance access to public rights of way;*
9. *Provide a public transport connection to the main points of service provision including nearest district or town centre, or community facilities; and*
10. *Where possible incorporate the use of shared transport and low carbon "green" travel modes such as electric vehicle charging capacity".*

Milton Keynes East Development Framework Supplementary Planning Document (SPD)

12.2.19 The Milton Keynes East Development Framework was adopted by MKC on 10 March 2020. The SPD provides guidance on how the allocation of Milton Keynes East (Policy SD12 and other relevant policies) within Plan:MK should be planned and developed. The SPD will be an important material consideration when determining relevant planning applications.

12.2.20 The SPD describes the site and its context, the development principles, the development framework including land-use and the development delivery which includes infrastructure delivery.

12.2.21 Figure 3.1 of the SPD shows the Concept Plan for the Milton Keynes East Development, identifying the Proposed Development site as employment land and specifying that Willen Road will be retained and upgraded to a grid road with a new Redway provided.

12.2.22 Section 4.3 sets out the movement strategy for the Milton Keynes East Development: The primary highway access will be provided by two new grid roads which will be dual carriageways, with the western grid road branching off Tongwell Street and cross the M1 via a new bridge and the new eastern grid road replacing the A509 London Road which would be downgraded to provide local access; the Milton Keynes East Development will enable the future provision of a fast mass transit system linking the SUE with central Milton Keynes; existing bus services should be retained and extended where appropriate.

12.2.23 With regards to infrastructure delivery, paragraphs 5.2.3 and 5.2.4 state:

5.2.3 The planning obligations regime for Milton Keynes will continue as it currently stands. In the case of this development, this will be a number of individual S106 Agreements entered into in compliance with an overarching MK Tariff Framework Agreement whereby a contribution is made to infrastructure costs through Tariff payments for each unit of development.

5.2.4 It is envisaged that infrastructure for the SUE will be delivered through each of the landowners and lead developers signing up to these Tariff arrangements.

Mobility Strategy for Milton Keynes 2018-2036 (LTP4): Mobility for All

12.2.24 Milton Keynes fourth Local Transport Plan is made up of long-term transport objectives and outcomes, supported by a delivery plan that sets out various terms of completion for each targeted outcome. A monitoring plan is in place to measure the success of the outcomes against set criteria.

12.2.25 Milton Keynes faces a number of specific transport challenges:

- *"MK potential to grow from 268,000 to c 400,000 people by 2050,*
- *Additional 31,000 homes beyond the forecasts in current plans, mostly at the outer areas of the city resulting in further traffic growth to access.*
- *Growth is an expectation for Milton Keynes meaning the current 16% net inward commuting is likely to increase bringing further pressure on the transport system.*
- *Mobility to the city a high priority for businesses and local residents and visitors.*
- *Milton Keynes' ambition is to lead the way in transport innovation.*
- *Reliable journey times for all modes of transport are needed for Milton Keynes to remain competitive".*

12.2.26 The objectives of LTP4 are derived from these challenges, to accommodate the forecast growth in travel demand the city will:

- *"Stabilise average journey times and ensure they remain competitive while promoting the development of smart shared sustainable mobility for all;*
- *Provide a fully integrated and accessible public transport system - "Mobility as a Service" (MaaS);*
- *Develop and promote a 'First Last Mile' culture for future technologies such as autonomous and connected vehicles and sustainable connectivity;*
- *Ensure transport infrastructure is configured to enable the city's future development and growth in travel demand to be accommodated based on the council's 'First Last Mile' Strategy".*

12.2.27 The outcomes are specific, measurable, targets linked to the objectives of the plan and are given a short, medium, or long-term completion timeframe.

Discussion

12.2.28 The above sections outline the policy context against which the Proposed Development, the TA, FTP, TA Addendum, and this ES chapter should be considered. The main points of relevance are:

- The Proposed Development is consistent with NPPF. It is supported by a TA, FTP and TA Addendum, which promote the use of sustainable modes of travel, and propose measures to mitigate the impact of the development trips, in order to ensure that the cumulative impacts are not severe. The TA and TA Addendum conclude that the requirements of NPPF can be satisfied.
- The application will directly support and is consistent with the adopted Plan:MK.
- The application and the proposed development are consistent with local policy, as the application site is and can be made accessible by all modes of transport, including sustainable travel modes (walking, cycling and bus), and measures will be provided to facilitate sustainable modes. This includes new footways, cycleways and pedestrian crossings.

Planning history and highway authority consultation

12.2.29 ADC Infrastructure Limited produced a TA and FTP in support of a detailed planning application for new employment development on land at Caldecote Farm, to the west of Willen Road, in Newport Pagnell (application reference 19/02402/FUL). The development proposals comprised the construction of two storage and distribution units (Class B8) with associated car parking, servicing, landscaping, earth bunding and off-site drainage. The two proposed B8 warehouse units had a total GFA of 81,361sqm (875,763sqft), including 4,583sqm of ancillary office space.

12.2.30 The TA concluded that: the opportunities to access the site by sustainable modes have been taken up; improvements can be undertaken within the transport network that mitigate the impact of the development; and the proposed development would not result in severe traffic impacts on the surrounding highway network. It was concluded that the proposals therefore accorded with the principles of the NPPF.

12.2.31 MKC provided their initial comments on the TA in their consultation response dated 14 October 2019 (Appendix A of the TA), which confirmed that they agreed with the main conclusions of the TA. However, MKC were concerned that the TA did not propose to make a contribution towards improved bus services and that they did not agree with the location of the access to the car park to Unit 1.

12.2.32 A revised access plan and masterplan, that relocated the car park access to Unit 1 was therefore submitted to MKC. In addition, it was agreed that the development would provide a S106 contribution to fund a bus service to serve the development.

12.2.33 MKC provided their final highways consultations response dated 24 February 2020 (Appendix B of the TA), confirming that the revised access plan for Unit 1 overcame their previous objection. As a result, MKC confirmed that they had no objection to the planning application on transport or highways grounds, subject to conditions to secure the off-site highway works and a S106 Agreement contribution to public transport. An appropriate S106 contribution to public transport was subsequently agreed with MKC.

12.2.34 Highways England had no objection to the application, subject to a condition requiring a Framework Travel Plan, as confirmed in their consultation response dated 12 May 2020 (Appendix C of the TA).

12.2.35 Notwithstanding the above, the planning application was subsequently refused by MKC on 30 June 2020. The reasons for refusal included: that funding for the strategic infrastructure required to deliver the MK:East allocation had (at that time) not been secured and that the cumulative impact of the development with the rest of the MK:East allocation had not been considered; concerns over landscaping; and that (at that time) the Tariff Framework Agreement had not been established.

12.2.36 Since that time, MKC have been successful in their Housing Infrastructure Funding (HIF) bid and have secured funding for the strategic infrastructure required to deliver the MK:East allocation and a Tariff Framework Agreement approach has been suggested, as discussed in the Milton Keynes East Development Framework SPD. A cumulative assessment of the whole MK:East allocation has been undertaken as part of the assessment work prepared in support of the wider development within the MK:East allocation that is being promoted by Berkeley St James (ref 21/00999/OUTEIS).

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12.3 ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

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12.3 ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

Assessment methodology

12.3.1 The assessment of the transport impacts of the proposed development has been undertaken in accordance with the agreed trip rates, development traffic distribution and assignment, committed developments, study area and TA methodology as detailed in the scoping report and highway authority consultation detailed in Appendix A of the TA.

12.3.2 The assessment work within this ES Chapter has been conducted based upon the following:

- DMRB, LA 104, Environmental Assessment and Monitoring.
- DMRB, CD 143, Provision for Non-Motorised Users Designing for walking, cycling and horse-riding.
- Guidelines for the Environmental Assessment of Road Traffic, Institute of Environmental Assessment (IEA), 1993.

12.3.3 IEA Guidelines published in 1993 provide advice specifically aimed at identifying and quantifying the environmental effects of changes in transport and traffic as a result of a development. The IEA guidelines define the environmental effects that should be regarded as a material consideration and then considers the weight to which those effects should be defined. The guidelines provide a list of environmental effects which could be considered as potentially material or significant whenever a new development is likely to give rise to changes in traffic flows.

12.3.4 The environmental guidance contained in DMRB is aimed at the assessment of major road infrastructure projects, not the assessment of traffic flow changes due to development. The Proposed Development does not include the provision of new major road highway infrastructure, and therefore, it is appropriate to focus solely on the IEA Guidelines to appropriately assess the environmental effects of the proposed development.

Significance criteria

12.3.5 The significance, or importance, of an environmental effect is relative to the sensitivity or quantity of a particular type of receptor. Therefore, receptors in this assessment are set out in accordance with their importance. The receptors for this ES range from high to low, and are categorised as International, National, Regional, County, Borough, or Local. **Table 12.1** below categorises the highway network in the vicinity of the Application Site to define the traffic and transport receptors in the area. As shown in **Table 12.1**, there are more Local traffic and transport receptors than any other type of receptor in the vicinity.

Table 12.1: Traffic and transport receptors

Receptor	Importance	Area
International	High	None
National	High	M1 mainline,
Regional	Medium	A509
County	Medium	A422
Borough	Low	Willen Road, March End Road, Tongwell Street,
Local	Low	High Street, Wolverton Road

12.3.6 The predicted impact assessment on the Local to International receptor scale can be neutral (negligible), positive, or negative. Positive impacts are beneficial/advantageous to a receptor, whilst negative impacts are detrimental/adverse.

12.3.7 The impacts range from low to high and are rated as negligible, minor, moderate, or major. The definition of the scale of impact is summarised in **Table 12.2** below.

Table 12.2: Definition of scale of impact

Scale of impact	Definition
Negligible	An effect that is considered not to be significant or to have no influence. This is applicable where there is a neutral impact which is neither positive nor negative.
Minor	An effect that may be a local issue but is unlikely to be of importance in the overall decision-making process.
Moderate	An effect that will be important at local level and potentially upwards.
Major	An effect that will be important at borough, county, or regional level.

12.3.8 The significance of any impact within this assessment is calculated by combining the importance of the receptor (**Table 12.1**) with the scale of impact (**Table 12.2**), through a matrix table, as shown in **Table 12.3** below.

Table 12.3: Impact significance matrix

Sensitivity and type of receptor	Scale of impact			
	Major	Moderate	Minor	Negligible
High: International and National	Major	Major	Moderate	Minor
Medium: Regional and County	Major	Moderate	Minor	Negligible
Low: Borough and Local	Moderate	Minor	Minor	Negligible

12.3.9 In addition to the impact significance, this assessment also takes into account whether the environmental impacts are permanent or temporary.

12.3.10 To assess the environmental impact of the Proposed Development and its traffic, it is necessary within the following sections of this chapter: to determine the existing and opening year traffic levels and characteristics; to determine the time periods and year for assessment; and to identify the geographical boundaries of assessment (i.e. the study area). Once this information is established, the predicted impacts are assessed, along with measures to mitigate any adverse effect.

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12.4 BASELINE CONDITIONS

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12.4 BASELINE CONDITIONS

Site description and context

12.4.1 Details of the Application Site and the Proposed Development are given in Chapter 2 of this ES, including a description of the type and quantum of the development. The existing, committed and proposed pedestrian, cycle, public transport and highway infrastructure is described in detail at Sections 2, 3 and 7 of the TA, and Section 3 of the TA Addendum.

Future year baseline traffic flows

12.4.2 It was agreed with MKC Highways as part of the Scoping Report to use 2026 as the assessment year within the TA for assessment of the local road network. However, in accordance with IEA guidelines, *"the environmental assessment should be undertaken at the year of opening of the development or the first full year of its operation. For a phased development, it may be necessary to consider the first year of each phase".*

12.4.3 It is anticipated that the Proposed Development would be operational in 2023. This chapter of the ES therefore adopts a 2023 assessment scenario.

12.4.4 The highway network peak hours represent the time periods when traffic flows are at their greatest and available capacity of the highway network is at its lowest. Hence these peak hours are assessed in the TA. However, given the potential 24-hour commercial nature of the Proposed Development, the greatest environment impact may not be during the highway network peak hours, as traffic flows will be spread throughout the day. This ES therefore also examines the likely environmental effects based on Annual Average Daily Traffic (AADT) flows.

12.4.5 Chapter 4 of the TAA describes how the 2023 baseline morning and evening peak hour traffic flows have been calculated, using the same methodology outlined in Chapter 6 of the TA. The observed morning and evening peak hour traffic flows were increased to 2023 levels using growth factors from TEMPRO (version 7.2, dataset 72b), which includes links to the National Traffic Model and are shown at Diagrams TAA1 and TAA2 in the TAA.

12.4.6 Chapter 6 of the TA defines the agreed study area for assessment. Within that study area, seven-day automatic traffic counts (ATCs) were undertaken from 31 October 2017 at the following locations:

- Willen Road (north) approximately halfway between the Willen Road/Marsh End Road junction and the existing Marsh End Roundabout.
- Willen Road (south), approx. 300m south of the existing Marsh End Roundabout.
- A422 (east), approx. 300m east of Marsh End Roundabout.
- A509, approximately halfway between M1 Junction 14 and the Tickford Roundabout.
- Tongwell Street, approx. 200m east of Tongwell Roundabout.
- High Street.
- Wolverton Road.

Further, AADT traffic flows on the M1 mainline north and south of junction 14 were taken from Highways England permanent count sites.

12.4.7 The observed AADT traffic flows were increased to 2023 levels using a growth factor from TEMPRO (version 7.2, dataset 72b), which includes links to the National Traffic Model. The growth rates for 'all roads' in the Milton Keynes 002 MSOA (2017 to 2023 (24 hrs)) is 1.1152.

12.4.8 The 2023 AM and PM peak hour, and 24-hour AADT background traffic flows are shown in **Table 12.4** below, and for clarification, the links are shown in **Figure 12.1**.

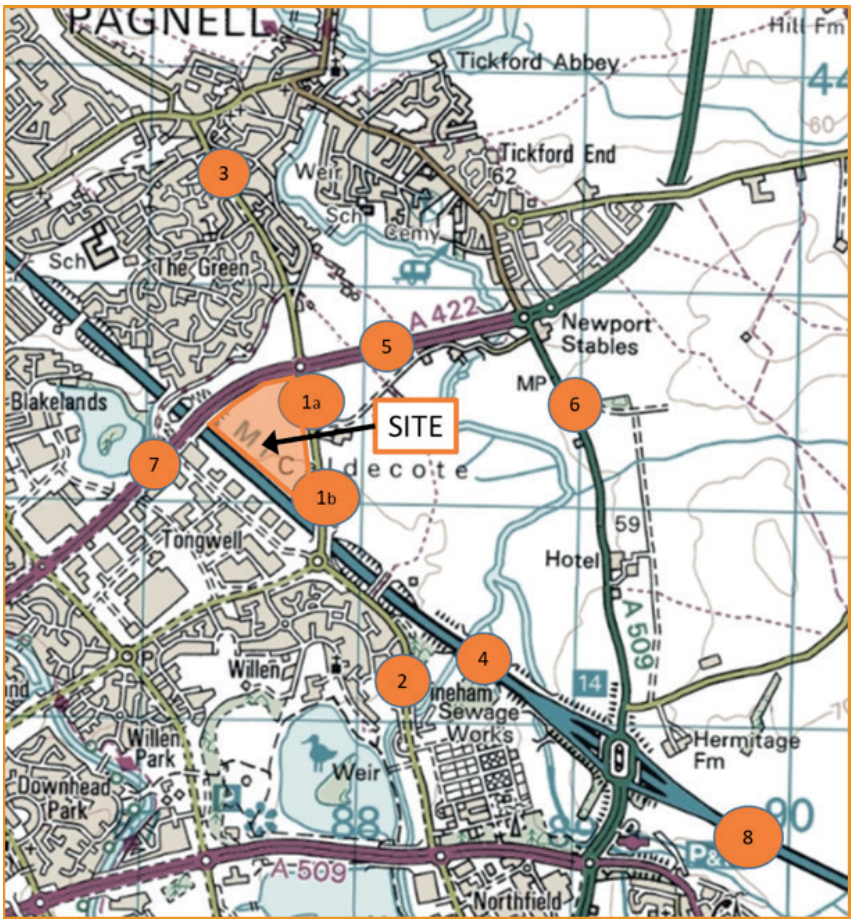

Figure 12.1: Link identification numbers

Table 12.4: 2023 two-way peak hour and AADT background traffic flows

Link	Road	2023 background - AM Peak			2023 background - PM Peak			2023 background - AADT		
		Total vehicles	HGVs	% HGVs	Total vehicles	HGVs	% HGVs	Total vehicles	HGVs	% HGVs
1	Willen Road									
1a	north of site access	2,167	44	2.0%	1,485	15	1.0%	15,606	217	1.4%
1b	south of site access	2,210	47	2.1%	1,458	11	0.8%	15,606	217	1.4%
2	Tongwell Street	1,788	53	3.0%	1,438	26	1.8%	13,397	430	3.2%
3	Marsh End Road	1,606	34	2.1%	1,743	14	0.8%	18,691	136	0.7%
4	M1 Mainline (north of M1 Junction 14)									
4a	southbound diverge	1,687	123	7.3%	1,043	72	6.9%	20,145	1,439	7.1%
4b	northbound merge	1,012	99	9.8%	1,561	80	5.1%	18,986	1,321	7.0%

Link	Road	2023 background - AM Peak			2023 background - PM Peak			2023 background - AADT		
		Total vehicles	HGVs	% HGVs	Total vehicles	HGVs	% HGVs	Total vehicles	HGVs	% HGVs
5	A422 east of Marsh end roundabout	3,225	115	3.6%	3,307	62	1.9%	28,546	963	3.4%
6	A509 London Road	1,378	132	9.6%	2,048	95	4.6%	23,853	961	4.0%
7	H3 Monks Way (west of Marsh End)	2,624	105	4.0%	3,013	61	2.0%	36,291	844	2.3%
8	M1 Mainline (south of M1 Junction 14									
8a	northbound diverge	1,827	53	2.9%	1,088	53	4.9%	21,510	782	3.6%
8b	southbound merge	897	65	7.2%	1,417	26	1.8%	17,075	671	3.9%

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CHAPTER 12

ENVIRONMENTAL STATEMENT

TRANSPORTATION

12.5 ASSESSMENT OF LIKELY SIGNIFICANT ENVIRONMENTAL EFFECTS

newlands developments

12.5 ASSESSMENT OF LIKELY SIGNIFICANT ENVIRONMENTAL EFFECTS

Identification of Effects

12.5.1 To determine the environmental effects of the change in traffic flows, a study area must be defined. In accordance with IEA guidelines there are two broad rules of thumb that should be used as a screening process to limit the scale and extent of the assessment. These are as follows:

"Rule One include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%)

Rule Two include any other specifically sensitive areas where traffic flows have increased by more than 10% or more".

12.5.2 The site access junction will be onto the Willen Road. The TA identifies that the majority of development traffic (both light vehicles and HGVs) will route via the A422, the A509 and Tongwell Street. These routes are regional or county roads of a good standard. Therefore, the majority of development traffic would not route through sensitive areas. The 30% threshold given in Rule One is applied to these routes within this assessment.

12.5.3 There is no suggestion that a 30% increase in traffic will necessarily correspond with a detrimental impact on the operation or safety of a road or junction or have any moderate to substantial adverse environmental impacts. This is because the capacity of the road or junction is directly related to the geometry and layout, and the existing traffic flows. Nevertheless, the 30% increase is used as a useful point of reference to define the study area for more detailed assessment.

12.5.4 The TA adopted much more stringent criteria for determining where traffic impacts might have an adverse impact. The scoping report (Appendix C of the TA) considered an area of influence where roads would experience a traffic increase of greater than 5%. Based on the analysis in the Scoping Report, the following TA study area was agreed with MKC and Highways England:

1. A422/A509 (Tickford Roundabout)
2. A422/Willen Road (Marsh End Roundabout)
3. Willen Road/Dansteed Way (Tongwell Roundabout)
4. A509/Tongwell Street/V11 (Pineham Roundabout)
5. A509/H6 Childs Way/A5130 Fen Street (Northfield Roundabout)
6. M1 Junction 14.

12.5.5 Section 4 of the TA presents the forecast modal split and associated peak hour and daily person and vehicular trip generation for the Proposed Development. The trip rates were agreed with MKC and Highways England.

12.5.6 The calculated peak hour and daily traffic flows were then distributed and assigned to the highway network using the distribution patterns from the TA. The peak hour and daily Proposed Development traffic flows on each of the links are shown in **Table 12.5**.

12.5.7 The '2023 with development' traffic flows were calculated by adding **Tables 12.4** and **12.5.** The resultant traffic flows are shown in **Table 12.6.**

12.5.8 The percentage change in total vehicle traffic flows on each of the links as a result of the Proposed Development, in both the morning and evening peak hours and AADT, was calculated and are shown in **Table 12.7.** The same comparison was also undertaken for HGV traffic flows, as shown in **Table 12.8.**

Table 12.5: Two-way peak hour and AADT development traffic flows

Link	Road	2023 development - AM Peak		2023 development - PM Peak		2023 development - AADT	
		Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
1	Willen Road						
1a	north of site access	75	22	92	20	1,145	316
1b	south of site access	71	15	88	13	1,087	210
2	Tongwell Street	46	15	54	13	693	210
3	Marsh End Road	6	0	7	0	92	0
4	M1 Mainline (north of M1 Junction 14)						
4a	southbound diverge	23	8	12	7	240	113
4b	northbound merge	9	7	23	6	219	98
5	A422 east of Marsh end round-about	44	19	52	17	655	263
6	A509 London Road	31	15	36	14	466	210
7	H3 Monks Way (west of Marsh End)	25	3	33	3	398	53
8	M1 Mainline (south of M1 Junction 14						
8a	northbound diverge	23	8	12	7	240	113
8b	southbound merge	8	7	23	6	213	98

Table 12.6: 2023 Two-way peak hour and AADT with development traffic flows

Link	Road	2023 with development - AM Peak			2023 with development - PM Peak			2023 with development - AADT		
		Total vehicles	HGVs	% HGVs	Total vehicles	HGVs	% HGVs	Total vehicles	HGVs	% HGVs
1	Willen Road									
1a	north of site access	2,242	66	2.9%	1,577	35	2.2%	16,751	533	3.2%
1b	south of site access	2,281	62	2.7%	1,546	24	1.6%	16,693	427	2.6%
2	Tongwell Street	1,834	68	3.7%	1,492	39	2.6%	14,090	640	4.5%
3	Marsh End Road	1,612	34	2.1%	1750	14	0.8%	18,783	136	0.7%
4	M1 Mainline (north of M1 Junction 14)									
4a	southbound diverge	1,710	131	7.7%	1,055	79	7.5%	20,385	1,552	7.6%
4b	northbound merge	1,021	106	10.4%	1,584	86	5.4%	19,205	1,419	7.4%
5	A422 east of Marsh end roundabout	3,269	134	4.1%	3359	79	2.4%	29,201	1226	4.2%
6	A509 London Road	1,409	147	10.4%	2,084	109	5.2%	24,319	1,171	4.8%
7	H3 Monks Way (west of Marsh End)	2,649	108	4.1%	3,046	64	2.1%	36,689	897	2.4%
8	M1 Mainline (south of M1 Junction 14									
8a	northbound diverge	1,850	61	3.3%	1,100	60	5.5%	21,750	895	4.1%
8b	southbound merge	905	72	8.0%	1,440	32	2.2%	17,288	769	4.4%

Table 12.7: Percentage change in total vehicle two-way traffic flows as a result of the Proposed Development

Link	Road	AM Peak Hour (total vehicles)			PM Peak Hour (total vehicles)			AADT (total vehicles)		
		2023 Background	Dev traffic	% change	2023 Background	Dev traffic	% change	2023 Background	Dev traffic	% change
1	Willen Road									
1a	north of site access	2,167	75	3.5%	1,485	92	6.2%	15,606	1,145	7.3%
1b	south of site access	2,210	71	3.2%	1,458	88	6.0%	15,606	1,087	7.0%
2	Tongwell Street	1,788	46	2.6%	1,438	54	3.8%	13,397	693	5.2%
3	Marsh End Road	1,606	6	0.4%	1,743	7	0.4%	18,691	92	0.5%
4	M1 Mainline (north of M1 Junction 14)									
4a	southbound diverge	1,687	23	1.4%	1,043	12	1.2%	20,145	240	1.2%
4b	northbound merge	1,012	9	0.9%	1,561	23	1.5%	18,986	219	1.2%
5	A422 east of Marsh end roundabout	3,225	44	1.4%	3,307	52	1.6%	28,546	655	2.3%
6	A509 London Road	1,378	31	2.2%	2,048	36	1.8%	23,853	466	2.0%
7	H3 Monks Way (west of Marsh End)	2,624	25	1.0%	3,013	33	1.1%	36,291	398	1.1%
8	M1 Mainline (south of M1 Junction 14									
8a	northbound diverge	1,827	23	1.3%	1,088	12	1.1%	21,510	240	1.1%
8b	southbound merge	897	8	0.9%	1,417	23	1.6%	17,075	213	1.2%

Table 12.8: Percentage change in HGV two-way traffic flows as a result of the Proposed Development

Link	Road	AM Peak Hour (HGVs)			PM Peak Hour (HGVs)			AADT (HGVs)		
		2023 Background	Dev traffic	% change	2023 Background	Dev traffic	% change	2023 Background	Dev traffic	% change
1	Willen Road									
1a	north of site access	44	22	50.0%	15	20	133.3%	217	316	145.6%
1b	south of site access	47	15	31.9%	11	13	118.2%	217	210	96.8%
2	Tongwell Street	53	15	28.3%	26	13	50.0%	430	210	48.8%
3	Marsh End Road	34	0	0.0%	14	0	0.0%	136	0	0.0%
4	M1 Mainline (north of M1 Junction 14)									
4a	southbound diverge	123	8	6.5%	72	7	9.7%	1,439	113	7.9%
4b	northbound merge	99	7	7.1%	80	6	7.5%	1,321	98	7.4%
5	A422 east of Marsh end roundabout	115	19	16.5%	62	17	27.4%	963	263	27.3%
6	A509 London Road	132	15	11.4%	95	14	14.7%	961	210	21.9%
7	H3 Monks Way (west of Marsh End)	105	3	2.9%	61	3	4.9%	844	53	6.3%
8	M1 Mainline (south of M1 Junction 14									
8a	northbound diverge	53	8	15.1%	53	7	13.2%	782	113	14.5%
8b	southbound merge	65	7	10.8%	26	6	23.1%	671	98	14.6%

12.5.9 As shown in Table 12.7, in terms of the total 2023 two-way peak hour traffic flows, there are no links that would experience an increase in traffic greater than 30% of the 2023 two-way background flow. Further, there are no increases in traffic flow greater than 30% when considering the 2023 two-way daily flows for total vehicles.

12.5.10 However, Willen Road either side of the proposed site access (links 1a and 1b) and Tongwell Street (link 2) would be subject to a greater than 30% increase in peak hour and daily HGVs.

Study area

12.5.11 The study area for this assessment therefore comprises:

- Willen Road north of the site access (link 1a)
- Willen Road south of the site access (link 1b)
- Tongwell Street (link 2).

12.5.12 Beyond the study area, the environmental conditions would not be materially changed.

Prediction of Effect Magnitude and significance

12.5.13 The potential environmental effects associated with the transport implications of the development fall under three general headings:

a) disruption due to construction
b) impacts during operation on pedestrians, cyclists, equestrians and the community (termed pedestrians and others) with regards to:
   - journey length and local travel patterns;
   - amenity; and
   - severance.

Disruption due to construction

12.5.14 The development team has extensive experience of delivering large employment sites, such as the Proposed Development. Through this experience, the Developer has established daily vehicle trip rates (by vehicle type) associated with the various construction components, including earthworks, utilities, drainage and highways infrastructure, buildings and landscaping. These trip rates can be applied across the anticipated duration of each construction component to give the daily construction traffic flows. These trips rates and calculations are provided at Table 12.9 below.

12.5.15 The construction programme has been estimated to be 15 months (78 weeks), divided into four stages. The first two stages would last 26 weeks per stage, the third stage would be 12 weeks and the fourth stage would 22 weeks (though stages 3 and 4 would overlap and run concurrently). Based on the construction activities planned within each stage, the level of daily construction traffic in each can be more accurately estimated, as provided at Table 12.10 below.

12.5.16 Table 12.10 shows that during construction stage 1 (weeks 1 to 26) there would be circa. 625 two-way daily vehicle trips, including 239 two-way HGV trips, associated with the construction of the Proposed Development. The construction traffic would reduce to 575 two-way daily vehicle trips (234 two-way HGV trips) during stage 2 (weeks 27 to 52) and 414 two-way daily vehicle trips (176 two-way HGV trips) in stage 3 (weeks 53 to 65). Table 12.10 also shows that once the construction of the buildings is completed after week 65, the remaining construction activities in stage 4 would be associated with landscaping which would not generate significant daily vehicle movements.

12.5.17 Hence, the greatest impact on the study area due to the construction would occur during stage 1 (weeks 1 to 26) and so this period has been used for considering the impact of construction traffic.

12.5.18 All construction traffic has been assigned to the study area using the distribution patterns agreed with MKC and Highways England. In terms of HGVs, it was agreed with both MKC Highways and Highways England that the distribution pattern for HGVs would be 40% routing to/from the M1(N), 40% routing to/from the M1(S), 10% routing along the A509(E) and 10% routing along the A422(W).

12.5.19 Where possible, all HGV movements will be organised to occur outside the highway network peak hours. A construction management plan, which will include a routing strategy for vehicles travelling on the local highway network and Strategic Road Network will be conditioned.

Table 12.9: daily construction traffic generation calculations

Component	Input Unit	Trip rates (one-way)					Quantity	Construction Totals					Duration		Movements per day					
		HGV	LGV	Car	Vans	Total		HGV	LGV	Car	Vans	Total	Yrs	Day	HGV	LGV	Car	Vans	Lights	Total
Roads (Onsite)	m2	0.5	0.125	0.55	0.75	1.925							0.5	125						
Offline Highways	m2	0.35	0.1	0.325	0.275	1.05	19,572	6,850	1,957	6,361	5,382	20,551	1	250	27	8	25	22	55	82
Earthworks	m3	0.001	0.0005	0.002	0.0075	0.011	250,000	250	125	500	1,875	2,750	0.5	125	2	1	4	15	20	22
Offsite Utilities	m	0.065	0.0325	0.06	0.075	0.2325	5,000	325	163	300	375	1,163	0.5	125	3	1	2	3	7	9
Offsite plumbing main	m	0.14	0.07	0.1	0.15	0.46	1,000	140	70	100	150	460	0.3	75	2	1	1	2	4	6
Landscaping	ft2	0.0001	0.0004	0.0002	0.0004	0.0011	875,000	88	350	175	350	963	0.5	125	1	3	1	3	7	8
Infrastructure								**7,653**	**2,665**	**7,436**	**8,132**	**25,886**			**35**	**14**	**35**	**44**	**93**	**127**
Buildings	**ft2**	**0.0325**	**0.0065**	**0.015**	**0.02**	**0.077**	**875,000**	**28,438**	**5,688**	**13,125**	**17,500**	**64,750**	**1.25**	**325**	**88**	**18**	**40**	**54**	**112**	**199**
Total arrivals															122	31	75	98	204	327
Total departures															122	31	75	98	204	327
Two-way															**244**	**63**	**150**	**196**	**409**	**653**

Table 12.10: daily construction traffic movements per programme stage

Component	Daily Movements																			
	Weeks 1-26					Weeks 27-52					Weeks 53-65					Weeks 56-78				
	HGV	LGV	Car	Vans	Total	HGV	LGV	Car	Vans	Total	HGV	LGV	Car	Vans	Total	HGV	LGV	Car	Vans	Total
Offline Highways	27	8	25	22	82	27	8	25	22	82										
Earthworks	2	1	4	15	22															
Offsite Utilities	3	1	2	3	9															
Offsite plumbing main						2	1	1	2	6										
Landscaping											1	3	1	3	8	1	3	1	3	8
Infrastructure	**32**	**10**	**32**	**40**	**114**	**29**	**9**	**27**	**24**	**88**	**1**	**3**	**1**	**3**	**8**	**1**	**3**	**1**	**3**	**8**
Buildings	**88**	**18**	**40**	**54**	**199**	**88**	**18**	**40**	**54**	**199**	**88**	**18**	**40**	**54**	**199**					
Development total	**120**	**28**	**72**	**93**	**313**	**117**	**26**	**67**	**77**	**288**	**88**	**20**	**42**	**57**	**207**	**1**	**3**	**1**	**3**	**8**
Two-way	**239**	**55**	**144**	**187**	**625**	**234**	**53**	**134**	**155**	**575**	**176**	**41**	**84**	**113**	**414**	**1**	**6**	**3**	**6**	**15**

12.5.20 Based on the above, it is possible to quantify the impact of the additional trips on the study area links. As shown in **Table 12.11**, the impact of the additional trips over the 24-hour AADT period is as follows:

Link	Road	AADT (total construction vehicles)		
		2023 Background	Construction traffic	% change
1	Willen Road			
1a	north of site access	15,606	331	2.1%
1b	south of site access	15,606	294	1.9%
2	Tongwell Street	13,397	206	1.5%

12.5.21 Table 12.11 shows that the greatest increase in daily flows would be on Willen Road north of the site access, where the impact due to the construction traffic would be 2.1% compared to the background traffic flows. This is well within typical day-to-day variation in traffic flows. Therefore, the impact on the study area due to the construction traffic would not be material. Further, the increase in vehicle movements during the construction phase is significantly less than the increase forecast during the operational phase of the development, which is assessed within the TA.

12.5.22 With reference to **Table 12.3,** the construction phase of the development would have a **temporary adverse** impact of **minor significance** on both Willen Road and Tongwell Street. Therefore, overall, the construction phase of the development would have a **temporary adverse** impact of **minor significance** within the study area.

Impacts on pedestrians, cyclists, equestrians and the community

12.5.23 Before assessing the environmental impacts on pedestrians, cyclists and equestrians, it is necessary to highlight the key conclusions of the TA. The TA concludes that:

"There are opportunities for pedestrian and cycle travel, with a number of residential areas within walking and cycling distance. The development would provide a new Redway (footway/cycleway), connecting to Newport Pagnell to the north, and the existing H4 Redway Super Route in Milton Keynes to the south. The new Redway would facilitate safe pedestrian and cycle travel to the site, providing a new facility for existing pedestrians and cyclists wishing to walk and cycle between Newport Pagnell and Milton Keynes, where there is currently no infrastructure provided along the Willen Road corridor.

There are opportunities for public transport travel, including both bus and rail. Route C10 provides a regular bus service running past the site at an hourly frequency throughout the day, and Route 1 provides an hourly service passed the site in the evenings and on Sundays. As part of the proposed development new bus stops would be provided on Willen Road.

There are five train stations within the Milton Keynes area, with Milton Keynes Central being the main station. Milton Keynes Central is just beyond a 5km cycling distance of the proposed development site. However, both bus services Route 1 and C10 travel via the train station. Therefore, there are opportunities for rail travel as part of a multi-modal journey by cycle, bus or taxi."

12.5.24 The number of off-site pedestrians, cyclist and public transport user trips that would be generated by the Proposed Development was determined in Section 4 of the TA. It was concluded that 7.6% of the total trips generated by the Proposed Development would be pedestrians, 2.8% of the total trips would be cyclists, and 2.8% would be by bus. The Proposed Development would therefore generate the following number of two-way person trips on the local transport infrastructure:

Table 12.12: two-way person trips

	peak hour	daily
Pedestrians (7.6%)	14	164
Cyclists (2.8%)	5	60
Public transport users (2.8%)	5	61

Journey length and local travel patterns

12.5.25 Journey length includes both the distance travelled, and time taken, for pedestrians and others. The time taken is a combination of moving time, whether walking or riding, and time spent waiting, for example to cross a road.

12.5.26 There are opportunities for pedestrian and cycle travel, with a number of residential areas within walking and cycling distance. To the south of the site, there is a footway-cycleway (known locally as a Redway) on the northern side of Willen Road from the Tongwell Roundabout, approximately 100 metres from the southern site boundary. This connects to the footways on Michigan Drive through the employment area in Tongwell to the west of the site and continues parallel to the H4 Dansteed Way to connect to the residential area of Pennyland further west. It also crosses under Dansteed Way to connect to the residential area of Willen and Willen Park.

12.5.27 However, within the identified study area, there are no existing footway or cycle facilities on Willen Road or Tongwell Street. Therefore, the additional traffic on Willen Road and Tongwell Street as a result of the proposed development will not have a material impact on existing pedestrians as there are no opportunities for pedestrian movements on these links.

12.5.28 As stated at paragraph 12.7, a new footway/cycleway (Redway) would be installed on Willen Road as part of the development proposals to facilitate travel along the desire lines to both Newport Pagnell to the north and Milton Keynes to the south. The new Redway would extend over the Marsh End Roundabout (A422) and along Willen Road (N) to improve the connectivity of the site to Newport Pagnell to the north. The Redway would also extend over the M1 bridge to the south to connect to the H4 Redway Super Route and Milton Keynes. This provision would provide a significant benefit both to employees and visitors at the Proposed Development, but also to existing pedestrians and cyclists wishing to walk and cycle between Newport Pagnell and Milton Keynes, where there is currently no infrastructure provided.

12.5.29 All existing cycle movements on Willen Road and Tongwell Street would be on the carriageway. Cyclists who chose to remain on the carriageway once the new Redway infrastructure is implemented on Willen Road may experience additional delay on Willen Road due to the proposed traffic signals at the site access junction and also at the March End roundabout which would be upgraded to traffic signal control under the mitigation proposals. Hence journey times for existing cyclists on Willen Road may increase. However, the proposed Redway will provide a new and direct off-road cycle route linking Newport Pagnell with the Redway network within Milton Keynes. Therefore, for those cyclists seeking to use off-road routes, journey length would be reduced.

12.5.30 With reference to **Table 12.3,** the Proposed Development would therefore have a **permanent beneficial** impact of **moderate significance** on pedestrian and cycle journey length and local travel patterns for Willen Road. On Tongwell Street, the Proposed Development would have a **negligible** impact of **negligible significance** on pedestrian and cycle journey length and local travel patterns Therefore, overall, it is concluded that the Proposed Development would have a **permanent beneficial impact** of **minor significance** on pedestrian and cycle journey length and local travel patterns.

Amenity

12.5.31 Amenity can be defined as the relative pleasantness of a journey for pedestrians and others. This is mainly influenced by the volume and composition of traffic on an adjacent link. Other key contributory factors are the standard and width of footways/cycleways, the street furniture provided, planting and landscaping. Amenity can also be defined as a desirable or useful feature or facility, such as a footway, cycleway or crossing.

12.5.32 With respect to impacts on amenity, the IEA guidance describes changes in traffic volumes of up to 30% as slight, up to 60% as moderate and up to 90% as substantial. Therefore, it is necessary to assess the impact as summarised in **Table 12.13** below.

Table 12.13: Impact on amenity as a result of % change in flows

Link	Study area	2023 Morning Peak		2023 Evening Peak		2023 AADT	
		Total vehs	HGV	Total vehs	HGV	Total vehs	HGV
3a	Willen Road (north of the site access)	3.5%	50.0%	6.2%	133.3%	7.3%	145.6%
		Slight	Substantial	Slight	Substantial	Slight	Substantial
3b	Willen Road (south of the site access)	3.2%	31.9%	6.0%	118.2%	7.0%	96.8%
		Slight	Moderate	Slight	Substantial	Slight	Substantial
4	Tongwell Street	2.6%	28.3%	3.8%	50.0%	5.2%	48.8%
		Slight	Slight	Slight	Substantial	Slight	Moderate

12.5.33 Willen Road and Tongwell Street are not currently used by pedestrians as there is no infrastructure provided. Further, there is no infrastructure provided for cyclists, who must use the carriageway. As discussed above, the development proposals would provide a new Redway on Willen Road. Further, Toucan crossing facilities would also be provided at the site access junction and as part of the mitigation proposals at the Marsh End roundabout. Therefore, the development proposals would deliver a material improvement in the facilities, or amenity, available to pedestrians and cyclists on Willen Road.

12.5.34 **Table 12.13** shows that the increases in the total number of vehicles within the study area would result in a slight impact on amenity with the development in place. However, **Table 12.13** also shows that on balance, the increase in HGVs on Willen Road and on Tongwell Street as a result of the Proposed Development would lead to substantial and moderate impacts on amenity, respectively.

12.5.35 Based on the matrix in **Table 12.3,** a substantial increase on a Borough receptor results impact of **moderate significance** on the amenity for pedestrians and cyclists on Willen Road. However, the overall change in traffic flow on Willen Road is slight and there are currently no pedestrians using this link and only a small number of cyclists on the carriageway. Further, the proposals to provide a new Redway along Willen Road with Toucan crossing facilities at the site access and the Marsh End roundabout must also be taken into account as they would materially improve amenity for both pedestrians and cyclists. Therefore, it is concluded that the Proposed Development would have a **permanent beneficial** impact of **minor significance** on the amenity for pedestrians and cyclists on Willen Road.

12.5.36 On Tongwell Street, based on the matrix in **Table 12.3**, a moderate increase on a Borough receptor results in a minor impact. The overall change in traffic flow on Tongwell Street is slight and there are currently no pedestrians using this link and only a small number of cyclists on the carriageway. Therefore, it is concluded that the Proposed Development would have a **permanent** impact of **negligible significance** on the amenity of Tongwell Street.

12.5.37 Overall, it is concluded that the Proposed Development would have a **permanent beneficial** impact of **minor significance** on the amenity for pedestrians and cyclists on the study area.

Severance

12.5.38 Severance is defined as the separation of residents from facilities and services they use within their community caused by new or improved roads or by changes in traffic flows. As noted in the IEA guidelines: "*factors which need to be given attention in determining whether severance is likely to be an important issue include road width, traffic flow and composition, traffic speeds, the availability of crossing facilities and the number of movements that are likely to cross the affected route".*

12.5.39 The IEA guidelines go on to state that: *"an assessment of severance should aim to estimate the current severance caused by traffic and related factors, and the extent to which additional traffic will exacerbate this problem".*

12.5.40 Severance can be described as slight, moderate or severe. In accordance with the DMRB, an AADT flow of below 8,000 vehicles is described as slight, whilst a flow of between 8,000 and 16,000 is described as moderate severance. The threshold between moderate and severe severance is an AADT flow of 16,000 vehicles or more.

12.5.41 A comparison of the 2023 background AADT flows (from **Table 12.4**), and the 2023 with development AADT flows (from **Table 12.6**) is summarised in **Table 12.11** below.

Table 12.14: Severance

Link	Road	2023 background AADT (total vehicles)	2023 with development AADT (total vehicles)
3a	Willen Road (north of the site access)	15,606	16,751
		Moderate	Severe
3b	Willen Road (south of the site access)	15,606	16,693
		Moderate	Severe
4	Tongwell Street	13,397	14,090
		Moderate	Moderate

12.5.42 Table 12.14 demonstrates that based on the traffic flow thresholds, there would not be a material change to the existing severance on Tongwell Street. Hence the Proposed Development would have a **long term, permanent** impact of **negligible significance** on severance for Tongwell Street.

12.5.43 On Willen Road, Table 12.14 shows that the severance due to the development traffic flows would change from moderate to severe with the development in place.

12.5.44 However, as discussed above, there are currently no pedestrian or cycle facilities on Willen Road or Tongwelll Street. Further, the Application Site is privately owned and is therefore not used by members of the public. There are no public footpaths crossing the site. Hence, the Proposed Development cannot be said to cause separation of residents from facilities and services. On the contrary, the proposed Redway facility on Willen Road and the Toucan Crossings at the site access and at the March End roundabout will remove existing severance, providing a high-quality pedestrian and cycle connection between Newport Pagnell and Milton Keynes, as well as linking the Proposed Development with the allocated residential development sites to the east.

12.5.45 Therefore, irrespective of the increase in traffic, the proposed pedestrian and cycle infrastructure on Willen Road would result in an overall **permanent beneficial** impact of **minor significance** on severance.

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12.6 CUMULATIVE EFFECTS

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12.6 CUMULATIVE EFFECTS

12.6.1 Section 6 of the TA details how the assessment traffic flows have been derived, including the allowances for committed development and traffic growth to the assessment years. This approach was agreed with MKC and Highways England and hence ensures that the cumulative impacts with committed development within the study area have been assessed.

12.6.2 Notwithstanding the above, the application site forms part of 'Milton Keynes East' (MK:East), an allocation for a strategic urban extension within the adopted Plan:MK. Milton Keynes Council's (MKC) objectives for the allocation are set out within policy SD12, which envisages a comprehensive new residential and employment development to meet the long-term needs of Milton Keynes. The allocation sets aside 105ha of land for a mix of employment uses and the delivery of around 5,000 new homes.

12.6.3 In support of a large development within the MK:East allocation that is being promoted by Berkeley St James, the Milton Keynes East Environmental Statement ('ES') sets out the findings of an Environmental Impact Assessment ('EIA'). A TA has also been prepared to support the EIA.

12.6.4 The TA submitted with the Berkeley application, whilst focusing on the parts of the allocation promoted by Berkeley, is supported by strategic transport modelling using the Milton Keynes Multi-Modal Model ('MKMMM') that assesses and takes into account all parts of the MK:East allocation, including the proposed development site on land at Caldecote Farm. In that way the assessment considers the cumulative impact of the whole MK:East allocation, and identifies the infrastructure required to deliver the allocation as a whole.

12.6.5 Section 6.6 of the Berkeley TA identifies the off-site junctions that require further review and assessment as part of the detailed study area for assessment under the cumulative assessment. This includes the Marsh End Roundabout. Section 12 of the Berkeley TA goes on to model the operation of the Marsh End Roundabout with the proposed comprehensive improvement scheme for the junction that would be delivered by the proposed development on land at Caldecote Farm.

12.6.6 The results of that assessment show that the improved junction layout would operate with spare capacity in the 2031 Do-Something scenario, and also the 2048 Do-something scenario with the full MK:East allocation in place. The Berkeley TA concludes that the *"...improvements to the junction are considered capable of accommodating the traffic associated with the proposed MKE development."*

12.6.7 The conclusion of the assessment work undertaken for the MK:East allocation (section D8.0 of the EIA) demonstrates that with the proposed infrastructure in place, and the improvement works associated with the Proposed Development, there would not be any transport-related significant environmental effects.

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12.7 MITIGATION MEASURES

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12.7 MITIGATION MEASURES

12.7.1 The Proposed Development would include the following transport measures and improvements:

- a new Redway (footway/cycleway) on Willen Road, connecting to Newport Pagnell to the north and the existing H4 Redway Super Route in Milton Keynes to the south. The new Redway would facilitate safe pedestrian and cycle travel to the site, providing a new facility for existing pedestrians and cyclists wishing to walk and cycle between Newport Pagnell and Milton Keynes, where there is currently no infrastructure provided along the Willen Road corridor;
- Toucan crossings at the proposed site access junction to facilitate safe crossing of the site access and Willen Road;
- Travel Plan measures with targets to reduce single occupancy car travel, by promoting walking, cycling, bus travel and car sharing;
- new bus stops on Willen Road at the site access junction;
- a comprehensive mitigation scheme is proposed at Marsh End Roundabout. The improved junction will operate in conjunction with the proposed signal-controlled site access junction, to improve traffic flows and journey times through the area and along Willen Road.

Climate Change

12.7.2 Carbon dioxide (CO2) is a greenhouse gas which contributes to global warming effects and which is associated with climate change. Transport is one of the UK's largest emitters of greenhouse gases and hence, Transport is one of the sectors targeted where effective interventions can significantly reduce CO2 emissions and therefore reduce the impact of climatic changes.

12.7.3 The development sector can directly help to achieve targets on reducing greenhouse gas emissions by promoting sustainable modes of transport, encouraging use of low emission vehicles through provision of electric vehicle charging points and also introducing mitigation measures to reduce congestion.

12.7.4 A FTP has been prepared for the Proposed Development, setting out ways in which the development can reduce the number of vehicle trips to the site by promoting more sustainable travel options. The FTP promotes a range of measures aimed at achieving a 10% modal shift to sustainable modes.

12.7.5 To improve access to the site for pedestrians and cyclists, a new Redway (footway/cycleway) on Willen Road will be provided, connecting to Newport Pagnell to the north and the existing H4 Redway Super Route in Milton Keynes to the south. This will facilitate safe pedestrian and cycle travel to the site, providing a new facility for existing pedestrians and cyclists wishing to walk and cycle between Newport Pagnell and Milton Keynes, where there is currently no infrastructure provided. Toucan crossings at the proposed site access junction to facilitate safe crossing of the site access and Willen Road.

12.7.6 Electric vehicles charging spaces will be provided in accordance with MKC's standards that will be enabled with charging facilities for electric vehicles.

12.7.7 The development proposals include a comprehensive mitigation scheme at Marsh End Roundabout. The improved junction will operate in conjunction with the proposed signal-controlled site access junction, to improve traffic flows and journey times through the area and along Willen Road, resulting in reduced journey times and lower vehicle emissions.

12.7.8 Additionally, the Proposed Development provides a large number of jobs locally in an accessible location within the MK:East allocated site, which will minimises journey lengths for workers.

12.7.9 Therefore, through the measures set out in the FTP to encourage modal shift, the additional pedestrian and cycling infrastructure provision, the provision of significant onsite electric vehicle charging infrastructure and the identified highway mitigation proposals, the Proposed Development would directly help to achieve targets on reducing greenhouse gas emissions.

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12.8 RESIDUAL EFFECTS

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12.8 RESIDUAL EFFECTS

12.8.1 The construction phase of the development would have a **temporary adverse** impact of **minor significance** within the study area.

12.8.2 During the operation phase of the Proposed Development, with the identified mitigation measures in place, the residual impacts would be as follows:

- a **permanent beneficial** impact of **minor significance** on pedestrian and cycle journey length and local travel patterns and severance within the study area.
- a **permanent beneficial** impact of **minor significance** on the amenity for pedestrians and cyclists on the study area.
- a **permanent beneficial** impact of **minor significance** on severance.

12.8.3 Therefore, no further mitigation measures are required other than the introduction of a construction management plan containing a vehicle routing strategy.

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12.9 CONCLUSION

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12.9 SUMMARY

12.9.1 The environmental effects of the changing transport conditions as a result of the Proposed Development have been examined and are summarised in Table 12.15. The cumulative effect of nearby committed development was also taken into account. Appropriate mitigation has been included and the Proposed Development will not have any significant effects on the receptors within the study area.

12.9.2 During its operation, the Proposed Development would provide a residual advantageous environmental effect of minor significance.

Table 12.15: Summary of significance

Potential Effect	Nature of Effect (Permanent /Temporary)	Significance	Geographic Scale of Impact	Mitigation/ Enhancement Measures	Residual Effects
Construction					
Construction Traffic	Temporary	Minor adverse	Borough	Introduction of a construction management plan, containing a vehicle routing strategy, and management measures to limit vehicle movements in the peak hours and limit impacts including wheel washing.	Negligible
Operation					
Impacts on pedestrians, cyclists, and the community - Journey length and travel time	Permanent	Minor beneficial	Borough	None required	Minor beneficial
Impacts on pedestrians, cyclists, and the community - Amenity	Permanent	Minor beneficial	Borough	None required	Minor beneficial
Impacts on pedestrians, cyclists, and the community - Severance	Permanent	Minor beneficial	Borough	None required	Minor beneficial
Cumulative Effects					
No additional effects					